

IEEE INTERNATIONAL SYMPOSIUM ON BIOMEDICAL IMAGING

ISBI 2024

27-30 MAY, 2024 - ATHENS, GREECE

MEGARON ATHENS INTERNATIONAL CONFERENCE CENTRE



SCIENTIFIC PROGRAM

Technical Support



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Table of Contents

Table of Contents	2
Welcome Message	3
Organizing Committee	6
Organizing Committee Cont. & Steering Committee & World Liaison Committee	7
Associate Editors	8
Student Travel Grant Winners	9
Sponsors & Exhibitors	10
Conference Venue	15
General Information	16
Plenary Speakers	17
Tutorials	19
Workshops	23
Special Sessions	25
Panel Discussion on AI	28
Clinical Focus Sessions	29
Challenges	30
Industry Day	35
Academic Software Demos	37
Art in Biomedical Imaging	38
Social Events	40
Program at a Glance	43
Technical Program: Monday, 27 May 2024	48
Technical Program: Tuesday, 28 May 2024	57
Technical Program: Wednesday, 29 May 2024	67
Technical Program: Thursday, 30 May 2024	75
Poster Session 1: Tuesday, May 28	83
Poster Session 2: Wednesday, May 29	101
Poster Session 3: Wednesday, May 29	112
Poster Session 4: Thursday, May 30	129

Welcome Message

On behalf of the Organizing Committee, we are honored to extend a warm welcome to the diverse group of participants converging for the 21st International Symposium on Biomedical Imaging. ISBI 2024, organized jointly by the IEEE Signal Processing Society and the IEEE Engineering in Medicine and Biology Society, for the first time in its history, will be held in Athens, Greece, May 27-30, 2024.



The iconic city of Athens, rich in history, culture, and innovation, provides the perfect setting to ignite creativity, foster collaboration, and forge lasting connections. Renowned as the birthplace of democracy, western civilization, the Olympic games, theater, and major mathematical principles, Athens boasts a rich tapestry of cultural heritage and intellectual legacy that continues to inspire and captivate the world. As the English poet John Milton said, Athens is “the eye of Greece, mother of arts and eloquence”. This legacy extends back through the annals of history, where Greece has served as a hub of scientific inquiry and technological innovation since ancient times. Intellectual luminaries such as Pythagoras, Archimedes, Plato, and Aristotle collectively shaped the foundations of Western thought. Philosophers, scientists, mathematicians, healers, and even priests converged and combined their insights to create a uniform

body of knowledge. From the Hippocratic emphasis on observation, diagnosis, and ethics to the groundbreaking anatomical studies of Galen, this convergence of knowledge from different fields paved the way for important developments in medicine and science. We are thrilled to host this year’s Symposium in a location whose contribution to science, medicine, and technology is so multifaceted and enduring.



We have been delighted to see the diverse and interdisciplinary nature of this year’s record-high submissions of four-page papers and one-page abstracts, originating from 49 countries worldwide. We have compiled a comprehensive technical program that features world-class oral and poster sessions, keynotes and plenaries, special sessions, tutorials, challenges, exhibitions and demonstrations, industry sessions, and entrepreneurial presentations in a four-day experience enriched by our special social events. ISBI 2024 will cover all areas related to medical image computing while extending its focus to emerging Artificial Intelligence (AI) frontiers in biomedical imaging. This year’s exciting program comprises **241 oral and 717 poster presentations** on topics encompassing cutting-edge research, innovative engineering solutions, and real-world clinical applications. Extended versions of selected ISBI 2024 papers will be invited to submit to **special issues** in top-notch journals, including IEEE Transactions on Medical Imaging: Special issue on Advancements in Foundation Models for Medical Imaging; Computational and Structural Biotechnology Journal: Smart Hospital - Special issue on Adoption and Trust of Medical Imaging AI in Clinical Settings; Medical Image Analysis Journal: Special Issue on histopathological/biological imaging. Additional special issues will appear in the journals of Computer Vision and Image Understanding (CVIU) and Machine Learning for Biomedical Imaging (MELBA).

