



MICCAI2022

Singapore

25th International Conference on Medical
Image Computing and Computer
Assisted Intervention

September 18–22, 2022

Resorts World Convention Centre Singapore



PROGRAM BOOK

<https://conferences.miccai.org/2022>



WELCOME



Dear MICCAI 2022 attendees,

On behalf of the MICCAI Society Board, I am wishing you a very warm welcome to MICCAI 2022, the 25th International Conference on Medical Image Computing and Computer Assisted Intervention that will be held from September 18th to 22nd, 2022 in Singapore.

After two years of virtual editions, we are thrilled to finally be able to host a long-awaited face-to-face conference again and excited that many of you can attend in person. This year also marks an innovation for MICCAI with its first hybrid edition, which will allow those who could travel to finally meet up, and those who cannot yet do so to continue to follow the scientific content and exchanges remotely.

We are delighted to note that despite the difficult times, confinements, multiple restrictions, complicated communication due to the virtual mode, and problems of all kinds, the number of participants in MICCAI has never dropped. Our community has remained vibrant, united, motivated, and admirably active in the fight against the pandemic. With all its strength, it has joined forces and mobilized around the world to provide important support to global health. This is also what the MICCAI community is all about, and we can all be proud to be part of it.

Once again, this edition promises to be rich in content and variety of quality work that will be presented throughout the week, as well as in all the diversity of the scheduled thematic events. All of this could not have happened without the outstanding work of the organizing team, led this year by Shuo Li, the program chairs and area chairs led by Linwei Wang, as well as the various MICCAI Society interest groups, satellite event organizers and committees, our PCO Dekon Congress and Tourism, the MICCAI admin team, and the support of our industrial sponsors. A conference would of course not be possible without the authors who share with us their scientific work and latest results, and the fantastic work of more than a thousand of reviewers. It is sometimes difficult to realize how many people worked behind the scenes for weeks or months to make the experience unique and successful, and I would like to thank them all here wholeheartedly.

Singapore is a beautiful, attractive, dynamic, and modern city, and a perfect place to hold an edition of MICCAI. This 25th edition promises to be a unique, memorable, and stimulating experience, the one of renewal, and perhaps the discovery of in-person conferences for some of you. For a quarter of a century, the MICCAI Society has been actively dedicated to providing an intellectually stimulating forum for the exchange of ideas in a professional and friendly environment. I trust you will all enjoy this meeting and bring back home good memories and exciting new ideas.

I wish you all an excellent and fruitful conference.

*Prof. Caroline Essert
MICCAI Society President*

WELCOME



Dear MICCAI colleagues,

On behalf of the organizing committee, it is my great honor to welcome you all to MICCAI 2022 in Singapore.

In the next few days, you will find that we have together created many firsts in the MICCAI history: the first non-virtual MICCAI since the onset of COVID-19, the first hybrid MICCAI combining in-person and virtual experiences, the first time childcare services is available onsite during the conference, the first time funding is offered to engage local community, and the first MICCAI conference in Southeast Asia, a very well-developed and populated area.

We are lucky to be in Singapore, a remarkable and memorable place to reboot the in-person MICCAI journey. Every attendant will enjoy the scientific content of the conference along with the wonderful culture the city has to offer. With multiple world-class research universities and institutes, Singapore is the education and research center in southeast Asia as well as the region's healthcare hub. Moreover, it has an attractive metropolis, wonderful sightseeing, delicious food, world-class transportation, affordable accommodation, recreation, and dining.

MICCAI 2022 is proud to announce our exciting scientific program, thanks to the support and contributions from each and every one of you! After two years of virtual presence, we are excited to bring back the single-track program, a MICCAI tradition since its inception in 1998 but modernized in a hybrid format. In this program, we will share 527 outstanding and interesting scientific contributions organized in eight oral and poster sessions, selected from over 1830 papers -- the record number of papers reviewed in MICCAI conferences. We are also excited to bring you three keynote speakers and a panel debate session, where the pioneers and leaders of the MICCAI Society will convene and debate whether AI is ready for prime clinical use in medical imaging.

Satellite events have become a highlight of the MICCAI program and have attracted record-high interest in MICCAI 2022. We made efforts to allocate more space and a flexible hybrid format to these events, as the community has responded with many high-quality proposals. We have attained a record number of highly valued Workshops, Tutorials, and Challenges (36, 10, and 38, respectively), representing the wide variety of interests and frontlines born directly from our community.

MICCAI 2022 is proud of the unique and well-rounded program of activities organized by our MICCAI Student Board (MSB). Besides the traditional Academia & Industry event on the first conference evening, the student board will organize a tour around NUS and NTU university campuses along with two cultural city tours so attendees can explore Singapore. As in previous in-person conferences, morning runs, and a soccer game complete the student board activities itinerary. Finally, the educational challenge carries on this year, and you can still vote for your preferred educational material from the MICCAI platform!

WELCOME

MICCAI 2022 is also very proud to include 'the second edition of CLINICCAI in the conference's program. CLINICCAI is a clinical day entirely composed of presentations by healthcare practitioners and focused on the translational and clinical aspects of medical image computing, computer-assisted interventions, and medical robotics. The program includes 20 oral presentations in different fields such as surgery, radiology, and pathology, an exciting keynote speech focused on tissue medicine, and a panel discussion dedicated to clinical translation. We believe that CLINICCAI will reinforce the clinical ties of MICCAI and explore further how to generate value for patients and healthcare systems.

MICCAI 2022 is deeply committed to supporting its members' career advancement and professional development. We are excited to have again an extraordinary group of mentors who work with students and early career researchers to reach their career dreams. If you cannot join the Mentorship Program in 2022, we hope you will join it in the future. Join us at the Startup Village, where entrepreneurship resides at MICCAI 2022. Please cast your vote at the pitch competition for the best real-time technology and learn what it takes to build your own business.

MICCAI 2022 would like to highlight the well-rounded events organized by the Women in MICCAI (WiM) committee. WiM continues to host the second edition of the 'WiM Inspirational Leadership Legacy (WILL)' initiative, including diverse and inspirational interviews from our MICCAI members. In addition to the networking event held earlier this year, the WiM committee brings back an in-person gathering open to the whole MICCAI community at the WiM lunch, where we invite five impactful female scientists to share their stories in the format of the panel discussion. Moreover, WiM has initiated the 'WiM award for Best Oral Presentation' to spotlight and support our female participants. The top 3 presenters and the final winner will be announced at the MICCAI 2022 Awards & Closing ceremony.

We have been lucky to raise record funding to make the first hybrid MICCAI conference memorable and affordable. We thank the Singapore Tourism Board (STB) for being the largest sponsor in the MICCAI history. We thank the MICCAI board for their timely support, allowing us to host MICCAI 2022 as a hybrid conference. We thank all the travel bursaries sponsored by our society and the National Institutes of Health (NIH) (USA) for helping our trainees in need. We thank all the corporate sponsors who have made a generous contribution at different levels during this uncertain time. This conference would not be the same without all this support!

We proudly thank the daily support of many colleagues, to whom we express our sincerest and deepest gratitude. Thanks to all the colleagues in the MICCAI 2022 organizing committee, who have spent many hours organizing the conference, reviewing, creating, and organizing programs. This event has been possible thanks to their efforts and enthusiasm. Special thanks to the MICCAI Board for the trust placed on us, to the MICCAI Student Board for their great enthusiasm, to the Women in MICCAI for their efforts to make our society inclusive, and to the MICCAI Secretariat and Dekon staff for their never-failing willingness to help, and for their professional solutions.

Now... let the show begin!

Dr. Shuo Li
MICCAI 2022 General Chair

PROGRAM OVERVIEW*

18 September 2022, Sunday

08:00 - 15:00	Satellite Events
15:30 - 19:00	Satellite Events
19:00 - 20:00	Welcome Cocktail

19 September 2022, Monday

08:30 - 09:00	Opening Ceremony
09:00 - 10:30	Oral Sessions - Computer Aided Diagnosis
10:30 - 11:30	Coffee Break / Poster Sessions - Computer Aided Diagnosis I
11:30 - 12:30	Keynote - Pheng Ann Heng Medical Intelligence and Extended Reality: Past, Present, and Future
12:30 - 13:30	Lunch break; RISE Lunch
13:30 - 14:30	Oral Sessions -Interpretability/Uncertainty
14:30 - 15:30	Coffee Break / Poster Sessions - Computer Aided Diagnosis II
15:30 - 17:00	Oral Sessions -Surgical Data Science
17:00 - 18:00	Poster Sessions - Computer-Assisted Interventions
18:00 - 19:00	Startup Village (Virtual)
19:00 - 21:00	MSB Academia & Industry Event
19:00 - 20:00	RISE networking event

20 September 2022, Tuesday

08:30 - 09:00	Challenge Overview
09:00 - 10:30	Oral Sessions - Image Reconstruction & Registration
10:30 - 11:30	Coffee Break / Poster Sessions - Image Segmentation, Registration & Reconstruction I
11:30 - 12:30	Keynote - Dinggang Shen Full-Stack, Full-Spectrum AI in Medical Imaging
12:30 - 12:40	EIA (Enduring Impact Award)
12:40 - 13:30	Lunch break
13:30 - 14:30	Oral Sessions -Microscopy Image Analysis
14:30 - 15:30	Coffee Break / Poster Sessions - Computational Physiology & Pathology
15:30 - 17:00	Oral Sessions -Image Segmentation
17:00 - 18:00	Poster Sessions - Image Segmentation, Registration & Reconstruction II
19:00 - 23:00	Gala Dinner

20 September 2022, Tuesday **CLINICAL DAY (CLINICCAI)**

08:00 - 08:15	Opening
08:15 - 09:30	CLINICCAI Oral Session 1 - Radiology (Including Coffee Break)
09:45 - 11:00	CLINICCAI Oral Session 2 - Surgery (Including Coffee Break)
11:30 - 12:30	MICCAI Keynote - Dinggang Shen
12:30 - 12:40	EIA (Enduring Impact Award)
12:40 - 13:30	Lunch break
13:30 - 14:30	CLINICCAI Oral Session 3 - Miscellaneous (Including Coffee Break)
15:00 - 16:00	CLINICCAI Keynote - Inti Zlobec
16:00 - 17:30	CLINICCAI Oral Session 4 - Pathology (Including Coffee Break)
17:30 - 18:15	Panel Discussion
18:15 - 18:30	Closing & Award
19:00 - 23:00	Gala Dinner

*Times are given in the Singapore time zone

PROGRAM OVERVIEW*

21 September 2022, Wednesday

08:30 - 09:30	Oral Sessions -Surgical Planning & Simulation
09:30 - 10:30	MICCAI 2022 Debate
10:30 - 11:30	Coffee Break / Poster Sessions- Image Segmentation, Registration & Reconstruction III
11:30 - 12:30	Keynote - Timnit Gebru Independent, Community Rooted "AI" Research
12:30 - 13:30	Lunch break; WIM Lunch
13:30 - 15:00	Oral Sessions -Integration Beyond Imaging
15:00 - 16:00	Coffee Break / Poster Sessions - Machine Learning Algorithms and Applications
16:00 - 16:30	General Assembly
16:30 - 17:30	Award & closing

22 September 2022, Thursday

08:00 - 15:30	Satellite Events
15:30 - 19:00	Satellite Events

*Times are given in the Singapore time zone

GENERAL INFORMATION

Registration Desk

Registration desk will be located the Basement floor of Resorts World Convention Centre.

The working hours of the registration desk will be as below;

18 September 2022, Sunday	07:00 - 19:00
19 September 2022, Monday	07:30 - 18:00
20 September 2022, Tuesday	07:30 - 18:00
21 September 2022, Wednesday	07:30 - 18:00
22 September 2022, Thursday	07:00 - 18:00

Exhibition - Opening Hours

Resorts World Convention Centre - Resorts World Ballroom / West Foyer will be used as exhibition area.

19 September 2022, Monday	08:00 - 19:00
20 September 2022, Tuesday	08:00 - 19:00
21 September 2022, Wednesday	08:00 - 17:30

Lunches and Coffee Breaks for Main Conference

Lunches and coffee breaks are included in the registration and will be served at Resorts World Ballroom / West Foyer and Resorts World West Ballroom where the exhibition area and the poster area is located.

Coffee Break and Lunch Break times are as following;

19 September 2022, Monday

10:30 - 11:30	1 st Coffee Break
12:30 - 13:30	Lunch Break
14:30 - 15:30	2 nd Coffee Break

20 September 2022, Tuesday

10:30 - 11:30	1 st Coffee Break
12:40 - 13:30	Lunch Break
14:30 - 15:30	2 nd Coffee Break

21 September 2022, Wednesday

10:30 - 11:30	1 st Coffee Break
12:30 - 13:30	Lunch Break
15:00 - 16:00	2 nd Coffee Break

GENERAL INFORMATION

Lunches and Coffee Breaks for Satellite Events

Lunches and coffee breaks are included in the registration and will be served at Resorts World Convention Centre Level 1 Foyers where the Satellite Event Meeting Rooms are located.

Coffee Break and Lunch Break times are as following;

18 September 2022, Sunday

09:30 - 10:00 1st Coffee Break

11:20 - 12:30 Lunch Break

15:00 - 15:30 2nd Coffee Break

22 September 2022, Thursday

09:30 - 10:00 1st Coffee Break

11:20 - 12:30 Lunch Break

13:10 - 13:40 2nd Coffee Break

Name Badges

Please wear your name badges at all times. Only MICCAI 2022 participants wearing official name badges will be allowed to access the conference site and attend the scientific and social programs.

Internet Access

Wifi access is available through the conference halls. The Wifi credentials are as below;

Wireless Name: MICCAI2022

Password: 20miccai22

Hybrid Presentations

MICCAI2022 will be a primarily in-person event with virtual components. The conference agenda will follow Singapore local time. All presenters (oral and poster) are expected to be available at the scheduled presentation time for live presentations, regardless of the presentation mode (in-person or virtual).

GENERAL INFORMATION

Poster Presentations

Resorts World Convention Centre - Resorts World Ballroom will be used as the poster area.

All accepted papers are to be presented as posters at the conference. In-person poster presentation must have a printed poster that will stay up throughout the three days of the main conference. During the assigned poster sessions, one

of the authors must present the paper at the poster. The posters may be mounted beginning at 07:00 on Monday, Sept 19, and must be removed on Wednesday, Sept 21, between 18:00 and 20:00. Posters left behind will be discarded. Virtual posters must be presented online at the assigned poster sessions. Virtual poster presenters will be given a zoom link and detailed instructions prior to the main conference regarding their attendance and presentation in the poster sessions.

Poster Identifiers

Each poster is assigned to a unique identifier. The letter indicates the day of the poster presentation and the number indicates the order of the poster.

The poster schedule and poster labelling will be as below;

19 September 2022, Monday

Session	Time	In Person Poster Labels	Virtual Poster Labels
Poster Session 1 - Computer Aided Diagnosis I	10:30 - 11:30	M1 – M43	MV-1-PC01 / MV-1-PC34
Poster Session 2 - Computer Aided Diagnosis II	14:30 - 15:30	M44 – M81	MV-2-PC01 / MV-2-PC37
Poster Session 3 - Computer-Assisted Interventions	17:00 – 18:00	M82 – M117	MV-3-PC01 / MV-3-PC39

20 September 2022, Tuesday

Session	Time	In Person Poster Labels	Virtual Poster Labels
Poster Session 4 - Image Segmentation, Registration & Reconstruction I	10:30 - 11:30	T1 – T38	TV-4-PC01 / TV-4-PC37
Poster Session 5 - Computational Physiology and Pathology	14:30 - 15:30	T39 – T74	TV-5-PC01 / TV-4-PC35
Poster Session 6 - Image Segmentation, Registration & Reconstruction II	17:00 – 18:00	T75– T110	TV-6-PC01 / TV-4-PC39

GENERAL INFORMATION

21 September 2022, Wednesday

Session	Time	In Person Poster Labels	Virtual Poster Labels
Poster Session 7 - Image Segmentation, Registration & Reconstruction III	10:30 - 11:30	W1 – W36	WV-7-PC01 / WV-7-PC38
Poster Session 8 - Computational Physiology and Pathology	15:30 - 16:30	W37 – W74	WV-8-PC01 / WV-8-PC38

Please find your poster number from the detailed poster session program.

Oral Presentations

For Oral sessions, presentations will be given live followed by a live Q&A. We will be using Pathable as our virtual platform. All sessions will be broadcast LIVE to Pathable where the virtual conference attendees can participate in real-time. We will be communicating with virtual presenters in September with detailed instructions on how to access your assigned session.

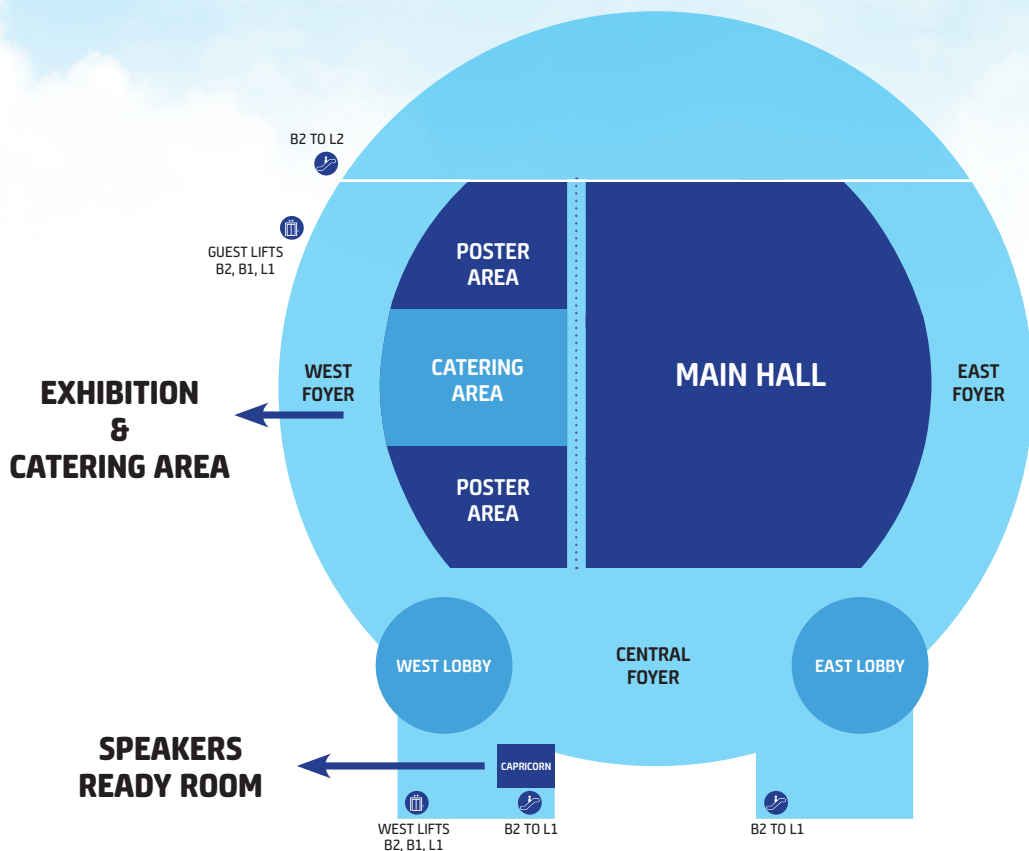
Satellite Events

The Satellite events will be hosted at Resorts World Convention Centre Level 1.

Please refer to the satellite events section at the program book to find the detailed program that shows the meeting room names per each satellite event.

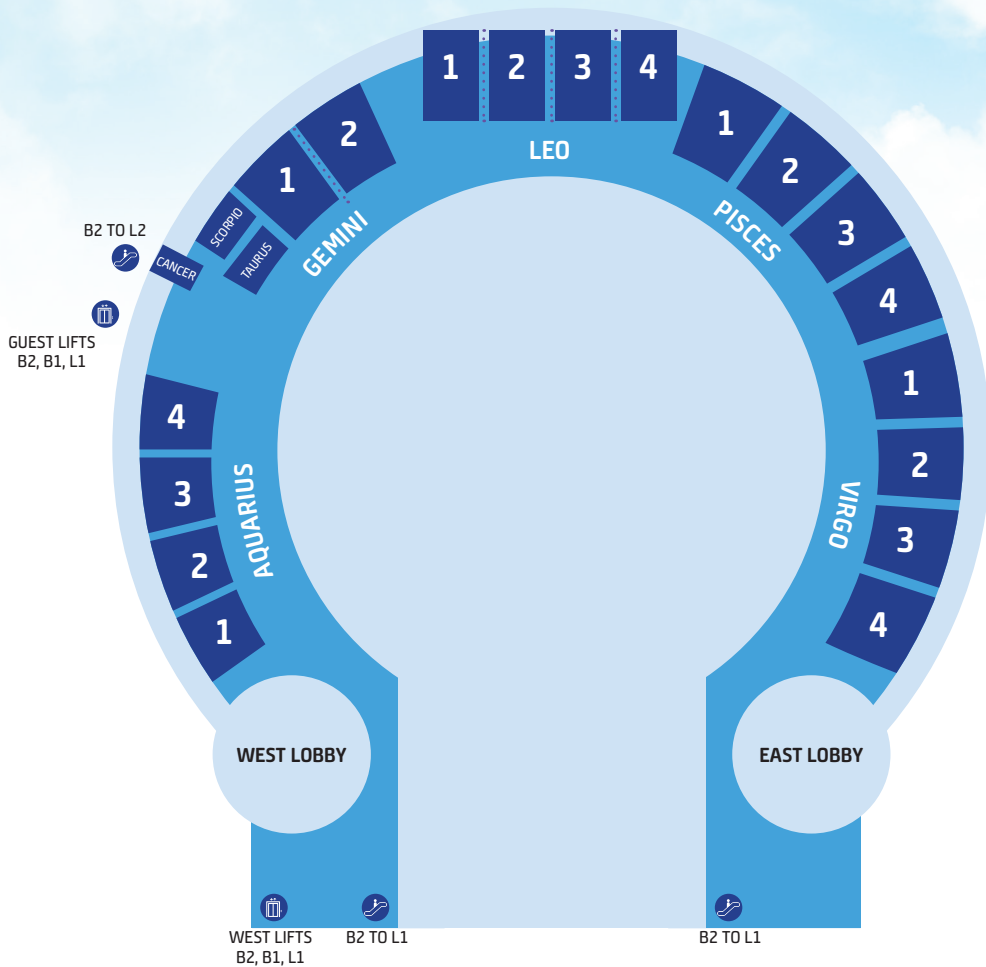
RESORTS WORLD CONVENTION CENTRE SINGAPORE – FLOOR PLAN

BASEMENT -2



RESORTS WORLD CONVENTION CENTRE SINGAPORE – FLOOR PLAN

LEVEL 1



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EXHIBITORS



INGREDIENT

KEYNOTES



PHENG ANN HENG

Medical Intelligence and Extended Reality: Past, Present, and Future

Monday, 19 September 2022 / 11:30 - 12:30

Pheng Ann Heng is a Professor at the Department of Computer Science and Engineering and Director of a newly established Institute of Medical Intelligence and XR at The Chinese University of Hong Kong.

He received his B.Sc. (Computer Science) from the National University of Singapore in 1985 and his Ph.D. (Computer Science) from Indiana University in 1992.

He joined NUS-JHU Center for Information-enhanced Medicine at NUS in 1992 as a Research Associate. He then joined the Department of Computer Science and Engineering at CUHK as an Assistant Professor in 1995 and became a Full Professor in 2002. He has formerly served as Department Chairman and as Head of Graduate Division. He has served as the Director of CUHK Virtual Reality, Visualization, and Imaging Research Centre since 1999 and the Director of Centre for Cognition and Interaction Technology at Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences since 2006.

Heng's research interests include AI/XR for medical applications, surgical simulation, visualization, computer graphics, and human-computer interaction. He has published over 550 publications in these areas with 32000+ Google citations. He has graduated over 50 Ph.D. students, many of them have taken positions at leading universities or research labs in Hong Kong and Mainland China.

KEYNOTES



DINGGANG SHEN

Full-Stack, Full-Spectrum AI in Medical Imaging

Tuesday, 20 September 2022 / 11:30 - 12:30

Dinggang Shen is a Professor and a Founding Dean with School of Biomedical Engineering, ShanghaiTech University, Shanghai, China, and also a Co-CEO of United Imaging Intelligence (UII), Shanghai. He is a Fellow of IEEE, The American Institute for Medical and Biological Engineering (AIMBE), The International Association for Pattern Recognition (IAPR), and The Medical Image Computing and Computer Assisted Intervention (MICCAI) Society. He was Jeffrey Hout Distinguished Investigator and a Full Professor (Tenured) with The University of North Carolina at Chapel Hill (UNC-CH), Chapel Hill, NC, USA, directing The Center of Image Analysis and Informatics, The Image Display, Enhancement, and Analysis (IDEA) Lab, and The Medical Image Analysis Core. His research interests include medical image analysis, machine learning, deep learning, and computer vision. He has published more than 1500 peer-reviewed papers in the international journals and conference proceedings, with H-index 124 and over 60K citations. He serves as an Editor-in-Chief for *Frontiers in Radiology*, as well as an associate editor (or editorial board member) for eight international journals. Also, he has served in the Board of Directors, The Medical Image Computing and Computer Assisted Intervention (MICCAI) Society, in 2012-2015, and was General Chair for MICCAI 2019.

KEYNOTES



INTI ZLOBEC

Tissue Medicine Goes Digital

Tuesday, 20 September 2022 / 15:00 – 16:00

Inti Zlobec is Professor of Digital Pathology (Extraordinarius) at the Institute of Pathology, University of Bern, Switzerland. Originally from Montreal, Canada, she graduated with a PhD degree in Experimental Pathology, from McGill University before moving to Switzerland in 2007. She received her Habilitation in 2010 after a post-doctoral fellowship at the University Hospital Basel, where she conducted tissue-based research including molecular pathology in the field of colorectal cancer using biostatistical models. Now, she leads an inter-disciplinary research group using artificial intelligence to study pathology data and images. The aim is to discover and validate novel prognostic and predictive biomarkers for cancer patients, and their potential implementation into diagnostic routine. Inti Zlobec is a member of the Executive Team of the Center for Artificial Intelligence in Medicine (CAIM) of the University of Bern, Co-Founder and President of the Swiss Consortium for Digital Pathology (SDiPath) and Chair of the European Society of Pathology (ESP) Working Group IT (Computational).

** This Keynote speech will be given as part of Clinical Day Program which will be held in Virgo 1-2-3 Room.*

KEYNOTES



TIMNIT GEBRU

Independent, Community Rooted "AI" Research

Wednesday, 21 September 2022 / 11:30 - 12:30

Timnit Gebru is the founder and executive director of the Distributed Artificial Intelligence Research Institute (DAIR). Prior to that she was fired by Google in December 2020 for raising issues of discrimination in the workplace, where she was serving as co-lead of the Ethical AI research team. She received her PhD from Stanford University, and did a postdoc at Microsoft Research, New York City in the FATE (Fairness Accountability Transparency and Ethics in AI) group, where she studied algorithmic bias and the ethical implications underlying projects aiming to gain insights from data. Timnit also co-founded Black in AI, a nonprofit that works to increase the presence, inclusion, visibility and health of Black people in the field of AI, and is on the board of AddisCoder, a nonprofit dedicated to teaching algorithms and computer programming to Ethiopian highschool students, free of charge.

MICCAI 2022 DEBATE

MICCAI 2022 Debate: Is AI Ready for Primetime Adoption in Medical Imaging

Wednesday, 21 September 2022 / 09:30 - 10:30

Debate Chairs : James Duncan, *Yale University, United States*
Dinggang Shen, *ShanghaiTech University, China*

Debate panelists : Alison Noble, *University of Oxford, United Kingdom*
Julia Schnabel, *TU Munich, Germany*
Ronald Summers, *National Institutes of Health, United States*
Xiang Sean Zhou, *Shanghai United Imaging Intelligence, China*

RISE-MICCAI

RISE-MICCAI

RISE Lunch EVENT

Lunch Program (September 19, 12:30 – 13:30 SGT)

12:30 - 12:40

Why RISE?