Four thought-provoking **plenary talks** will be delivered by world-renowned experts in AI, biomedical imaging, and machine learning. Dr. Anant Madabhushi will open the plenary talks with a presentation on AI in healthcare, discussing its retrospective and prospective validation; Dr. Joseph Sifakis will discuss the current landscape and future trajectory of AI, highlighting AI-induced risks, their assessment and regulation; Dr. Katherine Ferrara will share her expertise on personalized imaging and theragnostics; and Dr. Francis Bach will present an alternative view on denoising diffusion models.

The program of the first day concludes with a **panel discussion** delving into the intricate process of translating AI research into clinical practice, specifically within the realm of biomedical imaging. Our esteemed interdisciplinary panelists (N. Paragios, C. Daskalakis, A. Kelekis, M. Mallet, G. Spigelman, L. Zöllei) will explore pivotal themes from addressing challenges in data management and algorithmic development to securing funding for technology transfer and scale-up and clinical deployment, for the successful integration of AI technologies in healthcare.

This year, we have made an exciting change to our format by transitioning from a traditional parallel Clinical Day format to two **Clinical Focus Sessions** positioned at the heart of the technical program without any other sessions running in parallel. This choice aligns with our commitment to broader interaction, comprehensive coverage, and audience engagement. The first session will focus on imaging and AI opportunities in oncology-integrated precision diagnostics. Dr. MacLean Nasrallah, Dr. Vassilis Gorgoulis, and Dr. Jacob Visser will provide a perspective on choosing clinically and biologically relevant problems in oncology whose solutions may be approached through imaging and AI, with the goal of improved diagnostics and prognostication through the integration of data from multiple biomarkers. The second session will address applications of AI in neurodegenerative diseases, such as Alzheimer’s disease and neuropsychiatric disorders. Using these examples, Dr. Magdalini Kosta-Tsolaki, Dr. Ilya Nasrallah, and Dr. Paris Lalousis will emphasize the challenges and opportunities for translation of imaging-based AI for precision diagnostics.

Six **special sessions** have been tailored to present pioneering engineering solutions to medical necessities: simplicial complex data for biomedical images; imaging molecules within the cell with 3D electron microscopy; MRI beyond the norm: pioneering advances in

engineering, image processing, and safety; brain graph signal processing; interpretable imaging genetics: towards the molecular mechanisms underlying brain structure and function; applied medical imaging AI research: clinical and translational perspectives.

We are also happy to present an array of tutorials, challenges, and thematic workshops, which will enrich the program, attract a wide audience, and provide inclusivity for students and young professionals.

Six **challenges** will offer participants the opportunity to validate methods using common datasets in topics varying from brain tumor segmentation generalizability to cell tracking and justified referral in glaucoma screening. For the first time in the history of the Symposium, ISBI 2024 will include challenge papers in full peer-review cycles and will publish the accepted papers for all registrants to access. Eight **tutorials** represent an opportunity for participants to gain hands-on experience and in-depth knowledge in the field of biomedical imaging. These sessions are designed to be highly educational, providing attendees with practical skills and insights that are directly applicable to their work and research endeavors. Inaugurated this year, four **workshops** offer a dynamic platform for learning, collaboration, and knowledge exchange on diverse subjects, from gender-informed research to pro-cancer AI. Our **academic software demo sessions**, introduced this year, will focus on open science, reproducible research, clinically translational work, and soft skills development.

For a second year in a row, **Industry Day** at ISBI will bring together top-tier companies within our sector to present and deliberate projects that are pertinent to the community. Attendees will have the opportunity to witness how companies in the industry use state-of-the-art technologies and groundbreaking research to develop products that drive innovation forward.

ISBI 2024 will host, for the first time, a **Pharma-Meets-Imaging** session, bringing together pharmaceutical companies and leading imaging scientists to discuss the latest developments in drug discovery and imaging technology, explore new collaborations, and nurture tomorrow's leading relations.

Art-in-Biomedical-Imaging is also a new highlight of ISBI 2024. This year's symposium will foster the exploration of a new frontier, the intersection of biomedical imaging and art. It will promote social responsibility through the donation of artwork created during the symposium and inspired by ISBI 2024 topics to ELEPAP (Rehabilitation for the Disabled).