12:40 - 13:15

Keynote "Building intelligence into existing systems: the *Zambian cervical cancer prevention experience*" by Prof [Groesbeck Parham](#)

13:15 - 13:25

Q&A session

13:25 - 13:30

Closing remarks



[Prof Groesbeck Parham](#) has devoted his professional life to improving the lives of the world's poor through efforts to reduce inequalities in health care by increasing opportunities for training, access to service, and through implementation research. He is professor of gynecologic oncology at the University of North Carolina, Chapel Hill. Dr. Parham founded the Cervical Cancer Prevention Program in Zambia, where he has lived since 2005. As a leader in combating women's cancers in resource-constrained global environments, he developed an innovative system for cervical cancer screening in which trained nurses use simple household vinegar and a digital camera. Adopted by

the *Zambian Ministry of Health* in 2015, the screening program has been scaled across the nation, accessed by over 1 million *Zambian women*, and recently leveraged to create a form of low-cost automated cervical cancer screening based on machine learning.

Room: Pisces 3

Attendance: Free

RISE NETWORKING EVENT

Networking Program (September 19, 19:00 – 20:00 SGT)

Stop by for networking, cocktail and snacks

Room: Pisces 3

Attendance: Free

WOMEN IN MICCAI (WIM) LUNCH EVENT

"Women in MICCAI (WiM) aims to strengthen and widen the representation of female scientists in the MICCAI community. We invite ****all genders**** to join us at this lunch event. We hope to bring people across all stages of their careers together to socialize, make connections, and meet with our panelists. Our event will feature a panel discussion on the topic of "Success & Challenging Stories, Constructive Advice for Female Scientists" by five panelists: Dr. Sharon Huang, Dr. Anqi Qiu, Dr. Sandrine De Ribaupierre, Dr. Orit Wimpfheimer, and Dr., Chen Sagiv."

Date / Time : September 21st, 12:30-13:30

Room : Virgo 1-2-3 room

Attendance : Free

MICCAI CAREER DEVELOPMENT

The MICCAI Society is committed to supporting career advancement and professional development for its members. We are excited to have again an extraordinary group of mentors who work with a diverse group of students and early career researchers to reach their career dreams. If you have not joined the MICCAI Society Mentorship Program in 2022, we hope you will try it in the future. Join us also at the MICCAI Society Startup Village where entrepreneurship resides at MICCAI 2022. **Cast your vote at the pitch competition on Monday, September 19th at 6pm SGT** for the best real-time technology and learn what it takes to build your own business.

MICCAI 2022 Mentors

Ulas Bagci
Kayhan Batmanghelich
Hrvoje Bogunovic
Ninon Burgos
Hao Chen
Jun Cheng
Li Cheng
Aasa Feragen
Zhifan Gao
Stamatia Giannarou
Sharon Huang
Anand Joshi
Bernhard Kainz
Baiying Lei
Karim Lekadir
Xiaoxiao Li
Jianming Liang
Marius George Linguraru
Anne Martel
Antonio Porras
Yang Song
Tanveer Syeda-Mahmood
Pallavi Tiwari
Mathias Unberath
Maria Vakalopoulou
Harini Veeraraghavan
Satish Viswanath
Guang Yang
Lequan Yu
Miaomiao Zhang
Rongchang Zhao

MICCAI Society Career Development Working Group

Chair: Marius George Linguraru
Antonio Porras
Nicola Rieke
Julia Schnabel
Kitty Wong
Tianjing Zhang
Faisal Beg
Renee Yao
Islem Rekik
Linwei Wang
Shuo Li
Marleen de Bruijne
Le Lu
Dong Ni

SOCIAL EVENTS

SOCIAL EVENTS

MICCAI 2022 Welcome Reception hosted by MICCAI Society

18 September 2022 / 19:00 – 20:00

Resorts World Sentosa Convention Center Central
– East Foyer



MICCAI 2022 – Gala Dinner

20 September 2022 / 18:00 – 23:00
@ River Wonders

FUN IN THE WILD WITH MICCAI 2022

MICCAI 2022 Gala Dinner will be hosted at River Wonders

Singapore is known for its diverse heritage and rich culture. To welcome MICCAI 2022 participants to the lion city, we will celebrate the treasures in Singapore by combining innovative yet familiar icons that bridge the old and the new. From futuristic LED robotic walkers to world class “Made in Singapore” entertainers, we will feature adult centric activities scattered around the park to entertain our delegates.



Not forgetting, Singapore is a nation that loves to eat, food is definitely the way to the soul. All participants will get to sample interesting snacks and drinks we proudly call US! Look on as we bring you WONDERS OF SINGAPORE @ RIVER WONDERS!

The buses will depart from Resort World Sentosa Convention Center Entrance which is located next to Hard Rock Sentosa Hotel. The buses will start to depart at 17:30.

Gala Dinner Schedule:

- 17:30** The buses will start to depart from Resort World Sentosa Convention Center to River Wonders
- 18:00** Arrive at Singapore Zoo.
Proceed to Shaw Amphitheatre for congregations.
Welcome Speeches
Jeremy Tan illusion & Mind reading show
Traditional Malay Kompang drums
- 19:00** All guests proceed to River Wonders for the Party!
Guests will be ushered in batches of 400 per group to depart with 10 mins interval between each group.
- 19:30** Commence of Party with food, drinks and activities. The group will be divided into 3 different groups and will be differentiated with different colored callors.
1st and 2nd groups will enter River Wonders the respective food stations for dinner
3rd group will stop at the entrance of Singapore Zoo for dinner.
- 20:00** Night Safari Tram Tour commence by batches of 3 timings from 8.30pm to 9.30pm with 30 minutes interval of dispatch (per tour about 40 mins)
All guests are allowed to re-enter River Wonders after touring Night Safari
- 23:00** Buses depart back to Resort World Sentosa Convention Center

CLINICCAI DETAILED PROGRAM

CLINICCAI DETAILED PROGRAM

Room : Virgo 1-2-3

8:00 - 8:15 OPENING

Oral Session 1: Radiology

- 8:15 - 8:30 Deep-learning-based Microbleeds Detection for Cerebral Small Vessel Disease on Quantitative Susceptibility Mapping
Peng Xia (The University of Hong Kong)
- 8:30 - 8:45 An automated approach for AI model validation on sub cohort analyses to assess for biases
Ray Funahashi (Gesund); Emre Yorgancigil (Gesund); Veysel Kocaman (Gesund); Enes Hosgor (Gesund); Brian Ayers (Gesund)
- 8:45 - 9:00 Risk Assessment After Myocardial Infarction Using Automated Left Ventricular Shape Analysis vs Myocardial Strains
Jorge Corral Acero (University of Oxford)*; Andreas Schuster (University Medical Centre Göttingen); Ingo Eitel (University Heart Centre Lübeck); Ernesto Zacur (University of Oxford); Ruben Evertz (University Medical Centre Göttingen); Torben Lange (University Medical Centre Göttingen); Sören Jan Backhaus (University Medical Centre Göttingen); Thomas Stiermaier (University Heart Centre Lübeck); Holger Thiele (Heart Centre Leipzig); Alfonso Bueno-Orovio (University of Oxford); Pablo Lamata (King's College of London); Vicente Grau (University of Oxford)
- 9:00 - 9:15 Multi-center Evaluation of Machine Learning Models for Predicting Neo-adjuvant Chemotherapy Response in Breast Cancer
Hong Qi Tan (NCCS)*; Ong Hiok Hian, Arjunan Muthu Kumaran, Tira J. Tan, Ryan Shea Tan Ying Cong, Ghislaine Lee Su-Xin, Elaine Lim Hsuen, Raymond Ng Chee Hui, Richard Yeo Ming Chert, Faye Lynette Lim Wei Tching, Zhang Zewen, Christina Yang Shi Hui, Wong Ru Xin, Gideon Ooi Su Kai, Lester Leong Chee Hao, Tan Su Ming, Madhukumar Preetha, Sim Yirong, Veronique Tan Kiak Mien, Joe Yeong, Wong Fuh Yong, Cai Yiyu, Wen Long Nei
- 9:15 - 9:30 Feature Translation Between Cone Beam and Fan Beam Computed Tomography Scans Using Cycle Consistent Generative Adversarial Networks
Zheng Yi Ho (Nanyang technological University)*; Hong Qi Tan (National Cancer Centre Singapore); Wen Long Nei (National Cancer Centre Singapore); Yiyu Cai (Nanyang Technological University)
- 9:30 - 9:45 SHORT BREAK

CLINICCAI DETAILED PROGRAM

Oral Session 2: Surgery

- 9:45 - 10:00 Multicentric Validation of a Laparoscopic Roux-en-Y Gastric Bypass Surgery Ontology
Joël L. Lavanchy (IHU Strasbourg); Cristians Gonzalez (IHU de Strasbourg); Hasan Kassem (iCube, University of Strasbourg, CNRS); Philipp Nett (Department of Visceral Surgery and Medicine, Inselspital Bern University Hospital); Nicolas Padoy (University of Strasbourg)*
- 10:00 - 10:15 Bringing Surgical Artificial Intelligence to End-Users: Development of a Platform for Live Intraoperative Inference
Amin Madani (University Health Network); Haochi Zhang (University Health Network); Pouria Mashouri (University Health Network); Jaryd Hunter (University Health Network); Sergey Protserov (University Health Network); Caterina Masino (University Health Network); Simon Laplante (University Health Network); Daniel Hashimoto (University of Pennsylvania); Pietro Mascagni (Fondazione Policlinico Universitario Agostino Gemelli IRCCS); Adnan Alseidi (University of California - San Francisco); Michael Brudno (University Health Network)*
- 10:15 - 10:30 Video assessment as a tool to analyze surgical technique: Catheter insertion during routine intra-operative cholangiogram in an academic setting
Monika E Hagen (University Hospital Geneva); Lela DIMONTE, Jonathan DOUISSARD, Alexis Litchinko, Sofia El Hajji, Mickael Chevallay, Florence Latinis, Varun Goel, Rami Abukhalil, Pablo Garcia, Christian TOSO*
- 10:30 - 10:45 Pulmonary Artery Detection in Thoracic Surgery Using Conditional Adversarial Networks
Arian Mansur (Harvard Medical School); Sandeep Manjanna (University of Pennsylvania); Rohan Verma (University of Pennsylvania); Christina Costantino (Massachusetts General Hospital); Chi-Fu Jeffrey Yang (Massachusetts General Hospital); Pratik Chaudhari (University of Pennsylvania); Lana Schumacher (Massachusetts General Hospital)*
- 10:45 - 11:00 Detecting Bias in Artificial Intelligence Models for Surgical Videos: Is the Model Predicting True Anatomy or Simply Following Surgical Instruments?
Amin Madani (University Health Network); Jaryd Hunter (University Health Network); Pouria Mashouri (University Health Network); Sergey Protserov (University Health Network); Haochi Zhang (University Health Network); Caterina Masino (University Health Network); Babak Namazi (UT Southwestern Medical Center); Michael Brudno (University Health Network)*
- 11:00 - 11:30 COFFEE BREAK

CLINICCAI DETAILED PROGRAM

11:30 - 12:30 MICCAI Keynote - Dinggang Shen

12:30 - 13:30 LUNCH BREAK

Oral Session 3: Miscellaneous

13:30 - 13:45 Digital Quantification of Surgical Expertise & Training Through Full-Body Kinematics and Time Series Clustering
Amr Nimer (Imperial College London)*; Abdullah Rehman (Imperial College London); Dipankar Nandi (Imperial College London); Aldo Faisal (Imperial College London)

13:45 - 14:00 Automated Anonymization of Robotic Surgical Video Data using Deep Learning
Pieter De Backer (Orsi Academy)*; Jente Simoons (Orsi Academy); Kenzo Mestdagh (Ghent University); Francesco Cisternino (University of Modena and Reggio Emilia); Federica Ferraguti (University of Modena and Reggio Emilia); Mathieu D'Hondt (AZ Groeninge); Hans Fuchs (Uniklinik Köln); Charlotte Debbaut (Ghent University); Karel Decaestecker (Ghent University Hospital); Alex Mottrie (Orsi Academy)

14:00 - 14:15 Towards automatic detection in pancreatic EUS: an assessment of Deep Learning methods
Julieta Montanelli (IHU Strasbourg)*; Antoine Fleurentin, Adrien Meyer, Jean-Paul Mazellier, Lee Swanstrom, Benoit Gallix, Georgios Exarchakis, Leonardo Sosa Valencia, Nicolas Paday

14:15 - 14:30 Abdominal organ segmentation in minimally-invasive surgery – presenting the Dresden Surgical Anatomy Dataset
Fiona Kolbinger (University Hospital Carl Gustav Carus, TU Dresden)*; Sebastian Bodenstedt, Franziska M. Rinner, Matthias Carstens, Stefan Leger, Alexander C. Jenke, Thomas P. Nielen, Jürgen Weitz, Marius Distler, Stefanie Speidel

14:30 - 15:00 COFFEE BREAK

15:00 - 16:00 CLINICCAI Keynote: Inti Zlobec - Tissue Medicine Goes Digital

CLINICCAI DETAILED PROGRAM

Oral Session 4: Pathology

- 16:00 - 16:15 Real-World Evaluation of a Semi-supervised Artificial-Intelligence Model Trained on 185,412 cells for Identification of White Blood Cells
Bingwen Eugene Fan (Tan Tock Seng Hospital, Singapore)*; David Tao Yi Chen (ASUS Global Pte Ltd); Shu-Yu Hsu (National Taiwan University); Hao-Hsiang Yang (National Taiwan University); Siti Thuraiya Binte Abdul Latiff (Khoo Teck Puat Hospital); Eric Kian Guan Lim (Tan Tock Seng Hospital); Yi Xiong Ong (Tan Tock Seng Hospital); Moh Sim Wong (Khoo Teck Puat Hospital); Stefan Winkler (ASUS Intelligent Cloud Services (AICS)); Ponnudurai Kuperan (Tan Tock Seng Hospital)
- 16:15 - 16:30 Determining the effect of AI Assistance when scoring ki-67 on sarcomas
Logaswari M (Singapore general Hospital)*; Sahil Saraf (Qritive); Li Yan Khor (Singapore general hospital); Aahan Singh (Qritive); Sathiyamoorthy Selavarajan (Singapore General Hospital); Kiat Hon Lim (Singapore General Hospital); Santhosh PV (RV Metropolis Lab); Vani Ravikumar (RV Metropolis Lab); Priyanka Somwanshi (Medirad diagnostics); Rajasa Jialdasani (Qritive); Kaveh Taghipour (Qritive); Aneesh Sathe (qritive)
- 16:30 - 16:45 AI-powered, biomarker-free activated T cells quantification at single-cell level: Proof-of-concept for cell therapy and diagnostic tool for T cells immunity
Chan Way Ng (Arrive Pte. Ltd.); Chun Jye Lim (A*STAR)*; Khong Ming Peh (Arrive Pte. Ltd.); Jia Meng (A*STAR); Denise Goh (A*STAR); Xinru Lim (A*STAR); Mai Chan Lau (IMCB); Andrew Brack (Arrive Pte. Ltd.); Joe Yeong (Singapore General Hospital)
- 16:45 - 17:00 Deep learning predicts somatic BRCA 1/2 genes mutational status from histopathology of epithelial ovarian cancer: a hypothesis generating study
Camilla Nero (Fondazione Policlinico Universitario Agostino Gemelli IRCCS); Luca Boldrini (Fondazione Policlinico Universitario Agostino Gemelli IRCCS); Jacopo Lenkowicz (Fondazione Policlinico Universitario Agostino Gemelli IRCCS); Maria Teresa Giudice (Fondazione Policlinico Universitario Agostino Gemelli IRCCS)*; Alessia Piermattei (Fondazione Policlinico Universitario Agostino Gemelli IRCCS); Gianfranco Zannoni (Fondazione Policlinico Universitario Agostino Gemelli IRCCS); Tina Pasciuto (Fondazione Policlinico Universitario Agostino Gemelli IRCCS); Angelo Minucci (Fondazione Policlinico Universitario Agostino Gemelli IRCCS); Anna Fagotti (Fondazione Policlinico Universitario Agostino Gemelli IRCCS); Gianfranco Zannoni (Fondazione Policlinico Universitario Agostino Gemelli IRCCS); Vincenzo Valentini (Fondazione Policlinico Universitario Agostino Gemelli IRCCS); Giovanni Scambia (Fondazione Policlinico Universitario Agostino Gemelli IRCCS)
- 17:00 - 17:15 Spatial analysis using morphology-transcriptome-defined cell phenotypes with machine learning

CLINICCAI DETAILED PROGRAM

Mai Chan Lau (IMCB)*; Wei Yan (Nanyang Technological University); HIEN NGU LUONG (Nanyang Technological University); ABU BAKR AZAM (Nanyang Technological University); Jeffrey Chun Tatt LIM (IMCB); Joe Yeong (Singapore General Hospital); Yiyu Cai (Nanyang Technological University)

- 17:15 - 17:30 AI-powered Tumor infiltrating lymphocytes scoring: is there a potential for cross-cancer type validation?
Felicia Wee (ASTAR IMCB)*; Nivedita Suresh (Arrive Bio); Jeffrey Lim (ASTAR IMCB); Chun Jye Lim (ASTAR IMCB); Xinru Lim (ASTAR IMCB); Mai Chan Lau (IMCB); Joe Yeong (Singapore General Hospital); Denise Goh (ASTAR IMCB); Khong Ming Peh (Arrive); Chan Way Ng (Arrive); Yong Qiang Zhu (Arrive); Andrew Brack (Arrive)
- 17:30 - 18:15 PANEL DISCUSSION
- 18:15 - 18:30 Award & Closing
- 19:00 - 23:00 GALA DINNER

ORAL PRESENTATION PROGRAM

ORAL PRESENTATION PROGRAM

Oral 1: Computer Aided Diagnosis Sept 19, 2022 (Monday), 9:00 - 10:30

Session Chairs: *Ester Bonmati, University College London, United Kingdom*
Mads Nielsen, University of Copenhagen, Denmark

- 9:00 - 9:15 Detecting Aortic Valve Pathology from the 3-Chamber Cine Cardiac MRI View**
Kavitha Vimalasvaran, Fatmatülzehra Uslu, Sameer Zaman, Christoforos Galazis, James Howard, Graham Cole, Anil A Bharath
Speaker: Kavitha Vimalasvaran, Imperial College London, United Kingdom
- 9:15 - 9:30 Intervention & Interaction Federated Abnormality Detection with Noisy Clients**
Xinyu Liu, Wuyang Li, Yixuan Yuan
Speaker: Xinyu Liu, City University of Hong Kong, Hong Kong SAR, China
- 9:30 - 9:45 Reinforcement Learning for Active Modality Selection during Diagnosis**
Gabriel Bernardino, Anders Jonsson, Filip Loncaric, Pablo-Miki Martí Castellote, Marta Sitges, Patrick Clarysse, Nicolas Duchateau
Speaker: Gabriel Bernardino, Universite Lyon 1, France
- 9:45 - 10:00 Intra-class Contrastive Learning Improves Computer Aided Diagnosis of Breast Cancer in Mammography**
Kihyun You, Suho Lee, Kyuhee Jo, Eunhyung Park, Thijs Kooi, Hyeonseob Nam
Speaker: Kihyun You, Lunit Inc., South Korea
- 10:00 - 10:15 Contrastive Learning for Echocardiographic View Integration**
Li-Hsin Cheng, Xiaowu Sun, Rob J. van der Geest
Speaker: Li-Hsin Cheng, Leiden University Medical Center, the Netherlands
- 10:15 - 10:30 FairPrune: Achieving Fairness Through Pruning for Dermatological Disease Diagnosis**
Yawen Wu, Dewen Zeng, Xiaowei Xu, Yiyu Shi, Jingtong Hu
Speaker: Yawen Wu, University of Pittsburgh, United States

ORAL PRESENTATION PROGRAM

Oral 2: Interpretability/Uncertainty Sept 19, 2022 (Monday), 13:30 - 14:30

*Session Chairs: Aasa Feragen, Technical University of Denmark, Denmark
Pingkun Yan, Rensselaer Polytechnic Institute, United States*

- 13:30 - 13:45 **Interpretable Graph Neural Networks for Connectome-Based Brain Disorder Analysis**
Hejie Cui, Wei Dai, Yanqiao Zhu, Xiaoxiao Li, Lifang He, Carl Yang
Speaker: Hejie Cui, Emory University, USA
- 13:45 - 14:00 **What Can We Learn About a Generated Image Corrupting Its Latent Representation?**
Agnieszka Tomczak, Aarushi Gupta, Slobodan Ilic, Nassir Navab, Shadi Albarqouni
Speaker: Agnieszka Tomczak, Technical University of Munich, Germany
- 14:00 - 14:15 **Dual-graph Learning Convolutional Networks for Interpretable Alzheimer's Disease Diagnosis**
Tingsong Xiao, Lu Zeng, Xiaoshuang Shi, Xiaofeng Zhu, Guorong Wu
Speaker: Tingsong Xiao, University of Electronic Science and Technology of China, China
- 14:15 - 14:30 **Accurate and Explainable Image-based Prediction Using a Lightweight Generative Model**
Chiara Mauri, Stefano Cerri, Oula Puonti, Mark Mührlau, Koen Van Leemput
Speaker: Chiara Mauri, Technical University of Denmark, Denmark

ORAL PRESENTATION PROGRAM

Oral 3: Surgical Data Science Sept 19, 2022 (Monday), 15:30 - 17:00

Session Chairs: Sophia Bano, University College London, United Kingdom

Alberto Gomez, King's College London and Ultromics Ltd., United Kingdom

- 15:30 - 15:45 **Bayesian Dense Inverse Searching Algorithm For Real-Time Stereo Matching in Minimally Invasive Surgery**
Jingwei Song, Qiuchen Zhu, Jianyu Lin, Maani Ghaffari
Speaker: Jingwei Song, University of Michigan, United States
- 15:45 - 16:00 **Neural Rendering for Stereo 3D Reconstruction of Deformable Tissues in Robotic Surgery**
Yuehao Wang, Yonghao Long, Siu Hin Fan, Qi Dou
Speaker: Yuehao Wang, The Chinese University of Hong Kong, Hong Kong SAR, China
- 16:00 - 16:15 **Towards Holistic Surgical Scene Understanding**
Natalia Valderrama, Paola Ruiz Puentes, Isabela Hernández, Nicolás Ayobi, Mathilde Verlyck, Jessica Santander, Juan Caicedo, Nicolás Fernández, Pablo Arbeláez
Speaker: Natalia Valderrama, Universidad de los Andes, Colombia
- 16:15 - 16:30 **4D-OR: Semantic Scene Graphs for OR Domain Modeling**
Ege Özsoy, Evin Pinar Örnek, Ulrich Eck, Tobias Czempel, Federico Tombari, Nassir Navab
Speaker: Ege Özsoy, Technical University of Munich, Germany
- 16:30 - 16:45 **Video-based Surgical Skills Assessment using Long term Tool Tracking**
Mona Fathollahi, Mohammad Hasan Sarhan, Ramon Pena, Lela DiMonte, Anshu Gupta, Aishani Ataliwala, Jocelyn Barker
Speaker: Mohammad Hasan Sarhan, Johnson & Johnson Medical Ltd., Germany

ORAL PRESENTATION PROGRAM

Oral 4: Image Reconstruction & Registration Sept 20, 2022 (Tuesday), 9:00 - 10:30

Session Chairs: *Mattias Heinrich, University of Lübeck, Germany*
Tanveer Syeda-Mahmood, IBM Research, United States

- 9:00 - 9:15 **SVORT: Iterative Transformer for Slice-to-Volume Registration in Fetal Brain MRI**
Junshen Xu, Daniel Moyer, P. Ellen Grant, Polina Golland, Juan Eugenio Iglesias, Elfar Adalsteinsson
Speaker: Junshen Xu, Massachusetts Institute of Technology, United States
- 9:15 - 9:30 **NAF: Neural Attenuation Fields for Sparse-View CBCT Reconstruction**
Ruyi Zha, Yanhao Zhang, Hongdong Li
Speaker: Ruyi Zha, Australian National University, Australia
- 9:30 - 9:45 **Deep Motion Network for Freehand 3D Ultrasound Reconstruction**
Mingyuan Luo, Xin Yang, Hongzhang Wang, Liwei Du, Dong Ni
Speaker: Mingyuan Luo, Shenzhen University, China
- 9:45 - 10:00 **Towards Performant and Reliable Undersampled MR Reconstruction Via Diffusion Model Sampling**
Cheng Peng, Pengfei Guo, S. Kevin Zhou, Vishal M Patel, Rama Chellappa
Speaker: Cheng Peng, Johns Hopkins University, United States
- 10:00 - 10:15 **BMD-GAN: Bone Mineral Density Estimation Using X-Ray Image Decomposition Into Projections Of Bone-Segmented Quantitative Computed Tomography Using Hierarchical Learning**
Yi Gu, Yoshito Otake, Keisuke Uemura, Mazen Soufi, Masaki Takao, Nobuhiko Sugano, Yoshinobu Sato
Speaker: Yi Gu, Nara Institute of Science and Technology, Japan
- 10:15 - 10:30 **Fast Spherical Mapping of Cortical Surface Meshes using Deep Unsupervised Learning**
Fenqiang Zhao, Zhengwang Wu, Li Wang, Weili Lin, Gang Li
Speaker: Fenqiang Zhao, University of North Carolina at Chapel Hill, United States

ORAL PRESENTATION PROGRAM

Oral 5: Microscopy Image Analysis Sept 20, 2022 (Tuesday), 13:30 - 14:30

Session Chairs: *Yuankai Huo, Vanderbilt University, United States*
Anne Martel, Sunnybrook Research Institute, Canada

- 13:30 - 13:45 **Implicit Neural Representations for Generative Modeling of Living Cell Shapes**
David Wiesner, Julian Suk, Sven Dummer, David Svoboda, Jelmer M. Wolterink
Speaker: David Wiesner, Masaryk University, Czechia
- 13:45 - 14:00 **Gigapixel Whole-Slide Images Classification Using Locally Supervised Learning**
Jingwei Zhang, Xin Zhang, Ke Ma, Rajarsi Gupta, Joel Saltz, Maria Vakalopoulou, Dimitris Samaras
Speaker: Xin Zhang, National University of Singapore, Singapore
- 14:00 - 14:15 **Discrepancy and Gradient-guided Multi-Modal Knowledge Distillation for Pathological Glioma Grading**
Xiaohan Xing, Zhen Chen, Meilu Zhu, Yuenan Hou, Zhifan Gao, Yixuan Yuan
Speaker: Xiaohan Xing, City University of Hong Kong, Hong Kong SAR, China
- 14:15 - 14:30 **Super-Focus: Domain Adaptation for Embryo Imaging via Self-Supervised Focal Plane Regression**
Chloe He, Céline Jacques, Jérôme Chambost, Jonas Malmsten, Koen Wouters, Thomas Fréour, Nikica Zaninovic, Cristina Hickman, Francisco Vasconcelos
Speaker: Chloe He, University College London, United Kingdom

ORAL PRESENTATION PROGRAM

Oral 6: Image Segmentation Sept 20, 2022 (Tuesday), 15:30 - 17:00

Session Chairs: *Herve Lombaert, ETS Montreal, Canada*
Maria A. Zuluaga, EURECOM, France