At ISBI 2024, we believe in recognizing excellence. To this end, we are excited to host competitions that will cultivate innovation, promote collaboration, and celebrate outstanding achievements and contributions with various awards and prizes. A **Pitch Competition** hosted within the Industry Day will offer symposium participants the opportunity to share their startup ideas and win important prizes. With the **Art-in-Biomedical Imaging contest**, ISBI 2024 will ask participants to transcend boundaries and challenge prevailing forms with their artistic skills and talent. The artworks of our winners in the Art-in-Biomedical Imaging contest will appear on the front cover of our Special Issues. Finally, loyal to our community's values of diversity, inclusivity, and equal opportunities for all early-career researchers, ISBI 2024 offers **fifty student travel grants** and awards **best student oral and poster papers**.

An advocate for diversity and equity, IEEE ISBI has once again assembled influential and leading members from around the world. Our committees consist of people from six continents and sixteen countries, from early-career professionals to distinguished members of academia. Individuals of diverse backgrounds and experiences, almost half of which are women, have ensured that ISBI 2024 has been shaped with input from a variety of voices and viewpoints.

ISBI 2024 will feature numerous **networking opportunities** to facilitate meeting and interacting with friends and colleagues, as well as with sponsors and exhibitors. Students, young professionals, and start-uppers can benefit from networking opportunities with representatives of renowned companies of biomedical imaging research during our *Networking Lunch* on Monday, May 27th. Per our commitment to provide more platforms for intellectual exchange, we have taken the initiative to organize a *Breakfast with Leaders*, in addition to the *Lunch with Leaders*, on Tuesday, May 28th; during these events, early-career researchers and students will convene with leaders in biomedical imaging, share their insights and forge relations. On Wednesday, May 29th, highlighting the importance of diversity in our community, the program features a *Women in Signal Processing/Biomedical Imaging Lunch* offered by the Women in Signal Processing Committee, where participants will have the privilege of conversing and interacting with accomplished women of academia and industry.

The city of Athens, both an international metropolis and one of the world's oldest cities, with a recorded history of more than 3,000 years, is an ideal venue for our planned **social events**. Our vibrant Welcome Reception on Monday will take place in Zappeion Mansion, which is a part of the national heritage of Greek civilization and an active part of Greece's history for the last 130 years, with cultural events of great importance taking place within the precinct. Tuesday evening features the Students and Young Professionals event, in which you are invited to stroll through carefully selected locations of cultural and historical significance in Athens and finish your walk in a lovely roof garden with a view of the Acropolis in the city's historic center for dinner and drinks. On Wednesday, ISBI participants will be offered a tour by the curators of the National Archaeological Museum of Athens, a rare insight into the rich tapestry of ancient

civilizations. Alternatively, they will have the opportunity to join a symbolic marathon at the Panathenaic Stadium, the place where the Olympic Games were revived, with the first modern Olympics taking place in this stadium in 1896.

We are truly thankful to all the authors who contributed their work to ISBI 2024. Their dedication, creativity, and passion for advancing the field of biomedical imaging have made this symposium possible. We are honored to have had the opportunity to showcase their research and to be part of this vibrant and dynamic community.

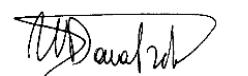
We would also like to express our appreciation to the 80 associate editors, 694 reviewers, session chairs, and volunteers who generously contributed their time and expertise to ensure that we will have an exciting technical program. Their hard work and commitment are deeply valued and have been instrumental in safeguarding the quality of the symposium despite the challenges posed by this year's significant growth.

We want to extend our heartfelt gratitude to all the members of the Organizing Committee and especially our Program Chairs, Spyretta Golemati, Elisa Konofagou, and Ioanna Chouvarda, and our Special Advisor, Nikos Paragios, for their invaluable contribution and unwavering dedication, as well as to our esteemed participants traveling from abroad to help make ISBI 2024 an excellent forum for our community. Many thanks also to Caroline Johnson and Samantha Esposito at IEEE, and a special thank you to our sponsors, supporters, exhibitors, and auspices for inspiring us with new avenues of collaboration.