- 15:30 - 15:45** **CACTUSS: Common Anatomical CT-US Space for US examinations**
Yordanka Velikova, Walter Simson, Mehrdad Salehi, Mohammad Farid Azampour, Philipp Paprottka, Nassir Navab
Speaker: Yordanka Velikova, Technical University of Munich, Germany
- 15:45 - 16:00** **Transformer Based Feature Fusion for Left Ventricle Segmentation In 4D Flow MRI**
Xiaowu Sun, Li-Hsin Cheng, Sven Plein, Pankaj Garg, Rob J. van der Geest
Speaker: Xiaowu Sun, Leiden University Medical Center, The Netherlands
- 16:00 - 16:15** **Self-learning and One-shot Learning based Single-slice Annotation for 3D Medical Image Segmentation**
Yixuan Wu, Bo Zheng, Jintai Chen, Danny Z. Chen, Jian Wu
Speaker: Yixuan Wu, Zhejiang University, China
- 16:15 - 16:30** **DOMINO: Domain-aware Model Calibration in Medical Image Segmentation**
Skylar E. Stolte, Kyle Volle, Aprinda Indahlastari, Alejandro Albizu, Adam J. Woods, Kevin Brink, Matthew Hale, Ruogu Fang
Speaker: Skylar E. Stolte, University of Florida, USA
- 16:30 - 16:45** **Carbon Footprint of Selecting and Training Deep Learning Models for Medical Image Analysis**
Raghavendra Selvan, Nikhil Bhagwat, Lasse F. Wolff Anthony, Benjamin Kanding, Erik B. Dam
Speaker: Raghavendra Selvan, University of Copenhagen, Denmark
- 16:45 - 17:00** **Physiology-based simulation of the retinal vasculature enables annotation-free segmentation of OCT angiographs**
Martin J. Menten, Johannes C. Paetzold, Alina Dima, Bjoern H. Menze, Benjamin Knier, Daniel Rueckert
Speaker: Martin J. Menten, Technical University of Munich and Klinikum Rechts der Isar, Germany

ORAL PRESENTATION PROGRAM

Oral 7: Surgical Planning & Simulation Sept 21, 2022 (Wednesday), 8:30 - 9:30

*Session Chairs: Sandy Engelhardt, University Hospital Heidelberg, Germany
Stamatia Giannarou, Imperial College London, United Kingdom*

- 8:30 - 8:45 Deep Learning-based Facial Appearance Simulation Driven by Surgically Planned Craniomaxillofacial Bony Movement**
Xi Fang, Daeseung Kim, Xuanang Xu, Tianshu Kuang, Hannah H. Deng, Joshua C. Barber, Nathan Lampen, Jaime Gateno, Michael A.K. Liebschner, James J. Xia, Pingkun Yan
Speaker: Xi Fang, Rensselaer Polytechnic Institute, United States
- 8:45 - 9:00 Ideal Midsagittal Plane Detection using Deep Hough Plane Network for Brain Surgical Planning**
Chenchen Qin, Wenxue Zhou, Jianbo Chang, Yihao Chen, Dasheng Wu, Yixun Liu, Ming Feng, Renzhi Wang, Wenming Yang, Jianhua Yao
Speaker: Wenxue Zhou, Tencent AI Lab, China
- 9:00 - 9:15 SLAM-TKA: Real-time Intra-operative Measurement of Tibial Resection Plane in Conventional Total Knee Arthroplasty**
Shuai Zhang, Liang Zhao, Shoudong Huang, Hua Wang, Qi Luo, Qi Hao
Speaker: Shuai Zhang, University of Technology Sydney, Australia
- 9:15 - 9:30 Deep Geometric Supervision Improves Spatial Generalization in Orthopedic Surgery Planning**
Florian Kordon, Andreas Maier, Benedict Swartman, Maxim Privalov, Jan S. El Barbari, Holger Kunze
Speaker: Florian Kordon, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

ORAL PRESENTATION PROGRAM

Oral 8: Integration Beyond Imaging Sept 21, 2022 (Wednesday), 13:30 - 15:00

Session Chairs: *Kayhan Batmanghelich, University of Pittsburgh, United States*
Ruogu Fang, University of Florida, United States

- 13:30 - 13:45** **Tagged-MRI Sequence to Audio Synthesis via Self Residual Attention Guided Heterogeneous Translator**
Xiaofeng Liu, Fangxu Xing, Jerry L. Prince, Jiachen Zhuo, Maureen Stone, Georges El Fakhri, Jonghye Woo
Speaker: Xiaofeng Liu, MGH and Harvard, United States
- 13:45 - 14:00** **TranSQ: Transformer-based Semantic Query for Medical Report Generation**
Ming Kong, Zhengxing Huang, Kun Kuang, Qiang Zhu, Fei Wu
Speaker: Ming Kong, Zhejiang University, China
- 14:00 - 14:15** **Multimodal-GuideNet: Gaze-Probe Bidirectional Guidance in Obstetric Ultrasound Scanning**
Qianhui Men, Clare Teng, Lior Drukker, Aris T. Papageorgiou, J. Alison Noble
Speaker: Qianhui Men, University of Oxford, United Kingdom
- 14:15 - 14:30** **Fusing Modalities by Multiplexed Graph Neural Networks for Outcome Prediction in Tuberculosis**
Niharika S. D'Souza, Hongzhi Wang, Andrea Giovannini, Antonio Foncubierta-Rodriguez, Kristen Beck, Orest Boyko, Tanveer Syeda-Mahmood
Speaker: Tanveer Syeda-Mahmood, IBM Research, United States
- 14:30 - 14:45** **Identify Consistent Imaging Genomic Biomarkers for Characterizing the Survival-associated Interactions between Tumor-infiltrating Lymphocytes and Tumors**
Yingli Zuo, Yawen Wu, Zixiao Lu, Qi Zhu, Kun Huang, Daoqiang Zhang, Wei Shao
Speaker: Yingli Zuo, Nanjing University of Aeronautics and Astronautics, China
- 14:45 - 15:00** **Extended Electrophysiological Source Imaging with Spatial Graph Filters**
Feng Liu, Guihong Wan, Yevgeniy R. Semenov, Patrick L. Purdon
Speaker: Feng Liu, Stevens Institute of Technology, United States



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POSTER PRESENTATION PROGRAM

POSTER PRESENTATION PROGRAM

Poster 1: Computer Aided Diagnosis I (In Person) Sept 19, 2022 (Monday), 10:30 - 11:30

Session Chairs: *Ulas Bagci, Northwestern University, United States*
Harini Veeraraghavan, Memorial Sloan Kettering Cancer Center, United States

- M1** **A Penalty Approach for Normalizing Feature Distributions to Build Confounder-Free Models**
Anthony Vento, Qingyu Zhao, Robert Paul, Kilian M. Pohl, Ehsan Adeli
- M2** **Automatic Detection of Steatosis in Ultrasound Images with Comparative Visual Labeling**
Günther Saibro, Michele Diana, Benoît Sauer, Jacques Marescaux, Alexandre Hostettler, Toby Collins
- M3** **Automation of clinical measurements on radiographs of children's hips**
Peter Thompson, Medical Annotation Collaborative, Daniel C. Perry, Timothy F. Coates, Claudia Lindner
- M4** **Building Brains: Subvolume Recombination for Data Augmentation in Large Vessel Occlusion Detection**
Florian Thamm, Oliver Taubmann, Markus Jürgens, Aleksandra Thamm, Felix Denzinger, Leonhard Rist, Hendrik Ditt, Andreas Maier
- M5** **Camera Adaptation for Fundus-Image-Based CVD Risk Estimation**
Zhihong Lin, Danli Shi, Donghao Zhang, Xianwen Shang, Mingguang He, Zongyuan Ge
- M6** **Combining mixed-format labels for AI-based pathology detection pipeline in a large-scale knee MRI study**
Micha Kornreich, JinHyeong Park, Joschka Braun, Jayashri Pawar, James Browning, Richard Herzog, Benjamin Odry, Li Zhang
- M7** **Context-Aware Transformers For Spinal Cancer Detection and Radiological Grading**
Rhydian Windsor, Amir Jamaludin, Timor Kadir, Andrew Zisserman
- M8** **CS2: A Controllable and Simultaneous Synthesizer of Images and Annotations with Minimal Human Intervention**
Xiaodan Xing, Jiahao Huang, Yang Nan, Yinze Wu, Chengjia Wang, Zhifan Gao, Simon Walsh, Guang Yang
- M9** **Deep Learning based Modality-Independent Intracranial Aneurysm Detection**
Žiga Bizjak, June Ho Choi, Wonhyoung Park, Žiga Špiclin

POSTER PRESENTATION PROGRAM

- M10 **Deep Reinforcement Learning for Detection of Inner Ear Abnormal Anatomy in Computed Tomography**
Paula López Díez, Kristine Sørensen, Josefine Vilsbøll Sundgaard, Khassan Diab, Jan Margeta, François Patou, Rasmus Paulsen
- M11 **Did You Get What You Paid For? Rethinking Annotation Cost of Deep Learning Based Computer Aided Detection in Chest Radiographs**
Tae Soo Kim, Geonwoon Jang, Sanghyup Lee, Thijs Kooi
- M12 **Disentangle then Calibrate: Selective Treasure Sharing for Generalized Rare Disease Diagnosis**
Yuanyuan Chen, Xiaoqing Guo, Yong Xia, Yixuan Yuan
- M13 **DRGen: Domain Generalization in Diabetic Retinopathy Classification**
Mohammad Atwany, Mohammad Yaqub
- M14 **Dual-Distribution Discrepancy for Anomaly Detection in Chest X-Rays**
Yu Cai, Hao Chen, Xin Yang, Yu Zhou, Kwang-Ting Cheng
- M15 **Federated Medical Image Analysis with Virtual Sample Synthesis**
Wei Zhu, Jiebo Luo
- M16 **Flat-aware Cross-stage Distilled Framework for Imbalanced Medical Image Classification**
Jinpeng Li, Guangyong Chen, Hangyu Mao, Danruo Deng, Dong Li, Jianye Hao, Qi Dou, Pheng-Ann Heng
- M17 **GazeRadar: A Gaze and Radiomics-guided Disease Localization Framework**
Moinak Bhattacharya, Shubham Jain, Prateek Prasanna
- M18 **Hybrid Spatio-Temporal Transformer Network for Predicting Ischemic Stroke Lesion Outcomes from 4D CT Perfusion Imaging**
Kimberly Amador, Anthony Winder, Jens Fiehler, Matthias Wilms, Nils D. Forkert
- M19 **INSightR-Net: Interpretable Neural Network for Regression using Similarity-based Comparisons to Prototypical Examples**
Linde S. Hesse, Ana I. L. Namburete
- M20 **Intervention & Interaction Federated Abnormality Detection with Noisy Clients**
Xinyu Liu, Wuyang Li, Yixuan Yuan

POSTER PRESENTATION PROGRAM

- M21 Intra-class Contrastive Learning Improves Computer Aided Diagnosis of Breast Cancer in Mammography**
Kihyun You, Suho Lee, Kyuhee Jo, Eunkyung Park, Thijs Kooi, Hyeonseob Nam
- M22 Knowledge Distillation to Ensemble Global and Interpretable Prototype-based Mammogram Classification Models**
Chong Wang, Yuanhong Chen, Yuyuan Liu, Yu Tian, Fengbei Liu, Davis J. McCarthy, Michael Elliott, Helen Frazer, Gustavo Carneiro
- M23 Learning Robust Representation for Joint Grading of Ophthalmic Diseases via Adaptive Curriculum and Feature Disentanglement**
Haoxuan Che, Haibo Jin, Hao Chen
- M24 LIDP: A Lung Image Dataset with Pathological Information for Lung Cancer Screening**
Yanbo Shao, Minghao Wang, Juanyun Mai, Xinliang Fu, Mei Li, Jiayin Zheng, Zhaoqi Diao, Airu Yin, Yulong Chen, Jianyu Xiao, Jian You, Yang Yang, Xiangcheng Qiu, Jinsheng Tao, Bo Wang, Hua Ji
- M25 Morphology-Aware Interactive Keypoint Estimation**
Jinhee Kim, Taesung Kim, Taewoo Kim, Jaegul Choo, Dong-Wook Kim, Byungduk Ahn, In-Seok Song, Yoon-Ji Kim
- M26 Multi-institutional Investigation of Model Generalizability for Virtual Contrast-enhanced MRI Synthesis**
Wen Li, Saikit Lam, Tian Li, Andy Lai-Yin Cheung, Haonan Xiao, Chenyang Liu, Jiang Zhang, Xinzhi Teng, Shaohua Zhi, Ge Ren, Francis Kar-ho Lee, Kwok-hung Au, Victor Ho-fun Lee, Amy Tien Yee Chang, Jing Cai
- M27 Multi-Modal Hypergraph Diffusion Network with Dual Prior for Alzheimer Classification**
Angelica I. Aviles-Rivero, Christina Runkel, Nicolas Papadakis, Zoe Kourtzi, Carola-Bibiane Schönlieb
- M28 Multi-view Local Co-occurrence and Global Consistency Learning Improve Mammogram Classification Generalisation**
Yuanhong Chen, Hu Wang, Chong Wang, Yu Tian, Fengbei Liu, Yuyuan Liu, Michael Elliott, Davis J. McCarthy, Helen Frazer, Gustavo Carneiro
- M29 NVUM: Non-Volatile Unbiased Memory for Robust Medical Image Classification**
Fengbei Liu, Yuanhong Chen, Yu Tian, Yuyuan Liu, Chong Wang, Vasileios Belagiannis, Gustavo Carneiro

POSTER PRESENTATION PROGRAM

- M30 Opinions Vary? Diagnosis First!**
Junde Wu, Huihui Fang, Dalu Yang, Zhaowei Wang, Wenshuo Zhou, Fangxin Shang, Yehui Yang, Yanwu Xu
- M31 PD-DWI: Predicting response to neoadjuvant chemotherapy in invasive breast cancer with Physiologically-Decomposed Diffusion-Weighted MRI machine-learning model**
Maya Gilad, Moti Freiman
- M32 Progression models for imaging data with Longitudinal Variational Auto Encoders**
Benoît Sauty, Stanley Durrleman
- M33 Prototype Learning of Inter-network Connectivity for ASD Diagnosis and Personalized Analysis**
Eunsong Kang, Dawoon Heo, Heung-Il Suk
- M34 Reducing Positional Variance in Cross-sectional Abdominal CT Slices with Deep Conditional Generative Models**
Xin Yu, Qi Yang, Yucheng Tang, Riqiang Gao, Shunxing Bao, Leon Y. Cai, Ho Hin Lee, Yuankai Huo, Ann Zenobia Moore, Luigi Ferrucci, Bennett A. Landman
- M35 Residual Wavelon Convolutional Networks for Characterization of Disease Response on MRI**
Amir Reza Sadri, Thomas DeSilvio, Prathyush Chirra, Sneha Singh, Satish E. Viswanath
- M36 Self-Ensembling Vision Transformer (SEViT) for Robust Medical Image Classification**
Faris Almalik, Mohammad Yaqub, Karthik Nandakumar
- M37 Show, Attend and Detect: Towards Fine-grained Assessment of Abdominal Aortic Calcification on Vertebral Fracture Assessment Scans**
Syed Zulfarnain Gilani, Naeha Sharif, David Suter, John T. Schousboe, Siobhan Reid, William D. Leslie, Joshua R. Lewis
- M38 Skin Lesion Recognition with Class-Hierarchy Regularized Hyperbolic Embeddings**
Zhen Yu, Toan Nguyen, Yaniv Gal, Lie Ju, Shekhar S. Chandra, Lei Zhang, Paul Bonnington, Victoria Mar, Zhiyong Wang, Zongyuan Ge

POSTER PRESENTATION PROGRAM

- M39 **SUPER-IVIM-DC: Intra-voxel incoherent motion based Fetal lung maturity assessment from limited DWI data using supervised learning coupled with data-consistency**
Noam Korngut, Elad Rotman, Onur Afacan, Sila Kurugol, Yael Zaffrani-Reznikov, Shira Nemirovsky-Rotman, Simon Warfield, Moti Freiman
- M40 **Supervised Contrastive Learning to Classify Paranasal Anomalies in the Maxillary Sinus**
Debayan Bhattacharya, Benjamin Tobias Becker, Finn Behrendt, Marcel Bengs, Dirk Beyersdorff, Dennis Eggert, Elina Petersen, Florian Jansen, Marvin Petersen, Bastian Cheng, Christian Betz, Alexander Schlaefler, Anna Sophie Hoffmann
- M41 **TINC: Temporally Informed Non-Contrastive Learning for Disease Progression Modeling in Retinal OCT Volumes**
Taha Emre, Arunava Chakravarty, Antoine Rivail, Sophie Riedl, Ursula Schmidt-Erfurth, Hrvoje Bogunović
- M42 **Unsupervised Cross-Domain Feature Extraction for Single Blood Cell Image Classification**
Raheleh Salehi, Ario Sadafi, Armin Gruber, Peter Lienemann, Nassir Navab, Shadi Albarqouni, Carsten Marr
- M43 **Visual explanations for the detection of diabetic retinopathy from retinal fundus images**
Valentyn Boreiko, Indu Ilanchezian, Murat Seçkin Ayhan, Sarah Müller, Lisa M. Koch, Hanna Faber, Philipp Berens, Matthias Hein

POSTER PRESENTATION PROGRAM

Poster 1: Computer Aided Diagnosis I (Virtual) Sept 19, 2022 (Monday), 10:30 - 11:30

Session Chairs: *Ulas Bagci, Northwestern University, United States*
Harini Veeraraghavan, Memorial Sloan Kettering Cancer Center, United States

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| MV-1-PC01 | A Medical Semantic-Assisted Transformer for Radiographic Report Generation
<i>Zhanyu Wang, Mingkang Tang, Lei Wang, Xiu Li, Luping Zhou</i> |
| MV-1-PC02 | A New Dataset and A Baseline Model for Breast Lesion Detection in Ultrasound Videos
<i>Zhi Lin, Junhao Lin, Lei Zhu, Huazhu Fu, Jing Qin, Liansheng Wang</i> |
| MV-1-PC03 | A Novel Deep Learning System for Breast Lesion Risk Stratification in Ultrasound Images
<i>Ting Liu, Xing An, Yanbo Liu, Yuxi Liu, Bin Lin, Runzhou Jiang, Wenlong Xu, Longfei Cong, Lei Zhu</i> |
| MV-1-PC04 | CephalFormer: Incorporating Global Structure Constraint into Visual Features for General Cephalometric Landmark Detection
<i>Yankai Jiang, Yiming Li, Xinyue Wang, Yubo Tao, Jun Lin, Hai Lin</i> |
| MV-1-PC05 | Coronary R-CNN: Vessel-wise Method for Coronary Artery Lesion Detection and Analysis in Coronary CT Angiography
<i>Yu Zhang, Jun Ma, Jing Li</i> |
| MV-1-PC06 | Deep is a Luxury We Don't Have
<i>Ahmed Taha, Yen Nhi Truong Vu, Brent Mombourquette, Thomas Paul Matthews, Jason Su, Sadanand Singh</i> |
| MV-1-PC07 | Deep learning-based Head and Neck Radiotherapy Planning Dose Prediction via Beam-wise Dose Decomposition
<i>Bin Wang, Lin Teng, Lanzhuji Mei, Zhiming Cui, Xuanang Xu, Qianjin Feng, Dinggang Shen</i> |
| MV-1-PC08 | Deep treatment response assessment and prediction of colorectal cancer liver metastases
<i>Mohammad Mohaiminul Islam, Bogdan Badic, Thomas Aparicio, David Tougeron, Jean-Pierre Tasu, Dimitris Visvikis, Pierre-Henri Conze</i> |

POSTER PRESENTATION PROGRAM

- MV-1-PC09 DeepCRC: Colorectum and Colorectal Cancer Segmentation in CT Scans via Deep Colorectal Coordinate Transform**
Lisha Yao, Yingda Xia, Haochen Zhang, Jiawen Yao, Dakai Jin, Bingjiang Qiu, Yuan Zhang, Yanting Liang, Suyun Li, Xian-Sheng Hua, Le Lu, Xin Chen, Zaiyi Liu, Ling Zhang
- MV-1-PC10 Denoising of 3D MR images using a voxel-wise hybrid residual MLP-CNN model to improve small lesion diagnostic confidence**
Haibo Yang, Shengjie Zhang, Xiaoyang Han, Botao Zhao, Yan Ren, Yaru Sheng, Xiao-Yong Zhang
- MV-1-PC11 Effective Opportunistic Esophageal Cancer Screening using Noncontrast CT Imaging**
Jiawen Yao, Xianghua Ye, Yingda Xia, Jian Zhou, Yu Shi, Ke Yan, Fang Wang, Lili Lin, Haogang Yu, Xian-Sheng Hua, Le Lu, Dakai Jin, Ling Zhang
- MV-1-PC12 End-to-End Evidential-Efficient Net for Radiomics Analysis of Brain MRI to Predict Oncogene Expression and Overall Survival**
Yingjie Feng, Jun Wang, Dongsheng An, Xianfeng Gu, Xiaoyin Xu, Min Zhang
- MV-1-PC13 Explainable Contrastive Multiview Graph Representation of Brain, Mind, and Behavior**
Chongyue Zhao, Liang Zhan, Paul M. Thompson, Heng Huang
- MV-1-PC14 Flexible Sampling for Long-tailed Skin Lesion Classification**
Lie Ju, Yicheng Wu, Lin Wang, Zhen Yu, Xin Zhao, Xin Wang, Paul Bonnington, Zongyuan Ge
- MV-1-PC15 Joint Prediction of Meningioma Grade and Brain Invasion via Task-Aware Contrastive Learning**
Tianling Liu, Wennan Liu, Lequan Yu, Liang Wan, Tong Han, Lei Zhu
- MV-1-PC16 Local Graph Fusion of Multi-View MR Images for Knee Osteoarthritis Diagnosis**
Zixu Zhuang, Sheng Wang, Liping Si, Kai Xuan, Zhong Xue, Dinggang Shen, Lichi Zhang, Weiwu Yao, Qian Wang
- MV-1-PC17 MAL: Multi-modal attention learning for tumor diagnosis based on bipartite graph and multiple branches**
Menglei Jiao, Hong Liu, Jianfang Liu, Hanqiang Ouyang, Xiangdong Wang, Liang Jiang, Huishu Yuan, Yueliang Qian

POSTER PRESENTATION PROGRAM

- MV-1-PC18** **Moving from 2D to 3D: volumetric medical image classification for rectal cancer staging**
Joohyung Lee, Jieun Oh, Inkyu Shin, You-sung Kim, Dae Kyung Sohn, Tae-sung Kim, In So Kweon
- MV-1-PC19** **muleEG: A Multi-View Representation Learning on EEG Signals**
Vamsi Kumar, Likith Reddy, Shivam Kumar Sharma, Kamalaker Dadi, Chiranjeevi Yarra, Raju S. Bapi, Srijithesh Rajendran
- MV-1-PC20** **Multidimensional Hypergraph on Delineated Retinal Features for Pathological Myopia Task.**
Bilha Githinji, Lei Shao, Lin An, Hao Zhang, Fang Li, Li Dong, Lan Ma, Yuhan Dong, Yongbing Zhang, Wen B. Wei, Peiwu Qin
- MV-1-PC21** **Optimal Transport based Ordinal Pattern Tree Kernel for Brain Disease Diagnosis**
Kai Ma, Xuyun Wen, Qi Zhu, Daoqiang Zhang
- MV-1-PC22** **Personalized Diagnostic Tool for Thyroid Cancer Classification using Multi-view Ultrasound**
Han Huang, Yijie Dong, Xiaohong Jia, Jianqiao Zhou, Dong Ni, Jun Cheng, Ruobing Huang
- MV-1-PC23** **Point Beyond Class: A Benchmark for Weakly Semi-Supervised Abnormality Localization in Chest X-Rays**
Haoqin Ji, Haozhe Liu, Yuexiang Li, Jinheng Xie, Nanjun He, Yawen Huang, Dong Wei, Xinrong Chen, Linlin Shen, Yefeng Zheng
- MV-1-PC24** **Reinforcement Learning Driven Intra-modal and Inter-modal Representation Learning for 3D Medical Image Classification**
Zhonghang Zhu, Liansheng Wang, Baptiste Magnier, Lei Zhu, Defu Zhang, Lequan Yu
- MV-1-PC25** **RemixFormer: A Transformer Model for Precision Skin Tumor Differential Diagnosis via Multi-modal Imaging and Non-imaging Data**
Jing Xu, Yuan Gao, Wei Liu, Kai Huang, Shuang Zhao, Le Lu, Xiaosong Wang, Xian-Sheng Hua, Yu Wang, Xiang Chen
- MV-1-PC26** **SAPJNet: Sequence-Adaptive Prototype-Joint Network for Small Sample Multi-Sequence MRI Diagnosis**
Yuqiang Gao, Guanyu Yang, Xiaoming Qi, Yinsu Zhu, Shuo Li

POSTER PRESENTATION PROGRAM

- MV-1-PC27 Screening of Dementia on OCTA Images via Multi-projection Consistency and Complementarity**
Xingyue Wang, Heng Li, Zunjie Xiao, Huazhu Fu, Yitian Zhao, Richu Jin, Shuting Zhang, William Robert Kwapong, Ziyi Zhang, Hanpei Miao, Jiang Liu
- MV-1-PC28 Siamese Encoder-based Spatial-Temporal Mixer for Growth Trend Prediction of Lung Nodules on CT Scans**
Jiansheng Fang, Jingwen Wang, Anwei Li, Yuguang Yan, Yonghe Hou, Chao Song, Hongbo Liu, Jiang Liu
- MV-1-PC29 Spatiotemporal Attention for Early Prediction of Hepatocellular Carcinoma based on Longitudinal Ultrasound Images**
Yiwen Zhang, Chengguang Hu, Liming Zhong, Yangda Song, Jiarun Sun, Meng Li, Lin Dai, Yuanping Zhou, Wei Yang
- MV-1-PC30 Toward Clinically Assisted Colorectal Polyp Recognition via Structured Cross-modal Representation Consistency**
Weijie Ma, Ye Zhu, Ruimao Zhang, Jie Yang, Yiwen Hu, Zhen Li, Li Xiang
- MV-1-PC31 Transformer Based Multi-View Network for Mammographic Image Classification**
Zizhao Sun, Huiqin Jiang, Ling Ma, Zhan Yu, Hongwei Xu
- MV-1-PC32 ULTRA: Uncertainty-aware Label Distribution Learning for Breast Tumor Cellularity Assessment**
Xiangyu Li, Xinjie Liang, Gongning Luo, Wei Wang, Kuanquan Wang, Shuo Li
- MV-1-PC33 Vision-Language Contrastive Learning Approach to Robust Automatic Placenta Analysis Using Photographic Images**
Yimu Pan, Alison D. Gernand, Jeffery A. Goldstein, Leena Mithal, Delia Mwinyelle, James Z. Wang
- MV-1-PC34 Warm Start Active Learning with Proxy Labels & Selection via Semi-Supervised Fine-Tuning**
Vishwesh Nath, Dong Yang, Holger R. Roth, Daguang Xu

POSTER PRESENTATION PROGRAM

Poster 2: Computer Aided Diagnosis II (In Person) Sept 19, 2022 (Monday), 14:30 - 15:30

Session Chairs: *Bernhard Kainz, Imperial College London, United Kingdom*
Tanveer Syeda-Mahmood, IBM Research, United States

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| M44 | <p>A Comprehensive Study of Modern Architectures and Regularization Approaches on CheXpert5000</p> <p><i>Sontje Ihler, Felix Kuhnke, Svenja Spindeldreier</i></p> |
| M45 | <p>Accurate and Explainable Image-based Prediction Using a Lightweight Generative Model</p> <p><i>Chiara Mauri, Stefano Cerri, Oula Puonti, Mark Mühlau, Koen Van Leemput</i></p> |
| M46 | <p>An Accurate Unsupervised Liver Lesion Detection Method Using Pseudo-Lesions</p> <p><i>He Li, Yutaro Iwamoto, Xianhua Han, Lanfen Lin, Hongjie Hu, Yen-Wei Chen</i></p> |
| M47 | <p>Anatomy-Guided Weakly-Supervised Abnormality Localization in Chest X-rays</p> <p><i>Ke Yu, Shantanu Ghosh, Zhexiong Liu, Christopher Deible, Kayhan Batmanghelich</i></p> |
| M48 | <p>Anomaly-aware multiple instance learning for rare anemia disorder classification</p> <p><i>Salome Kazemina, Ario Sadafi, Asya Makhro, Anna Bogdanova, Shadi Albarqouni, Carsten Marr</i></p> |
| M49 | <p>Assessing the Performance of Automated Prediction and Ranking of Patient Age from Chest X-rays Against Clinicians</p> <p><i>Matthew MacPherson, Keerthini Muthuswamy, Ashik Amlani, Charles Hutchinson, Vicky Goh, Giovanni Montana</i></p> |
| M50 | <p>Automated Classification of General Movements in Infants Using Two-stream Spatiotemporal Fusion Network</p> <p><i>Yuki Hashimoto, Akira Furui, Koji Shimatani, Maura Casadio, Paolo Moretti, Pietro Morasso, Toshio Tsuji</i></p> |
| M51 | <p>BabyNet: Residual Transformer Module for Birth Weight Prediction on Fetal Ultrasound Video</p> <p><i>Szymon Płotka, Michał K. Grzeszczyk, Robert Brawura-Biskupski-Samaha, Paweł Gutaj, Michał Lipa, Tomasz Trzcíński, Arkadiusz Sitek</i></p> |

POSTER PRESENTATION PROGRAM

- M52** **BiometryNet: Landmark-based Fetal Biometry Estimation from Standard Ultrasound Planes**
Netanell Avidris, Leo Jaskowicz, Brian Dromey, Anna L. David, Donald M. Peebles, Danail Stoyanov, Dafna Ben Bashat, Sophia Bano
- M53** **Breaking with Fixed Set Pathology Recognition through Report-Guided Contrastive Training**
Constantin Seibold, Simon Reiß, M. Saquib Sarfraz, Rainer Stiefelhofen, Jens Kleesiek
- M54** **Cerebral Microbleeds Detection Using a 3D Feature Fused Region Proposal Network with Hard Sample Prototype Learning**
Jun-Ho Kim, Mohammed A. Al-masni, Seul Lee, Haejoon Lee, Dong-Hyun Kim
- M55** **CheXRelNet: An Anatomy-Aware Model for Tracking Longitudinal Relationships between Chest X-Rays**
Gaurang Karwande, Amarachi B. Mbakwe, Joy T. Wu, Leo A. Celi, Mehdi Moradi, Ismini Lourentzou
- M56** **Consistency-based Semi-supervised Evidential Active Learning for Diagnostic Radiograph Classification**
Shafa Balaram, Cuong M. Nguyen, Ashraf Kassim, Pavitra Krishnaswamy
- M57** **Contrastive Masked Transformers for Forecasting Renal Transplant Function**
Leo Milecki, Vicky Kalogeiton, Sylvain Bodard, Dany Anglicheau, Jean-Michel Correas, Marc-Olivier Timsit, Maria Vakalopoulou
- M58** **Detecting Aortic Valve Pathology from the 3-Chamber Cine Cardiac MRI View**
Kavitha Vimalasvaran, Fatmatülzehra Uslu, Sameer Zaman, Christoforos Galazis, James Howard, Graham Cole, Anil A Bharath
- M59** **Ensembled Prediction of Rheumatic Heart Disease from Ungated Doppler Echocardiography Acquired in Low-Resource Settings**
Pooneh Roshanitabrizi, Holger R. Roth, Alison Tompsett, Athelia Rosa Paulli, Kelsey Brown, Joselyn Rwebembera, Emmy Okello, Andrea Beaton, Craig Sable, Marius George Linguraru
- M60** **Evolutionary Multi-objective Architecture Search Framework: Application to COVID-19 3D CT Classification**
Xin He, Guohao Ying, Jiyong Zhang, Xiaowen Chu

POSTER PRESENTATION PROGRAM

- M61 Fusing Modalities by Multiplexed Graph Neural Networks for Outcome Prediction in Tuberculosis**
Niharika S. D'Souza, Hongzhi Wang, Andrea Giovannini, Antonio Foncubierta-Rodriguez, Kristen Beck, Orest Boyko, Tanveer Syeda-Mahmood
- M62 Identifying Phenotypic Concepts Discriminating Molecular Breast Cancer Sub-Types**
Christoph Fürböck, Matthias Perkonigg, Thomas Helbich, Katja Pinker, Valeria Romeo, Georg Langs
- M63 Interpretable differential diagnosis for Alzheimer's disease and Frontotemporal dementia**
Huy-Dung Nguyen, Michaël Clément, Boris Mansencal, Pierrick Coupé
- M64 Learning shape distributions from large databases of healthy organs: applications to zero-shot and few-shot abnormal pancreas detection**
Rebeca Vétel, Clément Abi-Nader, Alexandre Bône, Marie-Pierre Vullierme, Marc-Michel Rohé, Pietro Gori, Isabelle Bloch
- M65 Learning Underrepresented Classes from Decentralized Partially Labeled Medical Images**
Nanqing Dong, Michael Kampffmeyer, Irina Voiculescu
- M66 Light-weight spatio-temporal graphs for segmentation and ejection fraction prediction in cardiac ultrasound**
Sarina Thomas, Andrew Gilbert, Guy Ben-Yosef
- M67 Localizing the Recurrent Laryngeal Nerve via Ultrasound with a Bayesian Shape Framework**
Haoran Dou, Luyi Han, Yushuang He, Jun Xu, Nishant Ravikumar, Ritse Mann, Alejandro F. Frangi, Pew-Thian Yap, Yunzhi Huang
- M68 Opportunistic Incidence Prediction of Multiple Chronic Diseases from Abdominal CT Imaging Using Multi-Task Learning**
Louis Blankemeier, Isabel Gallegos, Juan Manuel Zambrano Chavez, David Maron, Alexander Sandhu, Fatima Rodriguez, Daniel Rubin, Bhavik Patel, Marc Willis, Robert Boutin, Akshay S. Chaudhari
- M69 Out-of-Distribution Detection for Long-tailed and Fine-grained Skin Lesion Images**
Deval Mehta, Yaniv Gal, Adrian Bowling, Paul Bonnington, Zongyuan Ge

POSTER PRESENTATION PROGRAM

- M70** **Pose-based Tremor Classification for Parkinson's Disease Diagnosis from Video**
Haozheng Zhang, Edmond S. L. Ho, Xiatian Zhang, Hubert P. H. Shum
- M71** **Prognostic Imaging Biomarker Discovery in Survival Analysis for Idiopathic Pulmonary Fibrosis**
An Zhao, Ahmed H. Shahin, Yukun Zhou, Eyjolfur Gudmundsson, Adam Szmul, Nesrin Mogulkac, Frouke van Beek, Christopher J. Brereton, Hendrik W. van Es, Katarina Pontoppidan, Recep Savas, Timothy Wallis, Omer Unat, Marcel Veltkamp, Mark G. Jones, Coline H.M. van Moorsel, David Barber, Joseph Jacob, Daniel C. Alexander
- M72** **Pseudo Bias-Balanced Learning for Debiased Chest X-ray Classification**
Luyang Luo, Dunyuan Xu, Hao Chen, Tien-Tsin Wong, Pheng-Ann Heng
- M73** **Radiological Reports Improve Pre-Training for Localized Imaging Tasks on Chest X-Rays**
Philip Müller, Georgios Kaissis, Congyu Zou, Daniel Rueckert
- M74** **Reinforcement learning for active modality selection during diagnosis**
Gabriel Bernardino, Anders Jonsson, Filip Loncaric, Pablo-Miki Martí Castellote, Marta Sitges, Patrick Clarysse, Nicolas Duchateau
- M75** **Reliability of quantification estimates in MR Spectroscopy: CNNs vs. traditional model fitting**
Rudy Rizzo, Martyna Dziadosz, Sreenath P. Kyathanahally, Mauricio Reyes, Roland Kreis
- M76** **RepsNet: Combining Vision with Language for Automated Medical Reports**
Ajay K. Tanwani, Joelle Barral, Daniel Freedman
- M77** **Survival Prediction of Brain Cancer with Incomplete Radiology, Pathology, Genomic, and Demographic Data**
Can Cui, Han Liu, Quan Liu, Ruining Deng, Zuhayr Asad, Yaohong Wang, Shilin Zhao, Haichun Yang, Bennett A. Landman, Yuankai Huo
- M78** **The (de)biasing effect of GAN-based augmentation methods on skin lesion images**
Agnieszka Mikołajczyk, Sylwia Majchrowska, Sandra Carrasco Limeros
- M79** **TMSS: An End-to-End Transformer-based Multimodal Network for Segmentation and Survival Prediction**
Numan Saeed, Ikboljon Sobirov, Roba Al Majzoub, Mohammad Yaqub
- M80** **Towards Unsupervised Ultrasound Video Clinical Quality Assessment with Multi-Modality Data**
He Zhao, Qingqing Zheng, Clare Teng, Robail Yasrab, Lior Drukker, Aris T. Papageorgiou, J. Alison Noble
- M81** **Why patient data cannot be easily forgotten?**
Ruolin Su, Xiao Liu, Sotirios A. Tsaftaris

POSTER PRESENTATION PROGRAM

Poster 2: Computer Aided Diagnosis II (Virtual) Sept 19, 2022 (Monday), 14:30 - 15:30

Session Chairs: *Bernhard Kainz, Imperial College London, United Kingdom*
Tanveer Syeda-Mahmood, IBM Research, United States

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| MV-2-PC01 | 3D Global Fourier Network for Alzheimer's Disease Diagnosis using Structural MRI
<i>Shengjie Zhang, Xiang Chen, Bohan Ren, Haibo Yang, Ziqi Yu, Xiao-Yong Zhang, Yuan Zhou</i> |
| MV-2-PC02 | A Self-Guided Framework for Radiology Report Generation
<i>Jun Li, Shibo Li, Ying Hu, Hui Ren Tao</i> |
| MV-2-PC03 | An Advanced Deep Learning Framework for Video-based Diagnosis of ASD
<i>Miaomiao Cai, Mingxing Li, Zhiwei Xiong, Pengju Zhao, Enyao Li, Jiulai Tang</i> |
| MV-2-PC04 | An Inclusive Task-Aware Framework for Radiology Report Generation
<i>Lin Wang, Munan Ning, Donghuan Lu, Dong Wei, Yefeng Zheng, Jie Chen</i> |
| MV-2-PC05 | Attentional Generative Multimodal Network for Neonatal Postoperative Pain Estimation
<i>Md Sirajus Salekin, Ghada Zamzmi, Dmitry Goldgof, Peter R. Mouton, Kanwaljeet J. S. Anand, Terri Ashmeade, Stephanie Prescott, Yangxin Huang, Yu Sun</i> |
| MV-2-PC06 | Automating Blastocyst Formation and Quality Prediction in Time-Lapse Imaging with Adaptive Key Frame Selection
<i>Tingting Chen, Yi Cheng, Jinhong Wang, Zhaoxia Yang, Wenhao Zheng, Danny Z. Chen, Jian Wu</i> |
| MV-2-PC07 | BERTHop: An Effective Vision-and-Language Model for Chest X-ray Disease Diagnosis
<i>Masoud Monajatipoor, Mozdeh Rouhsedaghat, Liunian Harold Li, C.-C. Jay Kuo, Aichi Chien, Kai-Wei Chang</i> |
| MV-2-PC08 | Censor-aware Semi-supervised Learning for Survival Time Prediction from Medical Images
<i>Renato Hermoza, Gabriel Maicas, Jacinto C. Nascimento, Gustavo Carneiro</i> |
| MV-2-PC09 | Computer-aided Tuberculosis Diagnosis with Attribute Reasoning Assistance
<i>Chengwei Pan, Gangming Zhao, Junjie Fang, Baolian Qi, Jiaheng Liu, Chaowei Fang, Dingwen Zhang, Jinpeng Li, Yizhou Yu</i> |

POSTER PRESENTATION PROGRAM

- MV-2-PC10 Data-Driven Deep Supervision for Skin Lesion Classification**
Suraj Mishra, Yizhe Zhang, Li Zhang, Tianyu Zhang, X. Sharon Hu, Danny Z. Chen
- MV-2-PC11 Decoding Task Sub-type States with Group Deep Bidirectional Recurrent Neural Network**
Shijie Zhao, Long Fang, Lin Wu, Yang Yang, Junwei Han
- MV-2-PC12 Delving into Local Features for Open-Set Domain Adaptation in Fundus Image Analysis**
Yi Zhou, Shaochen Bai, Tao Zhou, Yu Zhang, Huazhu Fu
- MV-2-PC13 FairPrune: Achieving Fairness Through Pruning for Dermatological Disease Diagnosis**
Yawen Wu, Dewen Zeng, Xiaowei Xu, Yiyu Shi, Jingtong Hu
- MV-2-PC14 FFCNet: Fourier Transform-Based Frequency Learning and Complex Convolutional Network for Colon Disease Classification**
Kai-Ni Wang, Yuting He, Shuaishuai Zhuang, Juzheng Miao, Xiaopu He, Ping Zhou, Guanyu Yang, Guang-Quan Zhou, Shuo Li
- MV-2-PC15 GaitForeMer: Self-Supervised Pre-Training of Transformers via Human Motion Forecasting for Few-Shot Gait Impairment Severity Estimation**
Mark Endo, Kathleen L. Poston, Edith V. Sullivan, Li Fei-Fei, Kilian M. Pohl, Ehsan Adeli
- MV-2-PC16 Histogram-based unsupervised domain adaptation for medical image classification**
Pengfei Diao, Akshay Pai, Christian Igel, Christian Hedeager Krag
- MV-2-PC17 Identification of vascular cognitive impairment in adult moyamoya disease via integrated graph convolutional network**
Xi Chen, Wenwen Zeng, Guoqing Wu, Yu Lei, Wei Ni, Yuanyuan Wang, Yuxiang Gu, Jinhua Yu
- MV-2-PC18 Is a PET all you need? A multi-modal study for Alzheimer's disease using 3D CNNs**
Marla Narazani, Ignacio Sarasua, Sebastian Pölsterl, Aldana Lizarraga, Igor Yakushev, Christian Wachinger
- MV-2-PC19 Key-frame Guided Network for Thyroid Nodule Recognition using Ultrasound Videos**
Yuchen Wang, Zhongyu Li, Xiangxiang Cui, Liangliang Zhang, Xiang Luo, Meng Yang, Shi Chang
- MV-2-PC20 Lesion Guided Explainable Few Weak-shot Medical Report Generation**
Jinghan Sun, Dong Wei, Liansheng Wang, Yefeng Zheng

POSTER PRESENTATION PROGRAM

- MV-2-PC21** **Less is More: Adaptive Curriculum Learning for Thyroid Nodule Diagnosis**
Haifan Gong, Hui Cheng, Yifan Xie, Shuangyi Tan, Guanqi Chen, Fei Chen, Guanbin Li
- MV-2-PC22** **Long-tailed Multi-label Retinal Diseases Recognition via Relational Learning and Knowledge Distillation**
Qian Zhou, Hua Zou, Zhongyuan Wang
- MV-2-PC23** **LSSANet: A Long Short Slice-Aware Network for Pulmonary Nodule Detection**
Rui Xu, Yong Luo, Bo Du, Kaoming Kuang, Jiancheng Yang
- MV-2-PC24** **MIRST-DM: Multi-Instance RST with Drop-Max Layer for Robust Classification of Breast Cancer**
Shoukun Sun, Min Xian, Aleksandar Vakanski, Hosny Ghanem
- MV-2-PC25** **Multi-Task Lung Nodule Detection in Chest Radiographs with a Dual Head Network**
Chen-Han Tsai, Yu-Shao Peng
- MV-2-PC26** **Multi-TransSP: Multimodal Transformer for Survival Prediction of Nasopharyngeal Carcinoma Patients**
Hanci Zheng, Zongying Lin, Qizheng Zhou, Xingchen Peng, Jianghong Xiao, Chen Zu, Zhengyang Jiao, Yan Wang
- MV-2-PC27** **MUSCLE: Multi-task Self-supervised Continual Learning to Pre-train Deep Models for X-ray Images of Multiple Body Parts**
Weibin Liao, Haoyi Xiong, Qingzhong Wang, Yan Mo, Xuhong Li, Yi Liu, Zeyu Chen, Siyu Huang, Dejing Dou
- MV-2-PC28** **ORF-Net: Deep Omni-supervised Rib Fracture Detection from Chest CT Scans**
Zhizhong Chai, Huangjing Lin, Luyang Luo, Pheng-Ann Heng, Hao Chen
- MV-2-PC29** **Regression Metric Loss: Learning a Semantic Representation Space for Medical Images**
Hanqing Chao, Jiajin Zhang, Pingkun Yan
- MV-2-PC30** **Reliability-aware Contrastive Self-ensembling for Semi-supervised Medical Image Classification**
Wenlong Hang, Yecheng Huang, Shuang Liang, Baiying Lei, Kup-Sze Choi, Jing Qin
- MV-2-PC31** **Towards Confident Detection of Prostate Cancer using High Resolution Micro-ultrasound**
Mahdi Gilany, Paul Wilson, Amoon Jamzad, Fahimeh Fooladgar, Minh Nguyen Nhat To, Brian Wodlinger, Purang Abolmaesumi, Parvin Mousavi

POSTER PRESENTATION PROGRAM

- MV-2-PC32 **Transformer Based Multi-task Deep Learning with Intravoxel Incoherent Motion Model Fitting for Microvascular Invasion Prediction of Hepatocellular Carcinoma**
Haoyuan Huang, Baoer Liu, Lijuan Zhang, Yikai Xu, Wu Zhou
- MV-2-PC33 **TranSQ: Transformer-based Semantic Query for Medical Report Generation**
Ming Kong, Zhengxing Huang, Kun Kuang, Qiang Zhu, Fei Wu
- MV-2-PC34 **Uni4Eye: Unified 2D and 3D Self-supervised Pre-training via Masked Image Modeling Transformer for Ophthalmic Image Classification**
Zhiyuan Cai, Li Lin, Huaqing He, Xiaoying Tang
- MV-2-PC35 **Unsupervised Cross-Disease Domain Adaptation by Lesion Scale Matching**
Jun Gao, Qicheng Lao, Qingbo Kang, Paul Liu, Le Zhang, Kang Li
- MV-2-PC36 **Unsupervised Lesion-Aware Transfer Learning for Diabetic Retinopathy Grading in Ultra-Wide-Field Fundus Photography**
Yanmiao Bai, Jinkui Hao, Huazhu Fu, Yan Hu, Xinting Ge, Jiang Liu, Yitian Zhao, Jiong Zhang
- MV-2-PC37 **Weighted Concordance Index Loss-based Multimodal Survival Modeling for Radiation Encephalopathy Assessment in Nasopharyngeal Carcinoma Radiotherapy**
Jiansheng Fang, Anwei Li, Pu-Yun OuYang, Jiajian Li, Jingwen Wang, Hongbo Liu, Fang-Yun Xie, Jiang Liu

POSTER PRESENTATION PROGRAM

Poster 3: Computer-Assisted Interventions (In Person) Sept 19, 2022 (Monday), 17:00 - 18:00

Session Chairs: *Sophia Bano, University College London, United Kingdom*
Stamatia Giannarou, Imperial College London, United Kingdom

- M82** **4D-OR: Semantic Scene Graphs for OR Domain Modeling**
Ege Özsoy, Evin Pinar Örnek, Ulrich Eck, Tobias Czempiel, Federico Tombari, Nassir Navab
- M83** **Adaptive 3D Localization of 2D Freehand Ultrasound Brain Images**
Pak-Hei Yeung, Moska Aliasí, Monique Haak, the INTERGROWTH-21st Consortium, Weidi Xie, Ana I. L. Namburete
- M84** **An Optimal Control Problem for Elastic Registration and Force Estimation in Augmented Surgery**
Guillaume Mestdagh, Stéphane Cotin
- M85** **AutoLaparo: A New Dataset of Integrated Multi-tasks for Image-guided Surgical Automation in Laparoscopic Hysterectomy**
Ziyi Wang, Bo Lu, Yonghao Long, Fangxun Zhong, Tak-Hong Cheung, Qi Dou, Yunhui Liu
- M86** **CaRTS: Causality-driven Robot Tool Segmentation from Vision and Kinematics Data**
Hao Ding, Jintan Zhang, Peter Kazanzides, Jie Ying Wu, Mathias Unberath
- M87** **Deep Geometric Supervision Improves Spatial Generalization in Orthopedic Surgery Planning**
Florian Kordon, Andreas Maier, Benedict Swartman, Maxim Privalov, Jan S. El Barbari, Holger Kunze
- M88** **Deep Laparoscopic Stereo Matching with Transformers**
Xuelian Cheng, Yiran Zhong, Mehrtash Harandi, Tom Drummond, Zhiyong Wang, Zongyuan Ge
- M89** **Deep Regression with Spatial-Frequency Feature Coupling and Image Synthesis for Robot-Assisted Endomicroscopy**
Chi Xu, Alfie Roddan, Joseph Davids, Alistair Weld, Haozheng Xu, Stamatia Giannarou
- M90** **Digestive Organ Recognition in Video Capsule Endoscopy based on Temporal Segmentation Network**
Yejee Shin, Taejoon Eo, Hyeonseop Rha, Dong Jun Oh, Geonhui Son, Jiwoong An, You Jin Kim, Dosik Hwang, Yun Jeong Lim

POSTER PRESENTATION PROGRAM

- M91 Fast Automatic Liver Tumor Radiofrequency Ablation Planning via Learned Physics Model**
Felix Meister, Chloé Audigier, Tiziano Passerini, Èric Lluch, Viorel Mihalef, Andreas Maier, Tommaso Mansi
- M92 Free Lunch for Surgical Video Understanding by Distilling Self-Supervisions**
Xinpeng Ding, Ziwei Liu, Xiaomeng Li
- M93 Geometric Constraints for Self-supervised Monocular Depth Estimation on Laparoscopic Images with Dual-task Consistency**
Wenda Li, Yuichiro Hayashi, Masahiro Oda, Takayuki Kitasaka, Kazunari Misawa, Kensaku Mori
- M94 Greedy Optimization of Electrode Arrangement for Epiretinal Prostheses**
Ashley Bruce, Michael Beyeler
- M95 Hand Hygiene Quality Assessment using Image-to-Image Translation**
Chaofan Wang, Kangning Yang, Weiwei Jiang, Jing Wei, Zhanna Sarsenbayeva, Jorge Goncalves, Vassilis Kostakos
- M96 Instrument-tissue Interaction Quintuple Detection in Surgery Videos**
Wenjun Lin, Yan Hu, Luoying Hao, Dan Zhou, Mingming Yang, Huazhu Fu, Cheekong Chui, Jiang Liu
- M97 Mixed Reality and Deep Learning for External Ventricular Drainage Placement: a Fast and Automatic Workflow for Emergency Treatments**
Maria Chiara Palumbo, Simone Saitta, Marco Schiariti, Maria Chiara Sbarra, Eleonora Turconi, Gabriella Raccuia, Junling Fu, William Dallolio, Paolo Ferrolì, Emiliano Votta, Elena De Momi, Alberto Redaelli
- M98 Multimodal-GuideNet: Gaze-Probe Bidirectional Guidance in Obstetric Ultrasound Scanning**
Qianhui Men, Clare Teng, Lior Drukker, Aris T. Papageorgiou, J. Alison Noble
- M99 Multi-task video enhancement for dental interventions**
Efklidis Katsaros, Piotr K. Ostrowski, Krzysztof Włodarczyk, Emilia Lewandowska, Jacek Ruminski, Damian Siupka-Mróż, Łukasz Lassmann, Anna Jezierska, Daniel Węsierski
- M100 Neural Rendering for Stereo 3D Reconstruction of Deformable Tissues in Robotic Surgery**
Yuehao Wang, Yonghao Long, Siu Hin Fan, Qi Dou

POSTER PRESENTATION PROGRAM

- M101** **On Surgical Planning of Percutaneous Nephrolithotomy with Patient-Specific CTRs**
Filipe C. Pedrosa, Navid Feizi, Ruisi Zhang, Remi Delaunay, Dianne Sacco, Jayender Jagadeesan, Rajni Patel
- M102** **PRO-TIP: Phantom for RObust automatic ultrasound calibration by TIP detection**
Matteo Ronchetti, Julia Rackerseder, Maria Tirindelli, Mehrdad Salehi, Nassir Navab, Wolfgang Wein, Oliver Zettinig
- M103** **Real-Time 3D Reconstruction of Human Vocal Folds via High-Speed Laser-Endoscopy**
Jann-Ole Henningson, Marc Stamminger, Michael Döllinger, Marion Semmler
- M104** **Recurrent Implicit Neural Graph for Deformable Tracking in Endoscopic Videos**
Adam Schmidt, Omid Mohareri, Simon DiMaio, Septimiu E. Salcudean
- M105** **Rethinking Surgical Captioning: End-to-End Window-Based MLP Transformer Using Patches**
Mengya Xu, Mobarakol Islam, Hongliang Ren
- M106** **Retrieval of surgical phase transitions using reinforcement learning**
Yitong Zhang, Sophia Bano, Ann-Sophie Page, Jan Depreest, Danail Stoyanov, Francisco Vasconcelos
- M107** **Self-Supervised Depth Estimation in Laparoscopic Image using 3D Geometric Consistency**
Baoru Huang, Jian-Qing Zheng, Anh Nguyen, Chi Xu, Ioannis Gkouzionis, Kunal Vyas, David Tuch, Stamatia Giannarou, Daniel S. Elson
- M108** **SLAM-TKA: Real-time Intra-operative Measurement of Tibial Resection Plane in Conventional Total Knee Arthroplasty**
Shuai Zhang, Liang Zhao, Shoudong Huang, Hua Wang, Qi Luo, Qi Hao
- M109** **Stereo Depth Estimation via Self-Supervised Contrastive Representation Learning**
Samyakh Tukra, Stamatia Giannarou
- M111** **Surgical Scene Segmentation Using Semantic Image Synthesis with a Virtual Surgery Environment**
Jihun Yoon, SeulGi Hong, Seungbum Hong, Jiwon Lee, Soyeon Shin, Bokyung Park, Nakjun Sung, Hayeong Yu, Sungjae Kim, SungHyun Park, Woo Jin Hyung, Min-Kook Choi

POSTER PRESENTATION PROGRAM

- M112 **Surgical Skill Assessment via Video Semantic Aggregation**
Zhenqiang Li, Lin Gu, Weimin Wang, Ryosuke Nakamura, Yoichi Sato
- M113 **Surgical-VQA: Visual Question Answering in Surgical Scenes using Transformer**
Lalithkumar Seenivasan, Mobarakol Islam, Adithya K Krishna, Hongliang Ren
- M114 **Towards Holistic Surgical Scene Understanding**
Natalia Valderrama, Paola Ruiz Puentes, Isabela Hernández, Nicolás Ayobi, Mathilde Verlyck, Jessica Santander, Juan Caicedo, Nicolás Fernández, Pablo Arbeláez
- M115 **USG-Net: Deep Learning-based Ultrasound Scanning-Guide for an Orthopedic Sonographer**
Kyungsu Lee, Jaeseung Yang, Moon Hwan Lee, Jin Ho Chang, Jun-Young Kim, Jae Youn Hwang
- M116 **USPoint: Self-Supervised Interest Point Detection and Description for Ultrasound-Probe Motion Estimation during Fine-Adjustment Standard Fetal Plane Finding**
Cheng Zhao, Richard Droste, Lior Drukker, Aris T. Papageorgiou, J. Alison Noble
- M117 **Video-based Surgical Skills Assessment using Long term Tool Tracking**
Mona Fathollahi, Mohammad Hasan Sarhan, Ramon Pena, Lela DiMonte, Anshu Gupta, Aishani Ataliwala, Jocelyn Barker