We are deeply honored to welcome each and every one of you at ISBI 2024.



Konstantina (Nantia) S. Nikita
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Conference Venue

Venue: Megaron Athens International Conference Centre (MAICC)

Megaron is situated at the corner of Vas. Sofias Avenue and Kokkali St. Please enter through the New Building entrance.

MAICC is distinguished as one of the leading and most technologically advanced conference venues in Europe. A building of modern architecture dominates imposingly with its Doric austerity on the main avenue of Vassilisis Sofias.

Right in the heart of the city, only a few minutes on foot from Syntagma square -the main square of the city- and easily accessible by all means of transportation. The Metro station is located a few meters away from the main entrance of MAICC. It is also very close to major hotels, museums, shops, and fine restaurants, many of which are within walking distance.

You can get here by public transport from any part of Athens:

- By metro, it's just two minutes walking from the «Megaro Mousikis» station to the venue entrance.
- There are stops for many bus lines (E14, 550, 10, 3) near the venue.

For more information you can visit the Transport-for-Athens website [OASA](#).



Please enter through the New Building entrance.



General Information

Registration

The registration desk will be open throughout the conference in the pre-function of Skalkotas level (Floor -1.) Registration hours are:

- Monday, May 27, 2024: 08:00 – 19:30
- Tuesday, May 28, 2024: 08:30 – 17:30
- Wednesday, May 29, 2024: 08:30 – 17:30
- Thursday, May 30, 2024: 08:30 – 17:30

You will pick up your badge and other registration materials at the registration desk. All participants are required to wear their badges for the duration of the conference.

Onsite Payment

Should you need to make any onsite payments, they must be paid via credit or debit card at the registration desk only. Please note that cash payments will not be accepted.

Posters

ALL poster presenters should bring their printed poster to the conference. There will not be onsite printing available. Posters scheduled for morning sessions should be taken down by 13:00, while those scheduled for afternoon sessions should be taken down by the end of the last session of the day. The poster boards will be labeled with the number of your paper/abstract. Materials to hang your poster will be provided. Authors are required to stand by their poster during their designated poster presentation session to answer any questions by attendees.

Oral Sessions

Presenters should bring their presentations on a USB drive to the speaker preview room located in Room MC3.5 the day before their presentation.

Attica Discount

Attica, a large department store in the heart of Athens, is offering ISBI 2024 attendees a 10% discount coupon that will be provided at the registration desk.

WIFI

Free WIFI is available for conference attendees. To join, select the “Isbi2024” network. No password is required and you should automatically connect.

Conference Mobile Platform

All ISBI registrants will have full access to the ISBI 2024 conference app. Please refer to the app for the most up-to-date session details, locations, exhibitor/patron information, schedule, and more!



Plenary Speakers



Monday, 27 May | 14:00 – 15:30 EEST

Room: Banqueting Hall

Getting Serious about AI in Healthcare: Retrospective and Prospective Validation

Anant Madabhushi, *Professor of Biomedical Engineering; Departments of Pathology, Biomedical Informatics, and Radiology and Imaging Sciences at Emory University, USA*

Abstract: While there continues to be a huge amount of interest in AI in medicine, relatively few of these approaches have been validated in retrospective or prospective clinical trials. In this talk I will discuss some of our ongoing work in validating AI algorithms in the context of radiology and pathology for precision medicine in the context of both completed and prospective ongoing clinical trials. I will discuss some of the challenges in blinded validation studies and some lessons learnt in prospective deployment and evaluation of these algorithms in the context of precision oncology.



Tuesday, 28 May | 11:30 – 12:30 EEST

Room: Banqueting Hall

Artificial Intelligence: Where We Are, Where We Are Going?

Joseph Sifakis, *Emeritus Research Director at Verimag, France*

Abstract: At present, there is a great deal of confusion as to the final objective of AI. Some see Artificial General Intelligence as the ultimate and imminent goal suggesting that it can be achieved through machine learning and its further developments.

We argue that despite the spectacular rise of AI, we still have weak AI that only provides building blocks for intelligent systems, mainly intelligent assistants that interact with users in question-answer mode.