POSTER PRESENTATION PROGRAM

Poster 3: Computer-Assisted Interventions (Virtual) Sept 19, 2022 (Monday), 17:00 - 18:00

Session Chairs: *Sophia Bano, University College London, United Kingdom*
Stamatia Giannarou, Imperial College London, United Kingdom

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|-----------|--|
| MV-3-PC01 | A Novel Fusion Network for Morphological Analysis of Common Iliac Artery
<i>Meng Song, Shi-Qi Liu, Xiao-Liang Xie, Xiao-Hu Zhou, Zeng-Guang Hou, Yan-Jie Zhou, Xi-Yao Ma</i> |
| MV-3-PC04 | Adaptation of Surgical Activity Recognition Models Across Operating Rooms
<i>Ali Mottaghi, Aidean Sharghi, Serena Yeung, Omid Mohareri</i> |
| MV-3-PC07 | Agent with Tangent-based Formulation and Anatomical Perception for Standard Plane Localization in 3D Ultrasound
<i>Yuxin Zou, Haoran Dou, Yuhao Huang, Xin Yang, Jikuan Qian, Chaojiang Zhen, Xiaodan Ji, Nishant Ravikumar, Guoqiang Chen, Weijun Huang, Alejandro F. Frangi, Dong Ni</i> |
| MV-3-PC10 | Bayesian dense inverse searching algorithm for real-time stereo matching in minimally invasive surgery
<i>Jingwei Song, Qiuchen Zhu, Jianyu Lin, Maani Ghaffari</i> |
| MV-3-PC13 | CLTS-GAN: Color-Lighting-Texture-Specular Reflection Augmentation for Colonoscopy
<i>Shawn Mathew, Saad Nadeem, Arie Kaufman</i> |
| MV-3-PC16 | Conditional Generative Data Augmentation for Clinical Audio Datasets
<i>Matthias Seibold, Armando Hoch, Mazda Farshad, Nassir Navab, Philipp Fürnstahl</i> |
| MV-3-PC19 | Contrastive Transformer-based Multiple Instance Learning for Weakly Supervised Polyp Frame Detection
<i>Yu Tian, Guansong Pang, Fengbei Liu, Yuyuan Liu, Chong Wang, Yuanhong Chen, Johan W Verjans, Gustavo Carneiro</i> |
| MV-3-PC22 | Deep Learning-based Facial Appearance Simulation Driven by Surgically Planned Craniomaxillofacial Bony Movement
<i>Xi Fang, Daeseung Kim, Xuanang Xu, Tianshu Kuang, Hannah H. Deng, Joshua C. Barber, Nathan Lampen, Jaime Gateno, Michael A.K. Liebschner, James J. Xia, Pingkun Yan</i> |

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- MV-3-PC25 DSP-Net: Deeply-Supervised Pseudo-Siamese Network for Dynamic Angiographic Image Matching**
Xi-Yao Ma, Shi-Qi Liu, Xiao-Liang Xie, Xiao-Hu Zhou, Zeng-Guang Hou, Yan-Jie Zhou, Meng Song, Lin-Sen Zhang, Chao-Nan Wang
- MV-3-PC28 Ideal Midsagittal Plane Detection using Deep Hough Plane Network for Brain Surgical Planning**
Chenchen Qin, Wenxue Zhou, Jianbo Chang, Yihao Chen, Dasheng Wu, Yixun Liu, Ming Feng, Renzhi Wang, Wenming Yang, Jianhua Yao
- MV-3-PC31 Lesion-aware Dynamic Kernel for Polyp Segmentation**
Ruifei Zhang, Peiwen Lai, Xiang Wan, De-Jun Fan, Feng Gao, Xiao-Jian Wu, Guanbin Li
- MV-3-PC33 Nonlinear Regression of Remaining Surgical Duration via Bayesian LSTM-based Deep Negative Correlation Learning**
Junyang Wu, Rong Tao, Guoyan Zheng
- MV-3-PC35 Rethinking Surgical Instrument Segmentation: A Background Image Can Be All You Need**
An Wang, Mobarakol Islam, Mengya Xu, Hongliang Ren
- MV-3-PC37 Self-supervised 3D Patient Modeling with Multi-modal Attentive Fusion**
Meng Zheng, Benjamin Planche, Xuan Gong, Fan Yang, Terrence Chen, Ziyang Wu
- MV-3-PC39 SGT: Scene Graph-Guided Transformer for Surgical Report Generation**
Chen Lin, Shuai Zheng, Zhizhe Liu, Youru Li, Zhenfeng Zhu, Yao Zhao

POSTER PRESENTATION PROGRAM

Poster 4: Image Segmentation, Registration & Reconstruction I (In Person)

Sept 20, 2022 (Tuesday), 10:30 - 11:30

*Session Chairs: Ilkay Oksuz, Istanbul technical university, Turkey
Guang Yang, Imperial College London, United Kingdom*

- T1** **A Projection-Based K-space Transformer Network for Undersampled Radial MRI Reconstruction with Limited Training Subjects**
Chang Gao, Shu-Fu Shih, J. Paul Finn, Xiaodong Zhong
- T2** **Analyzing and Improving Low Dose CT Denoising Network via HU Level Slicing**
Sutanu Bera, Prabir Kumar Biswas
- T3** **Asymmetry Disentanglement Network for Interpretable Acute Ischemic Stroke Infarct Segmentation in Non-Contrast CT Scans**
Haomiao Ni, Yuan Xue, Kelvin Wong, John Volpi, Stephen T.C. Wong, James Z. Wang, Xiaolei Huang
- T4** **Autofocusing+: Noise-Resilient Motion Correction in Magnetic Resonance Imaging**
Ekaterina Kuzmina, Artem Razumov, Oleg Y. Rogov, Elfar Adalsteinsson, Jacob White, Dmitry V. Dyllov
- T5** **Automatic identification of segmentation errors for radiotherapy using geometric learning**
Edward G. A. Henderson, Andrew F. Green, Marcel van Herk, Eliana M. Vasquez Osorio
- T6** **Automatic Segmentation of Hip Osteophytes in DXA Scans using U-Nets**
Raja Ebsim, Benjamin G. Faber, Fiona Saunders, Monika Frysz, Jenny Gregory, Nicholas C. Harvey, Jonathan H. Tobias, Claudia Lindner, Timothy F. Cootes
- T7** **Bi-directional Encoding for Explicit Centerline Segmentation by Fully-Convolutional Networks**
Ilyas Sirazitdinov, Axel Saalbach, Heinrich Schulz, Dmitry V. Dyllov
- T8** **BMD-GAN: Bone mineral density estimation using x-ray image decomposition into projections of bone-segmented quantitative computed tomography using hierarchical learning**
Yi Gu, Yoshito Otake, Keisuke Uemura, Mazen Soufi, Masaki Takao, Nobuhiko Sugano, Yoshinobu Sato

POSTER PRESENTATION PROGRAM

- T9** **Calibrating Label Distribution for Class-Imbalanced Barely-Supervised Knee Segmentation**
Yiqun Lin, Huifeng Yao, Zezhong Li, Guoyan Zheng, Xiaomeng Li
- T10** **Capturing Shape Information with Multi-Scale Topological Loss Terms for 3D Reconstruction**
Dominik J. E. Waibel, Scott Atwell, Matthias Meier, Carsten Marr, Bastian Rieck
- T11** **Contrastive learning for echocardiographic view integration**
Li-Hsin Cheng, Xiaowu Sun, Rob J. van der Geest
- T12** **Data-driven Multi-Modal Partial Medical Image Preregistration by Template Space Patch Mapping**
Ding Xia, Xi Yang, Oliver van Kaick, Taichi Kin, Takeo Igarashi
- T14** **DeepRecon: Joint 2D Cardiac Segmentation and 3D Volume Reconstruction via A Structure-Specific Generative Method**
Qi Chang, Zhennan Yan, Mu Zhou, Di Liu, Khalid Sawalha, Meng Ye, Qilong Zhangli, Mikael Kanski, Subhi Al'Aref, Leon Axel, Dimitris Metaxas
- T13** **Interpretable Modeling and Reduction of Unknown Errors in Mechanistic Operators**
Maryam Toloubidokhti, Nilesh Kumar, Zhiyuan Li, Prashnna K. Gyawali, Brian Zenger, Wilson W. Good, Rob S. MacLeod, Linwei Wang
- T15** **Diffusion Deformable Model for 4D Temporal Medical Image Generation**
Boah Kim, Jong Chul Ye
- T16** **DisQ: Disentangling Quantitative MRI Mapping of the Heart**
Changchun Yang, Yidong Zhao, Lu Huang, Liming Xia, Qian Tao
- T17** **DSR: Direct Simultaneous Registration for Multiple 3D Images**
Zhehua Mao, Liang Zhao, Shoudong Huang, Yiting Fan, Alex P.W. Lee
- T18** **End-to-End Segmentation of Medical Images via Patch-wise Polygons Prediction**
Tal Shaharabany, Lior Wolf
- T19** **Enforcing connectivity of 3D linear structures using their 2D projections**
Doruk Oner, Hussein Osman, Mateusz Koziński, Pascal Fua
- T20** **Evidence fusion with contextual discounting for multi-modality medical image segmentation**
Ling Huang, Thierry Denoeux, Pierre Vera, Su Ruan

POSTER PRESENTATION PROGRAM

- T21 Learning Tumor-Induced Deformations to Improve Tumor-Bearing Brain MR Segmentation**
Meng Jia, Matthew Kyan
- T22 Learning with Context Encoding for Single-Stage Cranial Bone Labeling and Landmark Localization**
Jiawei Liu, Fuyong Xing, Abbas Shaikh, Marius George Linguraru, Antonio R. Porras
- T23 mmFormer: Multimodal Medical Transformer for Incomplete Multimodal Learning of Brain Tumor Segmentation**
Yao Zhang, Nanjun He, Jiawei Yang, Yuexiang Li, Dong Wei, Yawen Huang, Yang Zhang, Zhiqiang He, Yefeng Zheng
- T24 ModDrop++: A Dynamic Filter Network with Intra-subject Co-training for Multiple Sclerosis Lesion Segmentation with Missing Modalities**
Han Liu, Yubo Fan, Hao Li, Jiacheng Wang, Dewei Hu, Can Cui, Ho Hin Lee, Huahong Zhang, Ipek Oguz
- T25 NAF: Neural Attenuation Fields for Sparse-View CBCT Reconstruction**
Ruyi Zha, Yanhao Zhang, Hongdong Li
- T27 Poisson2Sparse: Self-Supervised Poisson Denoising From a Single Image**
Calvin-Khang Ta, Abhishek Aich, Akash Gupta, Amit K. Roy-Chowdhury
- T28 Privacy Preserving Image Registration**
Riccardo Taiello, Melek Önen, Olivier Humbert, Marco Lorenzi
- T29 Self-supervised 3D anatomy segmentation using self-distilled masked image transformer (SMIT)**
Jue Jiang, Neelam Tyagi, Kathryn Tringale, Christopher Crane, Harini Veeraraghavan
- T30 Sensor Geometry Generalization to Untrained Conditions in Quantitative Ultrasound Imaging**
SeokHwan Oh, Myeong-Gee Kim, Youngmin Kim, Guil Jung, Hyuksool Kwon, Hyeon-Min Bae
- T31 Shape-Aware Weakly/Semi-Supervised Optic Disc and Cup Segmentation with Regional/Marginal Consistency**
Yanda Meng, Xu Chen, Hongrun Zhang, Yitian Zhao, Dongxu Gao, Barbra Hamill, Godhuli Patri, Tunde Peto, Savita Madhusudhan, Yalin Zheng

POSTER PRESENTATION PROGRAM

- T32 Simultaneous Bone and Shadow Segmentation Network using Task Correspondence Consistency**
Aimon Rahman, Jeya Maria Jose Valanarasu, Ilker Hacihaliloglu, Vishal M Patel
- T33 SMESwin Unet: Merging CNN and Transformer for Medical Image Segmentation**
Ziheng Wang, Xiongkuo Min, Fangyu Shi, Ruinian Jin, Saida S. Nawrin, Ichen Yu, Ryoichi Nagatomi
- T34 Swin Deformable Attention U-Net Transformer (SDAUT) for Explainable Fast MRI**
Jiahao Huang, Xiaodan Xing, Zhifan Gao, Guang Yang
- T35 Unsupervised Deformable Image Registration with Absent Correspondences in Pre-operative and Post-Recurrence Brain Tumor MRI Scans**
Tony C. W. Mok, Albert C. S. Chung
- T36 Vector Quantisation for Robust Segmentation**
Ainkaran Santhirasekaram, Avinash Kori, Mathias Winkler, Andrea Rockall, Ben Glocker
- T37 Weakly-supervised Biomechanically-constrained CT/MRI Registration of the Spine**
Bailiang Jian, Mohammad Farid Azampour, Francesca De Benetti, Johannes Oberreuter, Christina Bukas, Alexandra S. Gersing, Sarah C. Foreman, Anna-Sophia Dietrich, Jon Rischewski, Jan S. Kirschke, Nassir Navab, Thomas Wendler
- T38 XMorpher: Full Transformer for Deformable Medical Image Registration via Cross Attention**
Jiacheng Shi, Yuting He, Youyong Kong, Jean-Louis Coatrieux, Huazhong Shu, Guanyu Yang, Shuo Li

POSTER PRESENTATION PROGRAM

Poster 4: Image Segmentation, Registration & Reconstruction I (Virtual)

Sept 20, 2022 (Tuesday), 10:30 - 11:30

Session Chairs: *Ilkay Oksuz, Istanbul technical university, Turkey*
Guang Yang, Imperial College London, United Kingdom

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|-----------|---|
| TV-4-PC01 | 3D CVT-GAN: A 3D Convolutional Vision Transformer-GAN for PET Reconstruction
<i>Pinxian Zeng, Luping Zhou, Chen Zu, Xinyi Zeng, Zhengyang Jiao, Xi Wu, Jiliu Zhou, Dinggang Shen, Yan Wang</i> |
| TV-4-PC02 | A Learnable Variational Model for Joint Multimodal MRI Reconstruction and Synthesis
<i>Wanyu Bian, Qingchao Zhang, Xiaojing Ye, Yunmei Chen</i> |
| TV-4-PC03 | Accurate Corresponding Fiber Tract Segmentation via FiberGeoMap Learner
<i>Zhenwei Wang, Yifan Lv, Mengshen He, Enjie Ge, Ning Qiang, Bao Ge</i> |
| TV-4-PC04 | Adversarial Consistency for Single Domain Generalization in Medical Image Segmentation
<i>Yanwu Xu, Shaoan Xie, Maxwell Reynolds, Matthew Ragoza, Mingming Gong, Kayhan Batmanghelich</i> |
| TV-4-PC05 | An adaptive network with extragradient for diffusion MRI-based microstructure estimation
<i>Tianshu Zheng, Weihao Zheng, Yi Sun, Yi Zhang, Chuyang Ye, Dan Wu</i> |
| TV-4-PC06 | Atlas-based Semantic Segmentation of Prostate Zones
<i>Jiazhen Zhang, Rajesh Venkataraman, Lawrence H. Staib, John A. Onofrey</i> |
| TV-4-PC07 | Attention-enhanced Disentangled Representation Learning for Unsupervised Domain Adaptation in Cardiac Segmentation
<i>Xiaoyi Sun, Zhizhe Liu, Shuai Zheng, Chen Lin, Zhenfeng Zhu, Yao Zhao</i> |
| TV-4-PC08 | Attentive Symmetric Autoencoder for Brain MRI Segmentation
<i>Junjia Huang, Haofeng Li, Guanbin Li, Xiang Wan</i> |
| TV-4-PC09 | AutoGAN-Synthesizer: Neural Architecture Search for Cross-Modality MRI Synthesis
<i>Xiaobin Hu, Ruolin Shen, Donghao Luo, Ying Tai, Chengjie Wang, Bjoern H. Menze</i> |

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| TV-4-PC10 | CIRDataset: A large-scale Dataset for Clinically-Interpretable lung nodule Radiomics and malignancy prediction
<i>Wookjin Choi, Navdeep Dahiya, Saad Nadeem</i> |
| TV-4-PC11 | ContraReg: Contrastive Learning of Multi-modality Unsupervised Deformable Image Registration
<i>Neel Dey, Jo Schlemper, Seyed Sadegh Mohseni Salehi, Bo Zhou, Guido Gerig, Michal Sofka</i> |
| TV-4-PC12 | Degradation-invariant Enhancement of Fundus Images via Pyramid Constraint Network
<i>Haofeng Liu, Heng Li, Huazhu Fu, Ruoxiu Xiao, Yunshu Gao, Yan Hu, Jiang Liu</i> |
| TV-4-PC13 | DuDoCAF: Dual-Domain Cross-Attention Fusion with Recurrent Transformer for Fast Multi-contrast MR Imaging
<i>Jun Lyu, Bin Sui, Chengyan Wang, Yapeng Tian, Qi Dou, Jing Qin</i> |
| TV-4-PC14 | Efficient Biomedical Instance Segmentation via Knowledge Distillation
<i>Xiaoyu Liu, Bo Hu, Wei Huang, Yueyi Zhang, Zhiwei Xiong</i> |
| TV-4-PC15 | Efficient population based hyperparameter scheduling for medical image segmentation
<i>Yufan He, Dong Yang, Andriy Myronenko, Daguang Xu</i> |
| TV-4-PC16 | FUSSNet: Fusing Two Sources of Uncertainty for Semi-Supervised Medical Image Segmentation
<i>Jinyi Xiang, Peng Qiu, Yang Yang</i> |
| TV-4-PC17 | Harnessing Deep Bladder Tumor Segmentation with Logical Clinical Knowledge
<i>Xiao Huang, Xiaodong Yue, Zhikang Xu, Yufei Chen</i> |
| TV-4-PC18 | Mask Rearranging Data Augmentation for 3D Mitochondria Segmentation
<i>Qi Chen, Mingxing Li, Jiacheng Li, Bo Hu, Zhiwei Xiong</i> |
| TV-4-PC19 | Measurement-conditioned Denoising Diffusion Probabilistic Model for Under-sampled Medical Image Reconstruction
<i>Yutong Xie, Quanzheng Li</i> |
| TV-4-PC20 | Modality-adaptive Feature Interaction for Brain Tumor Segmentation with Missing Modalities
<i>Zeichen Zhao, Heran Yang, Jian Sun</i> |

POSTER PRESENTATION PROGRAM

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|-----------|---|
| TV-4-PC21 | <p>Noise2SR: Learning to Denoise from Super-Resolved Single Noisy Fluorescence Image
 <i>Xuanyu Tian, Qing Wu, Hongjiang Wei, Yuyao Zhang</i></p> |
| TV-4-PC22 | <p>On the Dataset Quality Control for Image Registration Evaluation
 <i>Jie Luo, Guangshen Ma, Nazim Haauchine, Zhe Xu, Yixin Wang, Tina Kapur, Lipeng Ning, William M. Wells III, Sarah Frisken</i></p> |
| TV-4-PC23 | <p>Parameter-free latent space transformer for zero-shot bidirectional cross-modality liver segmentation
 <i>Yang Li, Beiji Zou, Yulan Dai, Chengzhang Zhu, Fan Yang, Xin Li, Harrison X. Bai, Zhicheng Jiao</i></p> |
| TV-4-PC24 | <p>Personalized dMRI Harmonization on Cortical Surface
 <i>Yihao Xia, Yonggang Shi</i></p> |
| TV-4-PC25 | <p>PHTrans: Parallely Aggregating Global and Local Representations for Medical Image Segmentation
 <i>Wentao Liu, Tong Tian, Weijin Xu, Huihua Yang, Xipeng Pan, Songlin Yan, Lemeng Wang</i></p> |
| TV-4-PC26 | <p>Progressive Deep Segmentation of Coronary Artery via Hierarchical Topology Learning
 <i>Xiao Zhang, Jingyang Zhang, Lei Ma, Peng Xue, Yan Hu, Dijia Wu, Yiqiang Zhan, Jun Feng, Dinggang Shen</i></p> |
| TV-4-PC27 | <p>RT-DNAS: Real-time Constrained Differentiable Neural Architecture Search for 3D Cardiac Cine MRI Segmentation
 <i>Qing Lu, Xiaowei Xu, Shunjie Dong, Cong Hao, Lei Yang, Cheng Zhuo, Yiyu Shi</i></p> |
| TV-4-PC28 | <p>Self-learning and One-shot Learning based Single-slice Annotation for 3D Medical Image Segmentation
 <i>Yixuan Wu, Bo Zheng, Jintai Chen, Danny Z. Chen, Jian Wu</i></p> |
| TV-4-PC29 | <p>Semi-supervised histological image segmentation via hierarchical consistency enforcement
 <i>Qiangguo Jin, Hui Cui, Changming Sun, Jiangbin Zheng, Leyi Wei, Zhenyu Fang, Zhaopeng Meng, Ran Su</i></p> |
| TV-4-PC30 | <p>Semi-Supervised Medical Image Segmentation Using Cross-Model Pseudo-Supervision with Shape Awareness and Local Context Constraints
 <i>Jinhua Liu, Christian Desrosiers, Yuanfeng Zhou</i></p> |

POSTER PRESENTATION PROGRAM

- TV-4-PC31 **ShapePU: A New PU Learning Framework Regularized by Global Consistency for Scribble Supervised Cardiac Segmentation**
Ke Zhang, Xiahai Zhuang
- TV-4-PC32 **SVoRT: Iterative Transformer for Slice-to-Volume Registration in Fetal Brain MRI**
Junshen Xu, Daniel Moyer, P. Ellen Grant, Polina Golland, Juan Eugenio Iglesias, Elfar Adalsteinsson
- TV-4-PC33 **Swin-VoxelMorph: A Symmetric Unsupervised Learning Model for Deformable Medical Image Registration Using Swin Transformer**
Yongpei Zhu, Shi Lu
- TV-4-PC34 **Thoracic Lymph Node Segmentation in CT imaging via Lymph Node Station Stratification and Size Encoding**
Dazhou Guo, Jia Ge, Ke Yan, Puyang Wang, Zhuotun Zhu, Dandan Zheng, Xian-Sheng Hua, Le Lu, Tsung-Ying Ho, Xianghua Ye, Dakai Jin
- TV-4-PC35 **Towards performant and reliable undersampled MR reconstruction via diffusion model sampling**
Cheng Peng, Pengfei Guo, S. Kevin Zhou, Vishal M Patel, Rama Chellappa
- TV-4-PC36 **Using Guided Self-Attention with Local Information for Polyp Segmentation**
Linghan Cai, Meijing Wu, Lijiang Chen, Wenpei Bai, Min Yang, Shuchang Lyu, Qi Zhao
- TV-4-PC37 **Weakly-supervised High-fidelity Ultrasound Video Synthesis with Feature Decoupling**
Jiamin Liang, Xin Yang, Yuhao Huang, Kai Liu, Xinrui Zhou, Xindi Hu, Zehui Lin, Huanjia Luo, Yuanji Zhang, Yi Xiong, Dong Ni
- TV-4-PC39 **Deep Motion Network for Freehand 3D Ultrasound Reconstruction**
Mingyuan Luo, Xin Yang, Hongzhang Wang, Liwei Du, Dong Ni

POSTER PRESENTATION PROGRAM

Poster 5: Computational Physiology & Pathology (In Person) Sept 20, 2022 (Tuesday), 14:30 - 15:30

Session Chairs: *Yuankai Huo, Vanderbilt University, United States*
Yang Song, University of New South Wales, Australia

- T39 **AdaTriplet: Adaptive Gradient Triplet Loss with Automatic Margin Learning for Forensic Medical Image Matching**
Khanh Nguyen, Huy Hoang Nguyen, Aleksei Tiulpin
- T40 **Attention mechanisms for physiological signal deep learning: which attention should we take?**
Seong-A Park, Hyung-Chul Lee, Chul-Woo Jung, Hyun-Lim Yang
- T41 **D'ARTAGNAN: Counterfactual Video Generation**
Hadrien Reynaud, Athanasios Vrontzos, Mischa Dombrowski, Ciarán Gilligan Lee, Arian Beqiri, Paul Leeson, Bernhard Kainz
- T42 **DeepMIF: Deep learning based cell profiling for multispectral immunofluorescence images with graphical user interface**
Yeman Brhane Hagos, Ayse U Akarca, Alan Ramsay, Riccardo L Rossi, Sabine Pomplun, Alessia Moioli, Andrea Gianatti, Christopher Mcnamara, Alessandro Rambaldi, Sergio A. Quezada, David Linch, Giuseppe Gritti, Teresa Marafioti, Yinyin Yuan
- T43 **Domain Adaptive Nuclei Instance Segmentation and Classification via Category-aware Feature Alignment and Pseudo-labelling**
Canran Li, Dongnan Liu, Haoran Li, Zheng Zhang, Guangming Lu, Xiaojun Chang, Weidong Cai
- T44 **End-to-end Learning for Image-based Detection of Molecular Alterations in Digital Pathology**
Marvin Teichmann, Andre Aichert, Hanibal Bohnenberger, Philipp Ströbel, Tobias Heimann
- T45 **Fast FF-to-FFPE Whole Slide Image Translation via Laplacian Pyramid and Contrastive Learning**
Lei Fan, Arcot Sowmya, Erik Meijering, Yang Song
- T46 **Feature Re-calibration based Multiple Instance Learning for Whole Slide Image Classification**
Philip Chikontwe, Soo Jeong Nam, Heounjeong Go, Meejeong Kim, Hyun Jung Sung, Sang Hyun Park

POSTER PRESENTATION PROGRAM

- T47** **Federated Stain Normalization for Computational Pathology**
Nicolas Wagner, Moritz Fuchs, Yuri Tolkach, Anirban Mukhopadhyay
- T48** **From Images to Probabilistic Anatomical Shapes: A Deep Variational Bottleneck Approach**
Jadie Adams, Shireen Elhabian
- T49** **Gigapixel Whole-Slide Images Classification using Locally Supervised Learning**
Jingwei Zhang, Xin Zhang, Ke Ma, Rajarsi Gupta, Joel Saltz, Maria Vakalopoulou, Dimitris Samaras
- T50** **GradMix for nuclei segmentation and classification in imbalanced pathology image datasets**
Tan Nhu Nhat Doan, Kyungeun Kim, Boram Song, Jin Tae Kwak
- T51** **Graph convolutional network with probabilistic spatial regression: application to craniofacial landmark detection from 3D photogrammetry**
Connor Elkhill, Scott LeBeau, Brooke French, Antonio R. Porras
- T52** **How Much to Aggregate: Learning Adaptive Node-wise Scales on Graphs for Brain Networks**
Injun Choi, Guorong Wu, Won Hwa Kim
- T53** **Implicit Neural Representations for Generative Modeling of Living Cell Shapes**
David Wiesner, Julian Suk, Sven Dummer, David Svoboda, Jelmér M. Wolterink
- T54** **Incorporating intratumoral heterogeneity into weakly-supervised deep learning models via variance pooling**
Iain Carmichael, Andrew H. Song, Richard J. Chen, Drew F.K. Williamson, Tiffany Y. Chen, Faisal Mahmood
- T55** **InsMix: Towards Realistic Generative Data Augmentation for Nuclei Instance Segmentation**
Yi Lin, Zeyu Wang, Kwang-Ting Cheng, Hao Chen
- T56** **Interpretable signature of consciousness in resting-state functional network brain activity**
Antoine Grigis, Chloé Gomez, Vincent Frouin, Lynn Uhrig, Béchir Jarraya
- T57** **Landmark-free Statistical Shape Modeling via Neural Flow Deformations**
David Lüdke, Tamaz Amiranashvili, Felix Ambellan, Ivan Ezhov, Bjoern H. Menze, Stefan Zachow

POSTER PRESENTATION PROGRAM

- T58 LifELonger: A Benchmark for Continual Disease Classification**
Mohammad Mahdi Derakhshani, Ivona Najdenkoska, Tom van Sonsbeek, Xiantong Zhen, Dwarikanath Mahapatra, Marcel Worring, Cees G. M. Snoek
- T59 Local Attention Graph-based Transformer for Multi-target Genetic Alteration Prediction**
Daniel Reisenbüchler, Sophia J. Wagner, Melanie Boxberg, Tingying Peng
- T60 Modelling Cycles in Brain Networks with the Hodge Laplacian**
Sixtus Dakurah, D. Vijay Anand, Zijian Chen, Mao K. Chung
- T61 Predicting molecular traits from tissue morphology through self-interactive multi-instance learning**
Yang Hu, Korsuk Sirinukunwattana, Kezia Gaitskell, Ruby Wood, Clare Verrill, Jens Rittscher
- T62 Prostate Cancer Histology Synthesis using StyleGAN Latent Space Annotation**
Gagandeep B. Daroach, Savannah R. Duenweg, Michael Brehler, Allison K. Lowman, Kenneth A. Iczkowski, Kenneth M. Jacobsohn, Josiah A. Yoder, Peter S. LaViolette
- T63 RefineNet: An Automated Framework to Generate Task and Subject-Specific Brain Parcellations for Resting-State fMRI Analysis**
Naresh Nandakumar, Komal Manzoor, Shruti Agarwal, Haris I. Sair, Archana Venkataraman
- T64 Region-guided CycleGANs for Stain Transfer in Whole Slide Images**
Joseph Boyd, Irène Villa, Marie-Christine Mathieu, Eric Deutsch, Nikos Paragios, Maria Vakalopoulou, Stergios Christodoulidis
- T65 S5CL: Unifying Fully-Supervised, Self-Supervised, and Semi-Supervised Learning Through Hierarchical Contrastive Learning**
Manuel Tran, Sophia J. Wagner, Melanie Boxberg, Tingying Peng
- T66 Shape-based features of white matter fiber-tracts associated with outcome in Major Depression Disorder**
Claire Cury, Jean-Marie Batail, Julie Coloigner
- T67 Super-Focus: Domain Adaptation for Embryo Imaging via Self-Supervised Focal Plane Regression**
Chloe He, Céline Jacques, Jérôme Chambost, Jonas Malmsten, Koen Wouters, Thomas Fréour, Nikica Zaninovic, Cristina Hickman, Francisco Vasconcelos

POSTER PRESENTATION PROGRAM

- T68 Tagged-MRI Sequence to Audio Synthesis via Self Residual Attention Guided Heterogeneous Translator**
Xiaofeng Liu, Fangxu Xing, Jerry L. Prince, Jiachen Zhuo, Maureen Stone, Georges El Fakhri, Jonghye Woo
- T69 Test-time image-to-image translation ensembling improves out-of-distribution generalization in histopathology**
Marin Scalbert, Maria Vakalopoulou, Florent Couzinié-Devy
- T70 The Semi-constrained Network-Based Statistic (scNBS): integrating local and global information for brain network inference**
Wei Dai, Stephanie Noble, Dustin Scheinost
- T71 Unsupervised Contrastive Learning of Image Representations from Ultrasound Videos with Hard Negative Mining**
Soumen Basu, Somanshu Singla, Mayank Gupta, Pratyaksha Rana, Pankaj Gupta, Chetan Arora
- T72 Unsupervised Nuclei Segmentation using Spatial Organization Priors**
Loïc Le Bescond, Marvin Lerousseau, Ingrid Garberis, Fabrice André, Stergios Christodoulidis, Maria Vakalopoulou, Hugues Talbot
- T73 Visual deep learning-based explanation for neuritic plaques segmentation in Alzheimer's Disease using weakly annotated whole slide histopathological images**
Gabriel Jimenez, Anuradha Kar, Mehdi Ounissi, Léa Ingrassia, Susana Boluda, Benoît Delatour, Lev Stimmer, Daniel Racoceanu
- T74 White Matter Tracts are Point Clouds: Neuropsychological Score Prediction and Critical Region Localization via Geometric Deep Learning**
Yuqian Chen, Fan Zhang, Chaoyi Zhang, Tengfei Xue, Leo R. Zekelman, Jianzhong He, Yang Song, Nikos Makris, Yogesh Rath, Alexandra J. Golby, Weidong Cai, Lauren J. O'Donnell

POSTER PRESENTATION PROGRAM

Poster 5: Computational Physiology & Pathology (Virtual) Sept 20, 2022 (Tuesday), 14:30 - 15:30

Session Chairs: *Yuankai Huo, Vanderbilt University, United States*
Yang Song, University of New South Wales, Australia

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|-----------|---|
| TV-5-PC01 | An End-to-End Combinatorial Optimization Method for R-band Chromosome Recognition with Grouping Guided Attention
<i>Chao Xia, Jiyue Wang, Yulei Qin, Yun Gu, Bing Chen, Jie Yang</i> |
| TV-5-PC02 | Benchmarking the Robustness of Deep Neural Networks to Common Corruptions in Digital Pathology
<i>Yunlong Zhang, Yuxuan Sun, Honglin Li, Sunyi Zheng, Chenglu Zhu, Lin Yang</i> |
| TV-5-PC03 | ChrSNet: Chromosome Straightening using Self-attention Guided Networks
<i>Sunyi Zheng, Jingxiong Li, Zhongyi Shui, Chenglu Zhu, Yunlong Zhang, Pingyi Chen, Lin Yang</i> |
| TV-5-PC04 | DentalPointNet: Landmark Localization on High-Resolution 3D Digital Dental Models
<i>Yankun Lang, Xiaoyang Chen, Hannah H. Deng, Tianshu Kuang, Joshua C. Barber, Jaime Gateno, Pew-Thian Yap, James J. Xia</i> |
| TV-5-PC05 | DEUE: Delta Ensemble Uncertainty Estimation for a More Robust Estimation of Ejection Fraction
<i>Mohammad Mahdi Kazemi Esfeh, Zahra Gholami, Christina Luong, Teresa Tsang, Purang Abolmaesumi</i> |
| TV-5-PC06 | DGMIL: Distribution Guided Multiple Instance Learning for Whole Slide Image Classification
<i>Linhao Qu, Xiaoyuan Luo, Shaolei Liu, Manning Wang, Zhijian Song</i> |
| TV-5-PC07 | Discrepancy and Gradient-guided Multi-Modal Knowledge Distillation for Pathological Glioma Grading
<i>Xiaohan Xing, Zhen Chen, Meilu Zhu, Yuenan Hou, Zhifan Gao, Yixuan Yuan</i> |
| TV-5-PC08 | Distilling Knowledge from Topological Representations for Pathological Complete Response Prediction
<i>Shiyi Du, Qicheng Lao, Qingbo Kang, Yiyue Li, Zekun Jiang, Yanfeng Zhao, Kang Li</i> |
| TV-5-PC09 | End-to-End cell recognition by point annotation
<i>Zhongyi Shui, Shichuan Zhang, Chenglu Zhu, Bingchuan Wang, Pingyi Chen, Sunyi Zheng, Lin Yang</i> |

POSTER PRESENTATION PROGRAM

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| TV-5-PC10 | Extended Electrophysiological Source Imaging with Spatial Graph Filters
<i>Feng Liu, Guihong Wan, Yevgeniy R. Semenov, Patrick L. Purdon</i> |
| TV-5-PC11 | Hierarchical Brain Networks Decomposition via Prior Knowledge Guided Deep Belief Network
<i>Tianji Pang, Dajiang Zhu, Tianming Liu, Junwei Han, Shijie Zhao</i> |
| TV-5-PC12 | Identify Consistent Imaging Genomic Biomarkers for Characterizing the Survival-associated Interactions between Tumor-infiltrating Lymphocytes and Tumors
<i>Yingli Zuo, Yawen Wu, Zixiao Lu, Qi Zhu, Kun Huang, Daoqiang Zhang, Wei Shao</i> |
| TV-5-PC13 | Improved Domain Generalization for Cell Detection in Histopathology Images via Test-Time Stain Augmentation
<i>Chundan Xu, Ziqi Wen, Zhiwen Liu, Chuyang Ye</i> |
| TV-5-PC14 | Joint Region-Attention and Multi-Scale Transformer for Microsatellite Instability Detection from Whole Slide Images in Gastrointestinal Cancer
<i>Zhilong Lv, Rui Yan, Yuexiao Lin, Ying Wang, Fa Zhang</i> |
| TV-5-PC15 | Kernel Attention Transformer (KAT) for Histopathology Whole Slide Image Classification
<i>Yushan Zheng, Jun Li, Jun Shi, Fengying Xie, Zhiguo Jiang</i> |
| TV-5-PC16 | Lesion-Aware Contrastive Representation Learning for Histopathology Whole Slide Images Analysis
<i>Jun Li, Yushan Zheng, Kun Wu, Jun Shi, Fengying Xie, Zhiguo Jiang</i> |
| TV-5-PC17 | Low-Resource Adversarial Domain Adaptation for Cross-Modality Nucleus Detection
<i>Fuyong Xing, Toby C. Cornish</i> |
| TV-5-PC18 | Multimodal Contrastive Learning for Prospective Personalized Estimation of CT Organ Dose
<i>Abdullah-Al-Zubaer Imran, Sen Wang, Debashish Pal, Sandeep Dutta, Evan Zucker, Adam Wang</i> |
| TV-5-PC19 | Multiple Instance Learning with Mixed Supervision in Gleason Grading
<i>Hao Bian, Zhuchen Shao, Yang Chen, Yifeng Wang, Haoqian Wang, Jian Zhang, Yongbing Zhang</i> |
| TV-5-PC20 | Physiological Model based Deep Learning Framework for Cardiac TMP Recovery
<i>Xufeng Huang, Chengjin Yu, Huafeng Liu</i> |

POSTER PRESENTATION PROGRAM

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| TV-5-PC21 | Predicting Spatio-Temporal Human Brain Response Using fMRI
<i>Chongyue Zhao, Liang Zhan, Paul M. Thompson, Heng Huang</i> |
| TV-5-PC22 | RandStainNA: Learning Stain-Agnostic Features from Histology Slides by Bridging Stain Augmentation and Normalization
<i>Yiqing Shen, Yulin Luo, Dinggang Shen, Jing Ke</i> |
| TV-5-PC23 | ReMix: A General and Efficient Framework for Multiple Instance Learning based Whole Slide Image Classification
<i>Jiawei Yang, Hanbo Chen, Yu Zhao, Fan Yang, Yao Zhang, Lei He, Jianhua Yao</i> |
| TV-5-PC24 | RTN: Reinforced Transformer Network for Coronary CT Angiography Vessel-level Image Quality Assessment
<i>Yiting Lu, Jun Fu, Xin Li, Wei Zhou, Sen Liu, Xinxin Zhang, Wei Wu, Congfu Jia, Ying Liu, Zhibo Chen</i> |
| TV-5-PC25 | S3R: Self-supervised Spectral Regression for Hyperspectral Histopathology Image Classification
<i>Xingran Xie, Yan Wang, Qingli Li</i> |
| TV-5-PC26 | Sample hardness based gradient loss for long-tailed cervical cell detection
<i>Minmin Liu, Xuechen Li, Xiangbo Gao, Junliang Chen, Linlin Shen, Huisi Wu</i> |
| TV-5-PC27 | Semi-Supervised PR Virtual Staining for Breast Histopathological Images
<i>Bowei Zeng, Yiyang Lin, Yifeng Wang, Yang Chen, Jiuyang Dong, Xi Li, Yongbing Zhang</i> |
| TV-5-PC28 | SETMIL: Spatial Encoding Transformer-based Multiple Instance Learning for Pathological Image Analysis
<i>Yu Zhao, Zhenyu Lin, Kai Sun, Yidan Zhang, Junzhou Huang, Liansheng Wang, Jianhua Yao</i> |
| TV-5-PC29 | Spatial-hierarchical Graph Neural Network with Dynamic Structure Learning for Histological Image Classification
<i>Wentai Hou, Helong Huang, Qiong Peng, Rongshan Yu, Lequan Yu, Liansheng Wang</i> |
| TV-5-PC30 | Test Time Transform Prediction for Open Set Histopathological Image Recognition
<i>Adrian Galdran, Katherine J. Hewitt, Narmin Ghaffari Laleh, Jakob N. Kather, Gustavo Carneiro, Miguel A. González Ballester</i> |

POSTER PRESENTATION PROGRAM

- TV-5-PC31 **Transformer based multiple instance learning for weakly supervised histopathology image segmentation**
Ziniu Qian, Kailu Li, Maode Lai, Eric I-Chao Chang, Bingzheng Wei, Yubo Fan, Yan Xu
- TV-5-PC32 **Uncertainty Aware Sampling Framework of Weak-Label Learning for Histology Image Classification**
Asmaa Aljuhani, Ishya Casukhela, Jany Chan, David Liebner, Raghu Machiraju
- TV-5-PC33 **Weakly Supervised Online Action Detection for Infant General Movements**
Tongyi Luo, Jia Xiao, Chuncao Zhang, Siheng Chen, Yuan Tian, Guangjun Yu, Kang Dang, Xiaowei Ding
- TV-5-PC34 **Weakly Supervised Segmentation by Tensor Graph Learning for Whole Slide Images**
Qinghua Zhang, Zhao Chen
- TV-5-PC35 **Whole Slide Cervical Cancer Screening Using Graph Attention Network and Supervised Contrastive Learning**
Xin Zhang, Maosong Cao, Sheng Wang, Jiayin Sun, Xiangshan Fan, Qian Wang, Lichi Zhang

POSTER PRESENTATION PROGRAM

Poster 6: Image Segmentation, Registration & Reconstruction II (In Person)

Sept 20, 2022 (Tuesday), 17:00 - 18:00

*Session Chairs: Hrvoje Bogunovic, Medical University of Vienna, Austria
Jun Cheng, Agency for Science, Technology and Research, Singapore*

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|-----|--|
| T75 | A Sense of Direction in Biomedical Neural Networks
<i>Zewen Liu, Timothy F. Cootes</i> |
| T76 | A Spatiotemporal Model for Precise and Efficient Fully-automatic 3D Motion Correction in OCT
<i>Stefan Ploner, Siyu Chen, Jungeun Won, Lennart Husvogt, Katharina Breininger, Julia Schottenhamml, James Fujimoto, Andreas Maier</i> |
| T77 | Accurate and Robust Lesion RECIST Diameter Prediction and Segmentation with Transformers
<i>Youbao Tang, Ning Zhang, Yirui Wang, Shenghua He, Mei Han, Jing Xiao, Ruei-Sung Lin</i> |
| T78 | Addressing Class Imbalance in Semi-supervised Image Segmentation: A Study on Cardiac MRI
<i>Hritam Basak, Sagnik Ghosal, Ram Sarkar</i> |
| T79 | Atlas-powered deep learning (ADL) - application to diffusion weighted MRI
<i>Davood Karimi, Ali Gholipour</i> |
| T80 | CACTUSS: Common Anatomical CT-US Space for US examinations
<i>Yordanka Velikova, Walter Simson, Mehrdad Salehi, Mohammad Farid Azampour, Philipp Paprottka, Nassir Navab</i> |
| T81 | DDPNet: A novel dual-domain parallel network for low-dose CT reconstruction
<i>Rongjun Ge, Yuting He, Cong Xia, Hailong Sun, Yikun Zhang, Dianlin Hu, Sijie Chen, Yang Chen, Shuo Li, Daoqiang Zhang</i> |
| T82 | Deep filter bank regression for super-resolution of anisotropic MR brain images
<i>Samuel W. Remedios, Shuo Han, Yuan Xue, Aaron Carass, Trac D. Tran, Dzong L. Pham, Jerry L. Prince</i> |

POSTER PRESENTATION PROGRAM

- T83 Denoising for Relaxing: Unsupervised Domain Adaptive Fundus Image Segmentation without Source Data**
Zhe Xu, Donghuan Lu, Yixin Wang, Jie Luo, Dong Wei, Yefeng Zheng, Raymond Kai-yu Tong
- T84 Diffusion Models for Medical Anomaly Detection**
Julia Wolleb, Florentin Bieder, Robin Sandkühler, Philippe C. Cattin
- T85 Domain-Adaptive 3D Medical Image Synthesis: An Efficient Unsupervised Approach**
Qingqiao Hu, Hongwei Li, Jianguo Zhang
- T86 EchoCoTr: Estimation of the Left Ventricular Ejection Fraction from Spatiotemporal Echocardiography**
Rand Muhtaseb, Mohammad Yaqub
- T87 End-to-end Multi-Slice-to-Volume Concurrent Registration and Multimodal Generation**
Amaury Leroy, Marvin Lerousseau, Théophraste Henry, Alexandre Cafaro, Nikos Paragios, Vincent Grégoire, Eric Deutsch
- T88 Enhancing model generalization for substantia nigra segmentation using a test-time normalization-based method**
Tao Hu, Hayato Itoh, Masahiro Oda, Yuichiro Hayashi, Zhongyang Lu, Shinji Saiki, Nobutaka Hattori, Koji Kamagata, Shigeki Aoki, Kanako K. Kumamaru, Toshiaki Akashi, Kensaku Mori
- T89 Global Multi-modal 2D/3D Registration via Local Descriptors Learning**
Viktoria Markova, Matteo Ronchetti, Wolfgang Wein, Oliver Zettinig, Raphael Prevost
- T90 Joint Class-Affinity Loss Correction for Robust Medical Image Segmentation with Noisy Labels**
Xiaoqing Guo, Yixuan Yuan
- T91 Learning iterative optimisation for deformable image registration of lung CT with recurrent convolutional networks**
Fenja Falta, Lasse Hansen, Mattias P. Heinrich
- T92 Learning self-calibrated optic disc and cup segmentation from multi-rater annotations**
Junde Wu, Huihui Fang, Zhaowei Wang, Dalu Yang, Yehui Yang, Fangxin Shang, Wenshuo Zhou, Yanwu Xu

POSTER PRESENTATION PROGRAM

- T93 Learning-based and unrolled motion-compensated reconstruction for cardiac MR CINE imaging**
Jiazhen Pan, Daniel Rueckert, Thomas Küstner, Kerstin Hammernik
- T94 Learning-based US-MR Liver Image Registration with Spatial Priors**
Qi Zeng, Shahed Mohammed, Emily H.T. Pang, Caitlin Schneider, Mohammad Honarvar, Julio Lobo, Changhong Hu, James Jago, Gary Ng, Robert Rohling, Septimiu E. Salcudean
- T95 Leveraging Labeling Representations in Uncertainty-based Semi-supervised Segmentation**
Sukesh Adiga Vasudeva, Jose Dolz, Herve Lombaert
- T96 MCP-Net: Inter-frame Motion Correction with Patlak Regularization for Whole-body Dynamic PET**
Xueqi Guo, Bo Zhou, Xiongchao Chen, Chi Liu, Nicha C. Dvornek
- T97 Meta-hallucinator: Towards few-shot cross-modality cardiac image segmentation**
Ziyuan Zhao, Fangcheng Zhou, Zeng Zeng, Cuntai Guan, S. Kevin Zhou
- T98 Momentum Contrastive Voxel-wise Representation Learning for Semi-supervised Volumetric Medical Image Segmentation**
Chenyu You, Ruihan Zhao, Lawrence H. Staib, James S. Duncan
- T99 Multi-modal Retinal Image Registration Using a Keypoint-Based Vessel Structure Aligning Network**
Aline Sindel, Bettina Hohberger, Andreas Maier, Vincent Christlein
- T100 Multi-scale Super-resolution Magnetic Resonance Spectroscopic Imaging with Adjustable Sharpness**
Siyuan Dong, Gilbert Hangel, Wolfgang Bogner, Georg Widhalm, Karl Rössler, Siegfried Trattnig, Chenyu You, Robin de Graaf, John A. Oñofrey, James S. Duncan
- T101 OnlyCaps-Net, a capsule only based neural network for 2D and 3D semantic segmentation**
Savinien Bonheur, Franz Thaler, Michael Pienn, Horst Olschewski, Horst Bischof, Martin Urschler
- T102 Orientation-guided Graph Convolutional Network for Bone Surface Segmentation**
Aimon Rahman, Wele Gedara Chaminda Bandara, Jeya Maria Jose Valanarasu, Ilker Hacihaliloglu, Vishal M Patel

POSTER PRESENTATION PROGRAM

- T103 Patcher: Patch Transformers with Mixture of Experts for Precise Medical Image Segmentation**
Yanglan Ou, Ye Yuan, Xiaolei Huang, Stephen T.C. Wong, John Volpi, James Z. Wang, Kelvin Wong
- T104 Physiology-based simulation of the retinal vasculature enables annotation-free segmentation of OCT angiographs**
Martin J. Menten, Johannes C. Paetzold, Alina Dima, Bjoern H. Menze, Benjamin Knier, Daniel Rueckert
- T105 SD-LayerNet: Semi-supervised retinal layer segmentation in OCT using disentangled representation with anatomical priors**
Botond Fazekas, Guilherme Aresta, Dmitrii Lachinov, Sophie Riedl, Julia Mai, Ursula Schmidt-Erfurth, Hrvoje Bogunović
- T106 Spatio-temporal motion correction and iterative reconstruction of in-utero fetal fMRI**
Athena Taymourtash, Hamza Kebiri, Ernst Schwartz, Karl-Heinz Nenning, Sébastien Tourbier, Gregor Kasprian, Daniela Prayer, Meritxell Bach Cuadra, Georg Langs
- T107 Stroke lesion segmentation from low-quality and few-shot MRIs via similarity-weighted self-ensembling framework**
Dong Zhang, Raymond Confidence, Udunna Anazodo
- T108 The Dice loss in the context of missing or empty labels: introducing Φ and ϵ**
Sofie Tilborghs, Jeroen Bertels, David Robben, Dirk Vandermeulen, Frederik Maes
- T109 UNeXt: MLP-based Rapid Medical Image Segmentation Network**
Jeya Maria Jose Valanarasu, Vishal M Patel
- T110 Weakly Supervised Volumetric Image Segmentation with Deformed Templates**
Udaranga Wickramasinghe, Patrick Jensen, Mian Shah, Jiancheng Yang, Pascal Fua

POSTER PRESENTATION PROGRAM

Poster 6: Image Segmentation, Registration & Reconstruction II (Virtual)

Sept 20, 2022 (Tuesday), 17:00 - 18:00

Session Chairs: *Hrvoje Bogunovic, Medical University of Vienna, Austria*
Jun Cheng, Agency for Science, Technology and Research, Singapore

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|-----------|--|
| TV-6-PC01 | A Hybrid Propagation Network for Interactive Volumetric Image Segmentation
<i>Luyue Shi, Xuanye Zhang, Yunbi Liu, Xiaoguang Han</i> |
| TV-6-PC02 | A Transformer-Based Iterative Reconstruction Model for Sparse-View CT Reconstruction
<i>Wenjun Xia, Ziyuan Yang, Qizheng Zhou, Zexin Lu, Zhongxian Wang, Yi Zhang</i> |
| TV-6-PC03 | Accelerated pseudo 3D dynamic speech MR imaging at 3T using unsupervised deep variational manifold learning
<i>Rushdi Zahid Rusho, Qing Zou, Wahidul Alam, Subin Erattakulangara, Mathews Jacob, Sajan Goud Lingala</i> |
| TV-6-PC04 | Carbon Footprint of Selecting and Training Deep Learning Models for Medical Image Analysis
<i>Raghavendra Selvan, Nikhil Bhagwat, Lasse F. Wolff Anthony, Benjamin Kanding, Erik B. Dam</i> |
| TV-6-PC05 | Classification-aided High-quality PET Image Synthesis via Bidirectional Contrastive GAN with Shared Information Maximization
<i>Yuchen Fei, Chen Zu, Zhengyang Jiao, Xi Wu, Jiliu Zhou, Dinggang Shen, Yan Wang</i> |
| TV-6-PC06 | Collaborative Quantization Embeddings for Intra-Subject Prostate MR Image Registration
<i>Ziyi Shen, Qianye Yang, Yuming Shen, Francesco Giganti, Vasilis Stavrinos, Richard Fan, Caroline Moore, Mirabela Rusu, Geoffrey Sonn, Philip Torr, Dean Barratt, Yipeng Hu</i> |
| TV-6-PC07 | Context-aware Voxel-wise Contrastive Learning for Label Efficient Multi-organ Segmentation
<i>Peng Liu, Guoyan Zheng</i> |
| TV-6-PC08 | Contrastive Re-localization and History Distillation in Federated CMR Segmentation
<i>Xiaoming Qi, Guanyu Yang, Yuting He, Wangyan Liu, Ali Islam, Shuo Li</i> |

POSTER PRESENTATION PROGRAM

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|-----------|---|
| TV-6-PC09 | <p>Deep Reinforcement Learning for Small Bowel Path Tracking using Different Types of Annotations
 <i>Seung Yeon Shin, Ronald M. Summers</i></p> |
| TV-6-PC10 | <p>DS3-Net: Difficulty-perceived Common-to-T1ce Semi-Supervised Multimodal MRI Synthesis Network
 <i>Ziqi Huang, Li Lin, Pujin Cheng, Kai Pan, Xiaoying Tang</i></p> |
| TV-6-PC12 | <p>Fast Spherical Mapping of Cortical Surface Meshes using Deep Unsupervised Learning
 <i>Fenqiang Zhao, Zhengwang Wu, Li Wang, Weili Lin, Gang Li</i></p> |
| TV-6-PC13 | <p>iSegFormer: Interactive Segmentation via Transformers with Application to 3D Knee MR Images
 <i>Qin Liu, Zhenlin Xu, Yining Jiao, Marc Niethammer</i></p> |
| TV-6-PC14 | <p>Learning towards Synchronous Network Memorizability and Generalizability for Continual Segmentation across Multiple Sites
 <i>Jingyang Zhang, Peng Xue, Ran Gu, Yuning Gu, Mianxin Liu, Yongsheng Pan, Zhiming Cui, Jiawei Huang, Lei Ma, Dinggang Shen</i></p> |
| TV-6-PC15 | <p>MaNi: Maximizing Mutual Information for Nuclei Cross-Domain Unsupervised Segmentation
 <i>Yash Sharma, Sana Syed, Donald E. Brown</i></p> |
| TV-6-PC16 | <p>Mapping in Cycles: Dual-Domain PET-CT Synthesis Framework with Cycle-Consistent Constraints
 <i>Jiadong Zhang, Zhiming Cui, Caiwen Jiang, Jingyang Zhang, Fei Gao, Dinggang Shen</i></p> |
| TV-6-PC17 | <p>Multimodal Brain Tumor Segmentation Using Contrastive Learning based Feature Comparison with Monomodal Normal Brain Images
 <i>Huabing Liu, Dong Nie, Dinggang Shen, Jinda Wang, Zhenyu Tang</i></p> |
| TV-6-PC18 | <p>NestedFormer: Nested Modality-Aware Transformer for Brain Tumor Segmentation
 <i>Zhaohu Xing, Lequan Yu, Liang Wan, Tong Han, Lei Zhu</i></p> |
| TV-6-PC19 | <p>Neural Annotation Refinement: Development of a New 3D Dataset for Adrenal Gland Analysis
 <i>Jiancheng Yang, Rui Shi, Udaranga Wickramasinghe, Qikui Zhu, Bingbing Ni, Pascal Fua</i></p> |