A bold step toward human-level intelligence would be the advent of autonomous systems resulting from the marriage between AI and ICT envisaged in particular by the IoT. In this evolution, the ability to guarantee the trustworthiness of AI systems – reputed to be “black boxes” very different from traditional digital systems – will determine their degree of acceptance and integration in critical applications.

We review the current state of the art in AI and its possible evolution, including:

- Avenues for the development of future intelligent systems, in particular autonomous systems as the result of the convergence between AI and ICT;
- The inherent limitations of the validation of AI systems due to their lack of explainability, and the case for new theoretical foundations to extend existing rigorous validation methods;
- Complementarity between human and machine intelligence, which can lead to a multitude of intelligence concepts reflecting the ability to combine data-based and symbolic knowledge to varying degrees.

In light of this analysis, we conclude with a discussion of AI-induced risks, their assessment and regulation.

Plenary Speakers (cont.)



Wednesday, 29 May | 11:00 – 12:00 EEST
Room: Banqueting Hall

Personalized Imaging and Theragnostics

Katherine Ferrara, *Professor and Division Chief, Molecular Imaging Program at Stanford (MIPS), Department of Radiology, Stanford University, USA*

Abstract: Within this plenary lecture, we will focus on major biological and engineering advances that empower personalized theragnostics. Sonogenetic methods use genetically encoded, ultrasound-responsive mediators to control gene expression. In one aspect of our recent work, we engineered a hyper-efficient dCas12a and effector that can be activated *in vivo* through ultrasound absorption for gene activation or base editing. This strategy enabled multiplexed gene activation using a single guide RNA array. A key instrumentation advance for clinically viable translation of this work is volumetric control of ultrasound imaging and therapy, and therefore advances in 2D ultrasound arrays will also be detailed. Methods to transfect cells *in vivo* through viral and non-viral delivery are also critically important, and we will explore targeted lipid nanoparticles containing mRNA and engineered adeno-associated viruses (AAVs). In the application of AAVs, we use positron emission tomography (PET) imaging of gene expression to validate transduction of the brain with novel systemically-administered capsids. Through such non-invasive methods, we have tracked sustained transduction over more than one year and we will discuss the feasibility of human translation of brain transduction with engineered systemically-administered capsids. Finally, we will explore the exploding area of radiotheragnostics. Our team has employed spatial transcriptomics to identify target proteins for patient and molecularly-specific treatment of cancer. Based on these targets, small peptides have been engineered for highly sensitive imaging and for future theragnostics.



Thursday, 30 May | 11:00 – 12:00 EEST
Room: Banqueting Hall

An Alternative View of Denoising Diffusion Models

Francis Bach, *Inria, Ecole Normale Supérieure, France*

Abstract: Denoising diffusion models have led to impressive generative models in many domains. In this talk, I will present recent progress, with a focus on formulations that do not involve stochastic differential equations.

Tutorials

Monday, 27 May | 09:00 – 12:30 EEST

Room: Lecture

Tutorial 2: Brain Connectome Analysis with Graph Neural Networks

Primary Contact: Carl Yang, *Emory University*

Co-Organizers: Hejie Cui, *Emory University*

Xuan Kan, *Emory University*

Abstract: Mapping the connectome of human brains using structural or functional connectivity has become one of the most pervasive paradigms for neuroimaging analysis. Recently, Graph Neural Networks (GNNs) motivated from geometric deep learning have attracted broad interest due to their established power for modeling complex networked data. Despite their superior performance in many fields, there has not yet been a systematic tutorial on practical GNNs for brain network analysis. In this tutorial, we will cover (1) the summarization of brain network construction pipelines for both structural and functional neuroimaging modalities; (2) the modularization of fundamental GNN designs for brain networks and a set of recommendations on general effective recipes based on empirical observations; (3) hands-on instructions on our out-of-box Python package BrainGB, which is available at <https://braingb.us> with models, tutorials, and examples; (4) more advanced GNN designs and training strategies for brain network analysis and future directions.