POSTER PRESENTATION PROGRAM

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| TV-6-PC20 | Non-iterative Coarse-to-fine Registration based on Single-pass Deep Cumulative Learning
<i>Mingyuan Meng, Lei Bi, Dagan Feng, Jinman Kim</i> |
| TV-6-PC21 | One-Shot Segmentation of Novel White Matter Tracts via Extensive Data Augmentation
<i>Wan Liu, Qi Lu, Zhizheng Zhuo, Yaou Liu, Chuyang Ye</i> |
| TV-6-PC22 | Orientation-Shared Convolution Representation for CT Metal Artifact Learning
<i>Hong Wang, Qi Xie, Yuexiang Li, Yawen Huang, Deyu Meng, Yefeng Zheng</i> |
| TV-6-PC23 | Physically Inspired Constraint for Unsupervised Regularized Ultrasound Elastography
<i>Ali K. Z. Tehrani, Hassan Rivaz</i> |
| TV-6-PC24 | Position-prior Clustering-based Self-attention Module for Knee Cartilage Segmentation
<i>Dong Liang, Jun Liu, Kuanquan Wang, Gongning Luo, Wei Wang, Shuo Li</i> |
| TV-6-PC25 | Rethinking Breast Lesion Segmentation in Ultrasound: A New Video Dataset and A Baseline Network
<i>Jialu Li, Qingqing Zheng, Mingshuang Li, Ping Liu, Qiong Wang, Litao Sun, Lei Zhu</i> |
| TV-6-PC26 | Rib Suppression in Digital Chest Tomosynthesis
<i>Yihua Sun, Qingsong Yao, Yuanyuan Lyu, Jianji Wang, Yi Xiao, Hongen Liao, S. Kevin Zhou</i> |
| TV-6-PC27 | RPLHR-CT Dataset and Transformer Baseline for Volumetric Super-Resolution from CT Scans
<i>Pengxin Yu, Haoyue Zhang, Han Kang, Wen Tang, Corey W. Arnold, Rongguo Zhang</i> |
| TV-6-PC28 | Scribble2D5: Weakly-Supervised Volumetric Image Segmentation via Scribble Annotations
<i>Qihui Chen, Yi Hong</i> |
| TV-6-PC29 | Scribble-Supervised Medical Image Segmentation via Dual-Branch Network and Dynamically Mixed Pseudo Labels Supervision
<i>Xiangde Luo, Minhao Hu, Wenjun Liao, Shuwei Zhai, Tao Song, Guotai Wang, Shaoting Zhang</i> |

POSTER PRESENTATION PROGRAM

- TV-6-PC30 **Semi-supervised Learning for Nerve Segmentation in Corneal Confocal Microscope Photography**
Jun Wu, Bo Shen, Hanwen Zhang, Jianing Wang, Qi Pan, Jianfeng Huang, Lixin Guo, Jianchun Zhao, Gang Yang, Xirong Li, Dayong Ding
- TV-6-PC31 **Stepwise Feature Fusion: Local Guides Global**
Jinfeng Wang, Qiming Huang, Feilong Tang, Jia Meng, Jionglong Su, Sifan Song
- TV-6-PC32 **Structure-consistent Restoration Network for Cataract Fundus Image Enhancement**
Heng Li, Haofeng Liu, Huazhu Fu, Hai Shu, Yitian Zhao, Xiaoling Luo, Yan Hu, Jiang Liu
- TV-6-PC33 **Task-relevant Feature Replenishment for Cross-centre Polyp Segmentation**
Yutian Shen, Ye Lu, Xiao Jia, Fan Bai, Max Q.-H. Meng
- TV-6-PC34 **Transformer Lesion Tracker**
Wen Tang, Han Kang, Haoyue Zhang, Pengxin Yu, Corey W. Arnold, Rongguo Zhang
- TV-6-PC35 **TransFusion: Multi-view Divergent Fusion for Medical Image Segmentation with Transformers**
Di Liu, Yunhe Gao, Qilong Zhangli, Ligong Han, Xiaoxiao He, Zhaoyang Xia, Song Wen, Qi Chang, Zhennan Yan, Mu Zhou, Dimitris Metaxas
- TV-6-PC36 **UASSR:Unsupervised Arbitrary Scale Super-resolution Reconstruction of Single Anisotropic 3D images via Disentangled Representation Learning?**
Jiale Wang, Runze Wang, Rong Tao, Guoyan Zheng
- TV-6-PC37 **Uncertainty-aware Cascade Network for Ultrasound Image Segmentation with Ambiguous Boundary**
Yanting Xie, Hongen Liao, Daoqiang Zhang, Fang Chen
- TV-6-PC38 **Weakly Supervised MR-TRUS Image Synthesis for Brachytherapy of Prostate Cancer**
Yunkui Pang, Xu Chen, Yunzhi Huang, Pew-Thian Yap, Jun Lian
- TV-6-PC39 **What Makes for Automatic Reconstruction of Pulmonary Segments**
Kaiming Kuang, Li Zhang, Jingyu Li, Hongwei Li, Jiajun Chen, Bo Du, Jiancheng Yang

POSTER PRESENTATION PROGRAM

Poster 7: Image Segmentation, Registration & Reconstruction III (In Person)

Sept 21, 2022 (Wednesday), 10:30 - 11:30

Session Chairs: *Mattias Heinrich, University of Lübeck, Germany*
Herve Lombaert, ETS Montreal, Canada

- W1 **A Deep-Discrete Learning Framework for Spherical Surface Registration**
Mohamed A. Suliman, Logan Z. J. Williams, Abdulah Fawaz, Emma C. Robinson
- W2 **A Novel Knowledge Keeper Network for 7T-Free But 7T-Guided Brain Tissue Segmentation**
Jieun Lee, Kwanseok Oh, Dinggang Shen, Heung-Il Suk
- W3 **A Robust Volumetric Transformer for Accurate 3D Tumor Segmentation**
Himashi Peiris, Munawar Hayat, Zhaolin Chen, Gary Egan, Mehrtash Harandi
- W4 **ACT: Semi-supervised Domain-adaptive Medical Image Segmentation with Asymmetric Co-Training**
Xiaofeng Liu, Fangxu Xing, Nadya Shusharina, Ruth Lim, C.-C. Jay Kuo, Georges El Fakhri, Jonghye Woo
- W5 **Adapting the Mean Teacher for keypoint-based lung registration under geometric domain shifts**
Alexander Bigalke, Lasse Hansen, Mattias P. Heinrich
- W6 **CorticalFlow++: Boosting Cortical Surface Reconstruction Accuracy, Regularity, and Interoperability**
Rodrigo Santa Cruz, Léo Lebrat, Darren Fu, Pierrick Bourgeat, Jurgen Fripp, Clinton Fookes, Olivier Salvado
- W7 **DeepPyramid: Enabling Pyramid View and Deformable Pyramid Reception for Semantic Segmentation in Cataract Surgery Videos**
Negin Ghamsarian, Mario Taschwer, Raphael Schnitman, Klaus Schoeffmann
- W8 **DeStripe: A Self2Self Spatio-Spectral Graph Neural Network with Unfolded Hessian for Stripe Artifact Removal in Light-sheet Microscopy**
Yu Liu, Kurt Weiss, Nassir Navab, Carsten Marr, Jan Huiskens, Tingying Peng

POSTER PRESENTATION PROGRAM

- W9** **DOMINO: Domain-aware Model Calibration in Medical Image Segmentation**
Skylar E. Stolte, Kyle Volle, Aprinda Indahlstari, Alejandro Albizu, Adam J. Woods, Kevin Brink, Matthew Hale, Ruogu Fang
- W10** **Double-Uncertainty Guided Spatial and Temporal Consistency Regularization Weighting for Learning-based Abdominal Registration**
Zhe Xu, Jie Luo, Donghuan Lu, Jiangpeng Yan, Sarah Frisken, Jayender Jagadeesan, William M. Wells III, Xiu Li, Yefeng Zheng, Raymond Kai-yu Tong
- W11** **Edge-oriented Point-cloud Transformer for 3D Intracranial Aneurysm Segmentation**
Yifan Liu, Jie Liu, Yixuan Yuan
- W12** **Electron Microscope Image Registration using Laplacian Sharpening Transformer U-Net**
Kunzi Xie, Yixing Yang, Maurice Pagnucco, Yang Song
- W13** **Embedding Gradient-based Optimization in Image Registration Networks**
Huaqi Qiu, Kerstin Hammernik, Chen Qin, Chen Chen, Daniel Rueckert
- W14** **Fast Unsupervised Brain Anomaly Detection and Segmentation with Diffusion Models**
Walter H. L. Pinaya, Mark S. Graham, Robert Gray, Pedro F. da Costa, Petru-Daniel Tudosiu, Paul Wright, Yee H. Mah, Andrew D. MacKinnon, James T. Teo, Rolf Jager, David Werring, Geraint Rees, Parashkev Nachev, Sebastien Ourselin, M. Jorge Cardoso
- W15** **FSE Compensated Motion Correction for MRI Using Data Driven Methods**
Brett Levac, Sidharth Kumar, Sofia Kardoni, Jonathan I. Tamir
- W16** **Identifying and Combating Bias in Segmentation Networks by leveraging multiple resolutions**
Leonie Henschel, David Kügler, Derek S Andrews, Christine W Nordahl, Martin Reuter
- W17** **Implicit Neural Representations for Medical Imaging Segmentation**
Muhammad Osama Khan, Yi Fang
- W18** **Invertible Sharpening Network for MRI Reconstruction Enhancement**
Siyuan Dong, Eric Z. Chen, Lin Zhao, Xiao Chen, Yikang Liu, Terrence Chen, Shanhui Sun

POSTER PRESENTATION PROGRAM

- W19 **MaxStyle: Adversarial Style Composition for Robust Medical Image Segmentation**
Chen Chen, Zeju Li, Cheng Ouyang, Matthew Sinclair, Wenjia Bai, Daniel Rueckert
- W20 **Mesh-based 3D Motion Tracking in Cardiac MRI using Deep Learning**
Qingjie Meng, Wenjia Bai, Tianrui Liu, Declan P O'Regan, Daniel Rueckert
- W21 **Noise transfer for unsupervised domain adaptation of retinal OCT images**
Valentin Koch, Olle Holmberg, Hannah Spitzer, Johannes Schiefelbein, Ben Asani, Michael Hafner, Fabian J Theis
- W22 **Only-Train-Once MR Fingerprinting for Magnetization Transfer Contrast Quantification**
Beomgu Kang, Hye-Young Heo, HyunWook Park
- W23 **Optimal MRI Undersampling Patterns for Pathology Localization**
Artem Razumov, Oleg Y. Rogov, Dmitry V. Dylov
- W24 **Patch-wise Deep Metric Learning for Unsupervised Low-Dose CT Denoising**
Chanyong Jung, Joonhyung Lee, Sunkyoung You, Jong Chul Ye
- W25 **Progressive Subsampling for Oversampled Data - Application to Quantitative MRI**
Stefano B. Blumberg, Hongxiang Lin, Francesco Grussu, Yukun Zhou, Matteo Figini, Daniel C. Alexander
- W26 **Region Proposal Rectification Towards Robust Instance Segmentation of Biological Images**
Qilong Zhangli, Jingru Yi, Di Liu, Xiaoxiao He, Zhaoyang Xia, Qi Chang, Ligong Han, Yunhe Gao, Song Wen, Haiming Tang, He Wang, Mu Zhou, Dimitris Metaxas
- W27 **Robust Segmentation of Brain MRI in the Wild with Hierarchical CNNs and no Retraining**
Benjamin Billot, Colin Magdama, Steven E. Arnold, Sudeshna Das, Juan Eugenio Iglesias
- W28 **Scale-Equivariant Unrolled Neural Networks for Data-Efficient Accelerated MRI Reconstruction**
Beliz Gunel, Arda Sahiner, Arjun D. Desai, Akshay S. Chaudhari, Shreyas Vasanawala, Mert Pilanci, John Pauly

POSTER PRESENTATION PROGRAM

- W29 **SeATrans: Learning Segmentation-Assisted diagnosis model via Transformer**
Junde Wu, Huihui Fang, Fangxin Shang, Dalu Yang, Zhaowei Wang, Jing Gao, Yehui Yang, Yanwu Xu
- W30 **Supervised Deep Learning for Head Motion Correction in PET**
Tianyi Zeng, Jiazhen Zhang, Enette Revilla, Eléonore V. Lieffrig, Xi Fang, Yihuan Lu, John A. Onofrey
- W31 **TGANet: Text-guided attention for improved polyp segmentation**
Nikhil Kumar Tomar, Debesh Jha, Ulas Bagci, Sharib Ali
- W32 **Transformer based feature fusion for left ventricle segmentation in 4D flow MRI**
Xiaowu Sun, Li-Hsin Cheng, Sven Plein, Pankaj Garg, Rob J. van der Geest
- W33 **Undersampled MRI Reconstruction with Side Information-Guided Normalisation**
Xinwen Liu, Jing Wang, Cheng Peng, Shekhar S. Chandra, Feng Liu, S. Kevin Zhou
- W34 **Unsupervised Deep Non-Rigid Alignment by Low-Rank Loss and Multi-Input Attention**
Takanori Asanomi, Kazuya Nishimura, Heon Song, Junya Hayashida, Hiroyuki Sekiguchi, Takayuki Yagi, Imari Sato, Ryoma Bise
- W35 **Unsupervised Domain Adaptive Fundus Image Segmentation with Category-level Regularization**
Wei Feng, Lin Wang, Lie Ju, Xin Zhao, Xin Wang, Xiaoyu Shi, Zongyuan Ge
- W36 **Y-Net: A Spatiospectral Dual-Encoder Network for Medical Image Segmentation**
Azade Farshad, Yousef Yeganeh, Peter Gehlbach, Nassir Navab

POSTER PRESENTATION PROGRAM

Poster 7: Image Segmentation, Registration & Reconstruction III (Virtual)

Sept 21, 2022 (Wednesday), 10:30 - 11:30

*Session Chairs: Matthias Heinrich, University of Lübeck, Germany
Herve Lombaert, ETS Montreal, Canada*

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|-----------|--|
| WV-7-PC01 | <p>A Geometry-Constrained Deformable Attention Network for Aortic Segmentation</p> <p><i>Weiyuan Lin, Hui Liu, Lin Gu, Zhifan Gao</i></p> |
| WV-7-PC02 | <p>AANet: Artery-Aware Network for Pulmonary Embolism Detection in CTPA Images</p> <p><i>Jia Guo, Xinglong Liu, Yinan Chen, Shaoting Zhang, Guangyu Tao, Hong Yu, Huiyuan Zhu, Wenhui Lei, Huiqi Li, Na Wang</i></p> |
| WV-7-PC03 | <p>BoxPolyp: Boost Generalized Polyp Segmentation using Extra Coarse Bounding Box Annotations</p> <p><i>Jun Wei, Yiwen Hu, Guanbin Li, Shuguang Cui, S. Kevin Zhou, Zhen Li</i></p> |
| WV-7-PC04 | <p>Clinical-realistic Annotation for Histopathology Images with Probabilistic Semi-supervision: A Worst-case Study</p> <p><i>Ziyue Xu, Andriy Myronenko, Dong Yang, Holger R. Roth, Can Zhao, Xiaosong Wang, Daguang Xu</i></p> |
| WV-7-PC05 | <p>ConTrans: Improving Transformer with Convolutional Attention for Medical Image Segmentation</p> <p><i>Ailiang Lin, Jiayu Xu, Jinxing Li, Guangming Lu</i></p> |
| WV-7-PC06 | <p>Curvature-enhanced Implicit Function Network for High-quality Tooth Model Generation from CBCT Images</p> <p><i>Yu Fang, Zhiming Cui, Lei Ma, Lanzhuju Mei, Bojun Zhang, Yue Zhao, Zhihao Jiang, Yiqiang Zhan, Yongsheng Pan, Min Zhu, Dinggang Shen</i></p> |
| WV-7-PC07 | <p>DA-Net: Dual Branch Transformer and Adaptive Strip Upsampling for Retinal Vessels Segmentation</p> <p><i>Changwei Wang, Rongtao Xu, Shibiao Xu, Weiliang Meng, Xiaopeng Zhang</i></p> |
| WV-7-PC08 | <p>Decoupling Predictions in Distributed Learning for Multi-Center Left Atrial MRI Segmentation</p> <p><i>Zheyao Gao, Lei Li, Fuping Wu, Sihan Wang, Xiahai Zhuang</i></p> |

POSTER PRESENTATION PROGRAM

- WV-7-PC09 Deep-learning Based T1 and T2 Quantification from Undersampled Magnetic Resonance Fingerprinting Data to Track Tracer Kinetics in Small Laboratory Animals**
Yuning Gu, Yongsheng Pan, Zhengnan Fang, Jingyang Zhang, Peng Xue, Mianxin Liu, Yuran Zhu, Lei Ma, Charlie Androjna, Xin Yu, Dinggang Shen
- WV-7-PC10 Deformer: Towards Displacement Field Learning for Unsupervised Medical Image Registration**
Jiashun Chen, Donghuan Lu, Yu Zhang, Dong Wei, Munan Ning, Xinyu Shi, Zhe Xu, Yefeng Zheng
- WV-7-PC11 Domain Adaptive Mitochondria Segmentation via Enforcing Inter-Section Consistency**
Wei Huang, Xiaoyu Liu, Zhen Cheng, Yueyi Zhang, Zhiwei Xiong
- WV-7-PC12 Domain Specific Convolution and High Frequency Reconstruction based Unsupervised Domain Adaptation for Medical Image Segmentation**
Shishuai Hu, Zehui Liao, Yong Xia
- WV-7-PC13 Dual-Branch Squeeze-Fusion-Excitation Module for Cross-Modality Registration of Cardiac SPECT and CT**
Xiongchao Chen, Bo Zhou, Huidong Xie, Xueqi Guo, Jiazhen Zhang, Albert J. Sinusas, John A. Onofrey, Chi Liu
- WV-7-PC14 Frequency-Aware Inverse-Consistent Deep Learning for OCT-Angiogram Super-Resolution**
Weiwen Zhang, Dawei Yang, Carol Y. Cheung, Hao Chen
- WV-7-PC15 Graph-based Compression of Incomplete 3D Photoacoustic Data**
Weihang Liao, Yinqiang Zheng, Hiroki Kajita, Kazuo Kishi, Imari Sato
- WV-7-PC16 Hybrid Graph Transformer for Tissue Microstructure Estimation with Undersampled Diffusion MRI Data**
Geng Chen, Haotian Jiang, Jiannan Liu, Jiquan Ma, Hui Cui, Yong Xia, Pew-Thian Yap
- WV-7-PC17 Joint Modeling of Image and Label Statistics for Enhancing Model Generalizability of Medical Image Segmentation**
Shangqi Gao, Hangqi Zhou, Yibo Gao, Xiaohai Zhuang
- WV-7-PC18 Learning Incrementally to Segment Multiple Organs in a CT Image**
Pengbo Liu, Xia Wang, Mengsi Fan, Hongli Pan, Minmin Yin, Xiaohong Zhu, Dandan Du, Xiaoying Zhao, Li Xiao, Lian Ding, Xingwang Wu, S. Kevin Zhou

POSTER PRESENTATION PROGRAM

- WV-7-PC19 **LiftReg: Limited Angle 2D/3D Deformable Registration**
Lin Tian, Yueh Z. Lee, Raúl San José Estépar, Marc Niethammer
- WV-7-PC20 **Local-Region and Cross-Dataset Contrastive Learning for Retinal Vessel Segmentation**
Rui Xu, Jiaxin Zhao, Xincheng Ye, Pengcheng Wu, Zhihui Wang, Haojie Li, Yen-Wei Chen
- WV-7-PC21 **Low-Dose CT Reconstruction via Dual-Domain Learning and Controllable Modulation**
Xincheng Ye, Zheng Sun, Rui Xu, Zhihui Wang, Haojie Li
- WV-7-PC22 **MRI Reconstruction by Completing Under-sampled K-space Data with Learnable Fourier Interpolation**
Qiaoqiao Ding, Xiaoqun Zhang
- WV-7-PC23 **Multiscale Unsupervised Retinal Edema Area Segmentation in OCT Images**
Wenguang Yuan, Donghuan Lu, Dong Wei, Munan Ning, Yefeng Zheng
- WV-7-PC24 **NerveFormer: A Cross-Sample Aggregation Network for Corneal Nerve Segmentation**
Jiayu Chen, Lei Mou, Shaodong Ma, Huazhu Fu, Lijun Guo, Yalin Zheng, Jiong Zhang, Yitian Zhao
- WV-7-PC25 **Online Easy Example Mining for Weakly-supervised Gland Segmentation from Histology Images**
Yi Li, Yiduo Yu, Yiwen Zou, Tianqi Xiang, Xiaomeng Li
- WV-7-PC26 **PET denoising and uncertainty estimation based on NVAE model using quantile regression loss**
Jianan Cui, Yutong Xie, Anand A. Joshi, Kuang Gong, Kyungsang Kim, Young-Don Son, Jong-Hoon Kim, Richard Leahy, Huafeng Liu, Quanzheng Li
- WV-7-PC27 **Segmentation of Whole-brain Tractography: A Deep Learning Algorithm Based on 3D Raw Curve Points**
Logiraj Kumaralingam, Kokul Thanikasalam, Sittampalam Sotheeswaran, Jeyasuthan Mahadevan, Nagulan Ratnarajah
- WV-7-PC28 **SelfMix: A Self-adaptive Data Augmentation Method for Lesion Segmentation**
Qikui Zhu, Yanqing Wang, Lei Yin, Jiancheng Yang, Fei Liao, Shuo Li

POSTER PRESENTATION PROGRAM

- WV-7-PC29 **Self-Rating Curriculum Learning for Localization and Segmentation of Tuberculosis on Chest Radiograph**
Kunlei Hong, Lin Guo, Yuan-ming Fleming Lure
- WV-7-PC30 **Self-Supervised Pre-Training for Nuclei Segmentation**
Mohammad Minhazul Haq, Junzhou Huang
- WV-7-PC31 **Semi-Supervised Spatial Temporal Attention Network for Video Polyp Segmentation**
Xinkai Zhao, Zhenhua Wu, Shuangyi Tan, De-Jun Fan, Zhen Li, Xiang Wan, Guanbin Li
- WV-7-PC32 **TransEM: Residual Swin-Transformer based regularized PET image reconstruction**
Rui Hu, Huafeng Liu
- WV-7-PC33 **Transforming the Interactive Segmentation for Medical Imaging**
Wentao Liu, Chaofan Ma, Yuhuan Yang, Weidi Xie, Ya Zhang
- WV-7-PC34 **Trichomonas Vaginalis Segmentation in Microscope Images**
Lin Li, Jingyi Liu, Shuo Wang, Xunkun Wang, Tian-Zhu Xiang
- WV-7-PC35 **Uncertainty-Guided Lung Nodule Segmentation with Feature-Aware Attention**
Han Yang, Lu Shen, Mengke Zhang, Qiuli Wang
- WV-7-PC36 **Usable Region Estimate for Assessing Practical Usability of Medical Image Segmentation Models**
Yizhe Zhang, Suraj Mishra, Peixian Liang, Hao Zheng, Danny Z. Chen
- WV-7-PC37 **Vol2Flow: Segment 3D Volumes using a Sequence of Registration Flows**
Adeleh Bitarafan, Mohammad Farid Azampour, Kian Bakhtari, Mahdieh Soleymani Baghshah, Matthias Keicher, Nassir Navab
- WV-7-PC38 **WavTrans: Synergizing Wavelet and Cross-Attention Transformer for Multi-Contrast MRI Super-resolution**
Guangyuan Li, Jun Lyu, Chengyan Wang, Qi Dou, Jing Qin
- WV-7-PC39 **Online Reflective Learning for Robust Medical Image Segmentation**
Yuhao Huang, Xin Yang, Xiaoqiong Huang, Jiamin Liang, Xinrui Zhou, Cheng Chen, Haoran Dou, Xindi Hu, Yan Cao, Dong Ni

POSTER PRESENTATION PROGRAM

Poster 8: Machine Learning Algorithms and Applications (In Person) Sept 21, 2022 (Wednesday), 15:00 - 16:00

Session Chairs: *Ehsan Adeli, Stanford University, United States*
Xiaoxiao Li, University of British Columbia, Canada

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| W37 | Bayesian Pseudo Labels: Expectation Maximization for Robust and Efficient Semi-Supervised Segmentation
<i>Mou-Cheng Xu, Yukun Zhou, Chen Jin, Marius de Groot, Daniel C. Alexander, Neil P. Oxtoby, Yipeng Hu, Joseph Jacob</i> |
| W38 | Calibration of Medical Imaging Classification Systems with Weight Scaling
<i>Lior Frenkel, Jacob Goldberger</i> |
| W39 | Characterization of brain activity patterns across states of consciousness based on variational auto-encoders
<i>Chloé Gomez, Antoine Grigis, Lynn Uhrig, Béchir Jarraya</i> |
| W40 | Class Impression for Data-free Incremental Learning
<i>Sana Ayromlou, Purang Abolmaesumi, Teresa Tsang, Xiaoxiao Li</i> |
| W41 | Conditional VAEs for confound removal and normative modelling of neurodegenerative diseases
<i>Ana Lawry Aguila, James Chapman, Mohammed Janahi, Andre Altmann</i> |
| W42 | Consistency-preserving Visual Question Answering in Medical Imaging
<i>Sergio Tascon-Morales, Pablo Márquez-Neila, Raphael Sznitman</i> |
| W43 | Contrastive Functional Connectivity Graph Learning for Population-based fMRI Classification
<i>Xuesong Wang, Lina Yao, Islem Rekik, Yu Zhang</i> |
| W44 | CRISP - Reliable Uncertainty Estimation for Medical Image Segmentation
<i>Thierry Judge, Olivier Bernard, Mihaela Porumb, Agisilaos Chartsias, Arian Beqiri, Pierre-Marc Jodoin</i> |
| W45 | Deep Multimodal Guidance for Medical Image Classification
<i>Mayur Mallya, Ghassan Hamarneh</i> |
| W46 | Dual-HINet: Dual Hierarchical Integration Network of Multigraphs for Connectional Brain Template Learning
<i>Fatih Said Duran, Abdurrahman Beyaz, Islem Rekik</i> |

POSTER PRESENTATION PROGRAM

- W47 **Dynamic Bank Learning for Semi-supervised Federated Image Diagnosis with Class Imbalance**
Meirui Jiang, Hongzheng Yang, Xiaoxiao Li, Quande Liu, Pheng-Ann Heng, Qi Dou
- W48 **EchoGNN: Explainable Ejection Fraction Estimation with Graph Neural Networks**
Masoud Mokhtari, Teresa Tsang, Purang Abolmaesumi, Renjie Liao
- W49 **Efficient Bayesian Uncertainty Estimation for nnU-Net**
Yidong Zhao, Changchun Yang, Artur Schweidtmann, Qian Tao
- W50 **Estimating Model Performance under Domain Shifts with Class-Specific Confidence Scores**
Zeju Li, Konstantinos Kamnitsas, Mobarakol Islam, Chen Chen, Ben Glocker
- W51 **Explaining Chest X-ray Pathologies in Natural Language**
Maxime Kayser, Cornelius Emde, Oana-Maria Camburu, Guy Parsons, Bartłomiej Papiez, Thomas Lukasiewicz
- W52 **Exploring Smoothness and Class-Separation for Semi-supervised Medical Image Segmentation**
Yicheng Wu, Zhonghua Wu, Qianyi Wu, Zongyuan Ge, Jianfei Cai
- W53 **Feature robustness and sex differences in medical imaging: a case study in MRI-based Alzheimer's disease detection**
Eike Petersen, Aasa Feragen, Maria Luise da Costa Zemsch, Anders Henriksen, Oskar Eiler Wiese Christensen, Melanie Ganz
- W54 **FedHarmony: Unlearning Scanner Bias with Distributed Data**
Nicola K. Dinsdale, Mark Jenkinson, Ana I. L. Namburete
- W55 **Few-shot Generation of Personalized Neural Surrogates for Cardiac Simulation via Bayesian Meta-Learning**
Xiajun Jiang, Zhiyuan Li, Ryan Missel, Md Shakil Zaman, Brian Zenger, Wilson W. Good, Rob S. MacLeod, John L. Sapp, Linwei Wang
- W56 **fMRI Neurofeedback Learning Patterns are Predictive of Personal and Clinical Traits**
Rotem Leibovitz, Jhonathan Osin, Lior Wolf, Guy Gurevitch, Talma Hendler
- W57 **Improving Trustworthiness of AI Disease Severity Rating in Medical Imaging with Ordinal Conformal Prediction Sets**
Charles Lu, Anastasios N. Angelopoulos, Stuart Pomerantz