Monday, 27 May | 09:00 – 12:30 EEST

Room: MC2

Tutorial 3: Computational Pathology Tutorial: Clinical Insights and Methodological Advances

Primary Contacts: Maria Vakalopoulou, *CentraleSupélec; Archimedes Unit*

Sergios Christodoulidis, *CentraleSupélec*

Co-Organizers: Dimitris Samaras, *Stony Brook University*

Ioannis Mountzios, *Henry Dunant Hospital Center*

Siddhesh Thakur, *Indiana University*

Kun Huang, *Indiana University*

Abstract: Digital pathology has revolutionized histopathological analysis by leveraging sophisticated computational techniques to augment disease diagnosis and prognosis. Among other methods, recent deep learning methods provide a very good direction for the processing of these data towards different tasks and endpoints. This tutorial aims to provide a thorough presentation of the clinical problems as well as recent methodological advances in computational pathology. Within its scope, participants will be introduced to the clinical and biological questions as well as to the practicalities of utilizing digitized histopathological tissue slides. Furthermore, comprehensive presentations of the state-of-the-art methods will be given, covering topics of analysis in multiple magnifications (cell-level, WSI-level) as well as different methodological formulations, including discriminative and generative formulations. The tutorial will consist of a theoretical review of the topics with hands-on demonstrations. We recommend the audience to bring their own laptop in order to run the provided codes during the tutorial. The tutorial will be self-contained, covering all aspects of digital pathology, from the basics to the current state-of-the-art methods as well as more advanced methods in the field towards their use in clinical settings.

Tutorials (Cont.)

Monday, 27 May | 09:00 – 12:30 EEST

Room: MC3.2

Tutorial 7: Federated Learning in Healthcare

Primary Contact: Sarthak Pati, *Indiana University*

Co-Organizers: Spyridon Bakas, *Indiana University*

Walter Riviera, *Intel*

Hasan Kassem, *MLCommons*

Abstract: This tutorial provides a comprehensive introduction to the practical applications of Deep Learning (DL) in the context of Federated Learning (FL), a form of collaborative learning where data is not shared between collaborators. It delves into the deployment of DL models in low-resource environments and FL pipelines in large-scale healthcare settings. The tutorial introduces the Comprehensive Open Federated Ecosystem (COFE), an open-source collection of tools developed for DL in clinical settings. Key contributions of COFE include the graphical interface provided by the Federated Tumor Segmentation (FETS) Tool, the DL algorithmic core provided by Generally Nuanced Deep Learning Framework (GaNDLF), the Open Federated Learning (OpenFL) library, governance and orchestration provided by MedPerf, and model optimization provided by OpenVINO. Attendees will learn to build models using GaNDLF, adapt existing centralized algorithms to a federated architecture, understand privacy and security considerations in collaborative learning, perform post-training optimization of trained models for low-resource environments, and distribute models securely through the Hugging Face Hub. The tutorial emphasizes the importance of building models that can generalize well in the real world, particularly in healthcare, where resource access inequities are prevalent. It also highlights the increasing importance of FL in overcoming the challenges of sharing data across institutions. The tutorial aims to equip researchers to adapt their existing centralized algorithms to a federated architecture or build new models following the FL principle, and offers non-data scientists an opportunity to learn and discuss these topics.

Tuesday, 28 May | 14:00 – 17:30 EEST

Room: MC2

Tutorial 4: DIMEDIA: Diffusion Models in Medical Imaging and Analysis

Primary Contact: Sotirios Tsaftaris, *University of Edinburgh; Archimedes Unit*

Co-Organizers: Julia Wolleb, *University of Basel*

Yuyang Xue, *University of Edinburgh*

Maria Nefeli Gkouti, *Archimedes Unit*

Abstract: There has been an explosion of developments in generative models in machine learning (including Variational Auto-Encoders or VAEs, Generative Adversarial Networks or GANs, Normalizing Flows or NFs) that enable us to generate high-quality, realistic synthetic data such as high-dimensional images, volumes, or tensors. Recently a (re)newed breed of generative models, Diffusion Models, has shown impressive ability in generating high-quality imaging data. Applications of diffusion models in medical image analysis are already appearing in the context of image reconstruction, denoising, anomaly detection, segmentation, generation of data, and causality. This tutorial presents an overview of generative modeling, focusing on diffusion models (theory and learning tricks). We will discuss applications in the medical imaging field and overview existing open-ended challenges. It builds on the highly successful and sold-out tutorial at MICCAI 2023.