POSTER PRESENTATION PROGRAM

- W58 Interpretable Graph Neural Networks for Connectome-Based Brain Disorder Analysis**
Hejie Cui, Wei Dai, Yanqiao Zhu, Xiaoxiao Li, Lifang He, Carl Yang
- W59 Layer Ensembles: A Single-Pass Uncertainty Estimation in Deep Learning for Segmentation**
Kaisar Kushibar, Victor Campello, Lidia Garrucho, Akis Linardos, Petia Radeva, Karim Lekadir
- W60 Learn to Ignore: Domain Adaptation for Multi-Site MRI Analysis**
Julia Wolleb, Robin Sandkühler, Florentin Bieder, Muhamed Barakovic, Nouchine Hadjikhani, Athina Papadopoulou, Özgür Yaldizli, Jens Kuhle, Cristina Granziera, Philippe C. Cattin
- W61 Multi-site Normative Modeling of Diffusion Tensor Imaging Metrics Using Hierarchical Bayesian Regression**
Julio E. Villalón-Reina, Clara A. Moreau, Talia M. Nir, Neda Jahanshad, Simons Variation in Individuals Project Consortium, Anne Maillard, David Romascano, Bogdan Draganski, Sarah Lippé, Carrie E. Bearden, Seyed Mostafa Kia, Andre F. Marquand, Sebastien Jacquemont, Paul M. Thompson
- W62 Nonlinear Conditional Time-varying Granger Causality of Task fMRI via Deep Stacking Networks and Adaptive Convolutional Kernels**
Kai-Cheng Chuang, Sreekrishna Ramakrishnapillai, Lydia Bazzano, Owen Carmichael
- W63 On the Uncertain Single-View Depths in Colonoscopies**
Javier Rodriguez-Puigvert, David Recasens, Javier Civera, Ruben Martinez-Cantin
- W64 Semi-supervised learning with data harmonisation for biomarker discovery from resting state fMRI**
Yi Hao Chan, Wei Chee Yew, Jagath C. Rajapakse
- W65 Semi-Supervised Medical Image Classification with Temporal Knowledge-Aware Regularization**
Qishui Yang, Xinyu Liu, Zhen Chen, Bulat Ibragimov, Yixuan Yuan
- W66 Stay focused - Enhancing model interpretability through guided feature training**
Alexander C. Jenke, Sebastian Bodenstedt, Martin Wagner, Johanna M. Brandenburg, Antonia Stern, Lars Mündermann, Marius Distler, Jürgen Weitz, Beat P. Müller-Stich, Stefanie Speidel

POSTER PRESENTATION PROGRAM

- W67 **Suppressing Poisoning Attacks on Federated Learning for Medical Imaging**
Naif Alkhunaizi, Dmitry Kamzolov, Martin Takáč, Karthik Nandakumar
- W68 **Test-time Adaptation with Calibration of Medical Image Classification Nets for Label Distribution Shift**
Wenao Ma, Cheng Chen, Shuang Zheng, Jing Qin, Huimao Zhang, Qi Dou
- W69 **The Intrinsic Manifolds of Radiological Images and their Role in Deep Learning**
Nicholas Konz, Hanxue Gu, Haoyu Dong, Maciej Mazurowski
- W70 **Unified Embeddings of Structural and Functional Connectome via a Function-Constrained Structural Graph Variational Auto-Encoder**
Carlo Amodeo, Igor Fortel, Olusola Ajilore, Liang Zhan, Alex Leow, Theja Tulabandhula
- W71 **Unsupervised Domain Adaptation with Contrastive Learning for OCT Segmentation**
Alvaro Gomariz, Huanxiang Lu, Yun Yvonna Li, Thomas Albrecht, Andreas Maunz, Fethallah Benmansour, Alessandra M. Valcarcel, Jennifer Luu, Daniela Ferrara, Orcun Goksel
- W72 **Unsupervised Representation Learning of Cingulate Cortical Folding Patterns**
Joël Chavas, Louise Guillon, Marco Pascucci, Benoît Dufumier, Denis Rivière, Jean-François Mangin
- W73 **vMFNet: Compositionality Meets Domain-generalised Segmentation**
Xiao Liu, Spyridon Thermos, Pedro Sanchez, Alison Q. O'Neil, Sotirios A. Tsafaris
- W74 **What can we learn about a generated image corrupting its latent representation?**
Agnieszka Tomczak, Aarushi Gupta, Slobodan Ilic, Nassir Navab, Shadi Albarqouni

POSTER PRESENTATION PROGRAM

Poster 8: Machine Learning Algorithms and Applications (Virtual) Sept 21, 2022 (Wednesday), 15:00 - 16:00

Session Chairs: *Ehsan Adeli, Stanford University, United States*
Xiaoxiao Li, University of British Columbia, Canada

- | | |
|-----------|---|
| WV-8-PC01 | A Multi-task Network with Weight Decay Skip Connection Training for Anomaly Detection in Retinal Fundus Images
<i>Wentian Zhang, Xu Sun, Yuexiang Li, Haozhe Liu, Nanjun He, Feng Liu, Yefeng Zheng</i> |
| WV-8-PC02 | Adversarially Robust Prototypical Few-shot Segmentation with Neural-ODEs
<i>Prashant Pandey, Aleti Vardhan, Mustafa Chasmai, Tanuj Sur, Brejesh Lal</i> |
| WV-8-PC03 | Aggregative Self-Supervised Feature Learning from Limited Medical Images
<i>Jiuwen Zhu, Yuexiang Li, Lian Ding, S. Kevin Zhou</i> |
| WV-8-PC04 | Analyzing Brain Structural Connectivity as Continuous Random Functions
<i>William Consagra, Martin Cole, Zhengwu Zhang</i> |
| WV-8-PC05 | Boundary-Enhanced Self-Supervised Learning for Brain Structure Segmentation
<i>Feng Chang, Chaoyi Wu, Yanfeng Wang, Ya Zhang, Xin Chen, Qi Tian</i> |
| WV-8-PC06 | Brain-Aware Replacements for Supervised Contrastive Learning in Detection of Alzheimer's Disease
<i>Mehmet Saygin Seyfioğlu, Zixuan Liu, Pranav Kamath, Sadjyot Gangolli, Sheng Wang, Thomas Grabowski, Linda Shapiro</i> |
| WV-8-PC07 | CASHformer: Cognition Aware SHape Transformer for Longitudinal Analysis
<i>Ignacio Sarasua, Sebastian Pölsterl, Christian Wachinger</i> |
| WV-8-PC08 | CFDA: Collaborative Feature Disentanglement and Augmentation for Pulmonary Airway Tree Modeling of COVID-19 CTs
<i>Minghui Zhang, Hanxiao Zhang, Guang-Zhong Yang, Yun Gu</i> |
| WV-8-PC09 | Combining multiple atlases to estimate data-driven mappings between functional connectomes using optimal transport
<i>Javid Dadashkarimi, Amin Karbasi, Dustin Scheinost</i> |

POSTER PRESENTATION PROGRAM

- WV-8-PC10 Contrast-free Liver Tumor Detection using Ternary Knowledge Transferred Teacher-student Deep Reinforcement Learning**
Chenchu Xu, Dong Zhang, Yuhui Song, Leonardo Kayat Bittencourt, Sree Harsha Tirumani, Shuo Li
- WV-8-PC11 DeSD: Self-Supervised Learning with Deep Self-Distillation for 3D Medical Image Segmentation**
Yiwen Ye, Jianpeng Zhang, Ziyang Chen, Yong Xia
- WV-8-PC12 Discrepancy-based Active Learning for Weakly Supervised Bleeding Segmentation in Wireless Capsule Endoscopy Images**
Fan Bai, Xiaohan Xing, Yutian Shen, Han Ma, Max Q.-H. Meng
- WV-8-PC13 Domain-Prior-Induced Structural MRI Adaptation for Clinical Progression Prediction of Subjective Cognitive Decline**
Minhui Yu, Hao Guan, Yuqi Fang, Ling Yue, Mingxia Liu
- WV-8-PC14 Dual-graph Learning Convolutional Networks for Interpretable Alzheimer's Disease Diagnosis**
Tingsong Xiao, Lu Zeng, Xiaoshuang Shi, Xiaofeng Zhu, Guorong Wu
- WV-8-PC15 Embedding Human Brain Function via Transformer**
Lin Zhao, Zihao Wu, Haixing Dai, Zhengliang Liu, Tuo Zhang, Dajiang Zhu, Tianming Liu
- WV-8-PC16 Few-shot Medical Image Segmentation Regularized with Self-reference and Contrastive Learning**
Runze Wang, Qin Zhou, Guoyan Zheng
- WV-8-PC17 Fine-grained Correlation Loss for Regression**
Chaoyu Chen, Xin Yang, Ruobing Huang, Xindi Hu, Yankai Huang, Xiduo Lu, Xinrui Zhou, Mingyuan Luo, Yinyu Ye, Xue Shuang, Juzheng Miao, Yi Xiong, Dong Ni
- WV-8-PC18 Graph Emotion Decoding from Visually Evoked Neural Responses**
Zhongyu Huang, Changde Du, Yingheng Wang, Huiguang He
- WV-8-PC19 Interaction-Oriented Feature Decomposition for Medical Image Lesion Detection**
Junyong Shen, Yan Hu, Xiaoqing Zhang, Zhongxi Qiu, Tingming Deng, Yanwu Xu, Jiang Liu
- WV-8-PC20 Joint Graph Convolution for Analyzing Brain Structural and Functional Connectome**
Yueting Li, Qingyue Wei, Ehsan Adeli, Kilian M. Pohl, Qingyu Zhao

POSTER PRESENTATION PROGRAM

- WV-8-PC21 **Longitudinal Infant Functional Connectivity Prediction via Conditional Intensive Triplet Network**
Xiaowei Yu, Dan Hu, Lu Zhang, Ying Huang, Zhengwang Wu, Tianming Liu, Li Wang, Weili Lin, Dajiang Zhu, Gang Li
- WV-8-PC22 **Multi-head Attention-based Masked Sequence Model for Mapping Functional Brain Networks**
Mengshen He, Xiangyu Hou, Zhenwei Wang, Zili Kang, Xin Zhang, Ning Qiang, Bao Ge
- WV-8-PC23 **Multi-Modal Masked Autoencoders for Medical Vision-and-Language Pre-Training**
Zhihong Chen, Yuhao Du, Jinpeng Hu, Yang Liu, Guanbin Li, Xiang Wan, Tsung-Hui Chang
- WV-8-PC24 **Multi-Modal Unsupervised Pre-Training for Surgical Operating Room Workflow Analysis**
Muhammad Abdullah Jamal, Omid Mohareri
- WV-8-PC25 **Neuro-RDM: An Explainable Neural Network Landscape of Reaction-Diffusion Model for Cognitive Task Recognition**
Tingting Dan, Hongmin Cai, Zhuobin Huang, Paul Laurienti, Won Hwa Kim, Guorong Wu
- WV-8-PC26 **Overlooked Trustworthiness of Saliency Maps**
Jiajin Zhang, Hanqing Chao, Giridhar Dasegowda, Ge Wang, Mannudeep K. Kalra, Pingkun Yan
- WV-8-PC27 **ProCo: Prototype-aware Contrastive Learning for Long-tailed Medical Image Classification**
Zhixiong Yang, Junwen Pan, Yanzhan Yang, Xiaozhou Shi, Hong-Yu Zhou, Zhicheng Zhang, Cheng Bian
- WV-8-PC28 **Removal of Confounders via Invariant Risk Minimization for Medical Diagnosis**
Samira Zare, Hien Van Nguyen
- WV-8-PC29 **Revealing Continuous Brain Dynamical Organization with Multimodal Graph Transformer**
Chongyue Zhao, Liang Zhan, Paul M. Thompson, Heng Huang
- WV-8-PC30 **SATr: Slice Attention with Transformer for Universal Lesion Detection**
Han Li, Long Chen, Hu Han, S. Kevin Zhou

POSTER PRESENTATION PROGRAM

- WV-8-PC31 **Self-Supervised Learning of Morphological Representation for 3D EM Segments with Cluster-Instance Correlations**
Chi Zhang, Qihua Chen, Xuejin Chen
- WV-8-PC32 **Sparse Interpretation of Graph Convolutional Networks for Multi-Modal Diagnosis of Alzheimer's Disease**
Houliang Zhou, Yu Zhang, Brian Y. Chen, Li Shen, Lifang He
- WV-8-PC33 **Stabilize, Decompose, and Denoise: Self-Supervised Fluoroscopy Denoising**
Ruizhou Liu, Qiang Ma, Zhiwei Cheng, Yuanyuan Lyu, Jianji Wang, S. Kevin Zhou
- WV-8-PC34 **Task-oriented Self-supervised Learning for Anomaly Detection in Electroencephalography**
Yaojia Zheng, Zhouwu Liu, Rong Mo, Ziyi Chen, Wei-shi Zheng, Ruixuan Wang
- WV-8-PC35 **TBraTS: Trusted Brain Tumor Segmentation**
Ke Zou, Xuedong Yuan, Xiaojing Shen, Meng Wang, Huazhu Fu
- WV-8-PC36 **Test-Time Adaptation with Shape Moments for Image Segmentation**
Mathilde Bateson, Herve Lombaert, Ismail Ben Ayed
- WV-8-PC37 **Tracking by weakly-supervised learning and graph optimization for whole-embryo *C. elegans* lineages**
Peter Hirsch, Caroline Malin-Mayor, Anthony Santella, Stephan Preibisch, Dagmar Kainmueller, Jan Funke
- WV-8-PC38 **TractoFormer: A Novel Fiber-level Whole Brain Tractography Analysis Framework Using Spectral Embedding and Vision Transformers**
Fan Zhang, Tengfei Xue, Weidong Cai, Yogesh Rath, Carl-Fredrik Westin, Lauren J. O'Donnell

SATELLITE EVENTS

18 SEPTEMBER SATELLITE EVENTS

WORKSHOPS *[by room then by time]*

(W) [VIRTUAL] Machine Learning in Medical Imaging (MLMI 2022)

Full Day (8:00 AM to 3:00 PM), **Aquarius 1**

(W) Medical Image Assisted Biomarkers' Discovery (MIABID)

Half Day (3:40 PM to 7:10 PM), **Aquarius 1**

(W) Uncertainty for Safe Utilization of Machine Learning in Medical Imaging

Full Day (8:00 AM to 3:00 PM), **Aquarius 2**

(W) ASMUS: Advances in Simplifying Medical UltraSound

Full Day (8:00 AM to 3:00 PM), **Aquarius 3**

(W) aAffordable healthcare and AI for Resource diverse global health (FAIR 2.0)

Half Day (3:40 PM to 7:10 PM), **Aquarius 3**

(W) 11th MICCAI Workshop on Clinical Image-based Procedures (CLIP 2022): Towards Holistic Patient Models for Personalized Healthcare

Full Day (8:00 AM to 3:00 PM), **Gemini 1**

(W) Joint Workshop on Augmented Environments for Computer-Assisted Interventions (AE-CAI), Computer Assisted and Robotic Endoscopy (CARE), and Context Aware Operating Theaters (OR2.0)

Full Day (8:00 AM to 3:00 PM), **Gemini 2**

(W) Multimodal Learning and Fusion Across Scales for Clinical Decision Support

Half Day (8:00 AM to 11:30 AM), **Leo 2**

(W) The 1st Workshop on Computational Mathematics Modeling in Cancer Analysis (CMMCA 2022)

Half Day (11:50 AM to 3:20 PM), **Leo 2**

(W) Imaging Systems for GI Endoscopy

Half Day (8:00 AM to 11:30 AM), **Leo 3**

(W) International Workshop on Medical Optical Imaging and Virtual Microscopy Image Analysis (MOVI)

Half Day (11:50 AM to 3:20 PM), **Leo 3**

(W) GRaphs in biomedical Image anaLysis (GRAIL)

Half Day (8:00 AM to 11:30 AM), **Leo 4**

(W) Simulation and Synthesis in Medical Imaging (SASHIMI)

Half Day (8:00 AM to 11:30 AM), **Pisces 1**

(W) Applications of Medical AI (AMAI)

Half Day (8:00 AM to 11:30 AM), **Virgo 1**

18 SEPTEMBER SATELLITE EVENTS

JOINT WORKSHOP AND CHALLENGES

(W+C) Statistical Atlases and Computational Modeling of the Heart (STACOM workshop) + Left Atrial and Scar Quantification & Segmentation Challenge +

CMRxFMotion: Extreme Cardiac MRI Analysis Challenge under Respiratory Motion Challenge

Full Day (8:00 AM to 3:00 PM)+ Half Day (3:40 PM to 7:10 PM), **Aquarius 4**

(W+C) Machine Learning in Clinical Neuroimaging (MLCN 2022) +

Surface Learning for Clinical Neuroimaging: Regressing Clinical Phenotypes for Cortical Surface Metrics Challenge

Full Day (11:50 AM to 7:10 PM), **Leo 4**

(W+C) BrainLesion workshop + The Federated Tumor Segmentation (FeTS) Challenge 2022 + Brain Tumor Segmentation (BraTS)

Full Day (8:00 AM to 3:00 PM)+ Half Day (3:40 PM to 7:10 PM), **Virgo 2**

(W+C) The Brain Tumor Sequence Registration (BraTS-Reg) Challenge +

ISLES'22: Ischemic Stroke Lesion Segmentation Challenge 2022: Acute, Sub-acute and Chronic Stroke Infarct Segmentation + crossMoDA: Cross-Modality Domain Adaptation for Medical Image Segmentation and Classification

Full Day (8:00 AM to 3:00 PM)+ Half Day (3:40 PM to 7:10 PM), **Virgo 3**

(W+C) Perinatal Imaging, Placental and Preterm Image analysis (PIPPI 2022) +

Baby Steps with PIPPI workshop + Fetal Tissue Annotation Challenge

Full Day (8:00 AM to 7:10 PM), **Virgo 4**

CHALLENGES

(C) [VIRTUAL] AGGC22: Automated Gleason Grading Challenge 2022

Half Day (3:40 PM to 7:10 PM), **Gemini 1**

(C) [VIRTUAL] DRAC2022: Diabetic Retinopathy Analysis Challenge 2022

Half Day (3:40 PM to 7:10 PM), **Leo 1**

(C) [VIRTUAL] CuRIOUS-SEG: Correction of brain shift with Intraoperative Ultrasound - segmentation challenge

Half Day (3:40 PM to 7:10 PM), **Leo 2**

(C) Ultra-low Dose PET Imaging Challenge

Half Day (3:40 PM to 7:10 PM), **Leo 3**

18 SEPTEMBER SATELLITE EVENTS

(C) [VIRTUAL] 3DTeethSeg22: 3D Teeth Scan Segmentation and Labeling Challenge

Half Day (11:50 AM to 3:20 PM), **Pisces 1**

(C) [VIRTUAL] Parse 2022: Pulmonary Artery Segmentation Challenge

Half Day (3:40 PM to 7:10 PM), **Pisces 1**

(C) AutoPET:Automated Lesion Segmentation in Whole-Body FDG-PET/CT

Half Day (8:00 AM to 11:30 AM), **Pisces 2**

(C) [VIRTUAL] COSMOS: Carotid Vessel Wall Segmentation and Atherosclerotic Lesion Detection Challenge

Half Day (11:50 AM to 3:20 PM), **Pisces 2**

(C) [VIRTUAL] INSTANCE 2022:The 2022 Intracranial Hemorrhage Segmentation Challenge on Non-Contrast head CT (NCCT)

Half Day (3:40 PM to 7:10 PM), **Pisces 2**

(C) Learn2Reg - The Challenge (2022)

Full Day (8:00 AM to 3:00 PM), **Pisces 3**

(C) Endoscopic Vision Challenge 2022

Full Day (10:00 AM to 07:10 PM), **Pisces 4**

(C) [VIRTUAL] AMOS: MICCAI Abdominal Multi-Organ Segmentation Challenge 2022

Half Day (3:40 PM to 7:10 PM), **Scorpio**

(C) [VIRTUAL] MICCAI 2022 MELA Challenge: Mediastinal Lesion Analysis

Half Day (11:50 AM to 3:20 PM), **Virgo 1**

(C) [VIRTUAL] Breast density FL: ACR-NCI-NVIDIA Breast Density Federated Learning Challenge

Half Day (8:00 AM to 10:00 AM) **Taurus**

(C) [VIRTUAL] MIDOG2: Mitosis Domain Generalization Challenge 2022

Half Day (1:00 PM to 3:30 PM), **Taurus**

(C) K2S: from undersampled K -space to Automatic Segmentation

Half Day (3:40 PM to 7:10 PM), **Taurus**

(C) [VIRTUAL] KiPA22: Kidney Parsing for Renal Cancer Treatment 2022 Challenge

Half Day (3:40 PM to 7:10 PM), **Gemini 2**

18 SEPTEMBER SATELLITE EVENTS

TUTORIALS

(7) [VIRTUAL] The MICCAI Hackathon: Still Bridging the Gap to the Clinics

Half Day (3:40 PM to 7:10 PM), *Aquarius 2*

(7) [VIRTUAL] Learning With Limited Supervision

Full Day (8:00 AM to 3:00 PM), *Leo 1*

(7) MICCAI for Global Health: Addressing Medical-ML Use Cases in Low- and Middle- Income Countries (LMICs)

Half Day (8:00 AM to 11:30 AM), *Scorpio*

22 SEPTEMBER SATELLITE EVENTS

WORKSHOPS *[by room then by time]*

(W) DALI: Data Augmentation, Labeling, and Imperfections

Full Day (8:00 AM to 3:00 PM), **Aquarius 1**

(W) 5th Workshop on PRedictive Intelligence in Medicine

Full Day (8:00 AM to 3:00 PM), **Aquarius 3**

(W) Domain Adaptation and Representation Transfer (DART): Learning Transferable, Interpretable, and Robust Representations

Full Day (8:00 AM to 3:00 PM), **Aquarius 4**

(W) MICCAI Workshop on Computational Biomechanics for Medicine XVII

Full Day (8:00 AM to 3:00 PM), **Gemini 1**

(W) Medical Image Learning with Noisy and Limited Data

Half Day (11:50 AM to 3:20 PM), **Gemini 2**

(W) MMMI: Multiscale Multimodal Medical Imaging

Half Day (8:00 AM to 11:30 AM), **Leo 2**

(W) Cancer Prevention through early detecTion (CaPTion)

Half Day (8:00 AM to 11:30 AM), **Leo 3**

(W) Artificial Intelligence over Infrared Images for Medical Applications (AIIMA)

Half Day (8:00 AM to 11:30 AM), **Leo 4**

(W) Machine Learning for Medical Image Reconstruction (MLMIR)

Half Day (11:50 AM to 3:20 PM), **Leo 4**

(W) iMIMIC – Interpretability of Machine Intelligence in Medical Image Computing

Half Day (11:50 AM to 3:20 PM), **Pisces 1**

(W) Topological Data Analysis and its Applications for Medical Data

Half Day (8:00 AM to 11:30 AM), **Pisces 2**

(W) Ethical and Philosophical Issues in Medical Imaging (EPIMI)

Half Day (11:50 AM to 3:20 PM), **Pisces 2**

(W) 1st Workshop on Resource-Efficient Medical Image Analysis (REMIA)

Half Day (8:00 AM to 11:30 AM), **Virgo 4**

(W) Medical Applications with Disentanglements (MAD)

Half Day (11:50 AM to 3:20 PM), **Taurus**

(W) Distributed, Collaborative and Federated Learning

Half Day (8:00 AM to 11:30 AM), **Cancer**

22 SEPTEMBER SATELLITE EVENTS

JOINT WORKSHOP AND CHALLENGES

(W+C) [VIRTUAL] Computational Diffusion MRI (CDMRI) workshop + Quality augmentation in diffusion MRI for clinical studies: Validation in migraine challenge

Full Day (8:00 AM to 3:00 PM), **Aquarius 2**

(W+C) Ophthalmic Medical Image Analysis (OMIA9) workshop + Glaucoma Oct Analysis and Layer Segmentation Challenge

Full Day (8:00 AM to 3:00 PM), **Pisces 4**

(W+C) DGM4MICCAI: Deep Generative Models:DGM4 Workshop + Deep Image Generation Model Challenge in Surgery 2022 Challenge

Full Day (8:00 AM to 3:00 PM), **Virgo 2**

CHALLENGES

(C) DFUC2022: Diabetic Foot Ulcers Grand Challenge 2022

Half Day (11:50 AM to 3:20 PM), **Leo 2**

(C) ACROBAT: Automatic Registration of Breast Cancer Tissue

Half Day (11:50 AM to 3:20 PM), **Leo 3**

(C) Flare:Fast and Low-resource Semi-supervised Abdominal Organ Segmentation in CT

Half Day (8:00 AM to 11:30 AM), **Pisces 1**

(C) MOOD: Medical Out-of-Distribution Analysis Challenge 2022

Half Day (11:50 AM to 3:20 PM), **Virgo 1**

(C) [VIRTUAL] MICCAI Grand Challenge on Multi-domain Cross-time-point Infant Cerebellum MRI Segmentation 2022

Full Day (8:00 AM to 3:00 PM), **Virgo 3**

(C) [VIRTUAL] HECKTOR: HEad and neCK TumOR segmentation and outcome prediction in PET/CT images

Half Day (11:50 AM to 3:20 PM), **Virgo 4**

(C) [VIRTUAL] Multi-site, Multi-Domain Airway Tree Modeling (ATM'22)

Half Day (11:50 AM to 3:20 PM), **Scorpio**

22 SEPTEMBER SATELLITE EVENTS

TUTORIALS

(T) **[VIRTUAL]** Automated Machine Learning (AutoML) and Neural Architecture Search (NAS) in Medical Image Analysis

Half Day (8:00 AM to 11:30 AM), **Gemini 2**

(T) Developing for the Medical AI Project Lifecycle with MONAI

Full Day (8:00 AM to 3:00 PM), **Leo 1**

(T) Embedding Deep Neural Networks within Cognitive AI for Machine Reasoning and Automatic Parameter Tuning

Half Day (8:00 AM to 11:30 AM), **Pisces 3**

(T) Emerging Topics in Deep Learning-based Microscopy Image Analysis

Half Day (12:40 AM to 3:20 PM), **Pisces 3**

(T) Trustworthy AI in Medical Imaging

Half Day (8:00 AM to 11:30 AM), **Virgo 1**

(T) GeoMedIA: Geometric Deep Learning in Medical Image Analysis

Half Day (8:00 AM to 11:30 AM), **Taurus**

(T) Tutorial on AI for Medical Image Analysis in Practice

Half Day (8:00 AM to 11:30 AM), **Scorpio**

(T) Federated Learning for Healthcare

Half Day (11:50 AM to 3:20 PM), **Cancer**

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- Image Segmentation
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