Tutorials (Cont.)

Thursday, 30 May | 13:00 – 14:30 EEST | Demo Session - 15:00 – 16:30 EEST

Room: MC3.4 (Presentation), Skalkotas Auditorium Foyer (Demo)

Tutorial 8: National Cancer Institute Imaging Data Commons as a Resource to Support Transparency, Reproducibility, and Scalability in Imaging AI

Primary Contact: Andrey Fedorov, *Brigham and Women's Hospital / Harvard Medical School*

Co-Organizers: Daniela Schacherer, *Fraunhofer MEVIS, Bremen*

David Clunie, *DICOM Standards Committee*

André Homeyer, *Fraunhofer MEVIS, Bremen*

Ulrike Wagner, *Frederick National Laboratory for Cancer Research*

Erika Kim, *US National Cancer Institute [NCI] Data Ecosystems Branch*

Ron Kikinis, *Brigham and Women's Hospital / Harvard Medical School*

Abstract: NCI Imaging Data Commons (IDC) (<https://imaging.datacommons.cancer.gov/>) is a cloud-based environment containing publicly available cancer imaging data co-located with analysis and exploration tools and resources. IDC is a node within the broader NCI Cancer Research Data Commons (CRDC) (<https://datacommons.cancer.gov/>) infrastructure that provides secure access to comprehensive, diverse, and expanding multi-modality collections of cancer research data, including genomics, proteomics, and clinical trial data. As of January 2024, IDC hosts over 50 TB of public radiology and digital pathology images and image-derived data, all in standard Digital Imaging and Communications in Medicine (DICOM) representation, side-by-side with the tools to support search, visualization, and analysis of the data. Recent studies demonstrated the utility of IDC for facilitating reproducible studies in imaging AI, its value in enabling the development and evaluation of new AI methods and in applying AI tools to enrich existing imaging collections with annotations and other analysis results. In this tutorial, participants will be familiarized with the IDC through a combination of lectures and hands-on exercises. They will learn the basic skills of how to use the IDC for searching, accessing, and visualizing image data, as well as the development of IDC-based AI workflows for radiology and digital pathology applications.

Thursday, 30 May | 13:00 – 16:30 EEST

Room: Marinos

Tutorial 6: Fairness of AI in Medical Imaging (FAIMI)

Primary Contact: Aasa Feragen, *Technical University of Denmark*

Co-Organizers Andrew King, *King's College London*

Enzo Ferrante, *CONICET / Universidad Nacional del Litoral*

Melanie Ganz, *Copenhagen University*

Eike Petersen, *Technical University of Denmark*

Veronika Cheplygina, *IT University of Copenhagen*

Esther Puyol-Antón, *HeartFlow*

Ben Glocker, *Imperial College London*

Daniel Moyer, *Vanderbilt University*

Tareen Dawood, *King's College London*

Nina Weng, *Technical University of Denmark*

Abstract: During the last 10 years, the research community of fairness, equity and accountability in machine learning has highlighted the potential risks associated with biased systems in various application scenarios, ranging from face recognition to criminal justice and job hiring assistants. A large body of research has shown that such machine learning systems can be biased with respect to demographic attributes like gender, ethnicity, age, or geographical distribution, presenting unequal behavior on disadvantaged or underrepresented subpopulations. This bias can have a number of sources, ranging from database construction, modeling choices, training strategies, and even lack of diversity in team composition, but can also stem from differences in data quality, prevalence, or other hidden correlations. This tutorial will introduce the audience to the standard practices within algorithmic fairness through the lens of medical imaging, and provide case discussions, current research status, potential pitfalls, as well as data resources to enable medical imaging researchers to get started working on bias and fairness in medical imaging. The tutorial is rooted in the FAIMI community (<https://faimi-workshop.github.io>), an initiative dedicated to promoting knowledge and research about bias and fairness in the medical imaging community.

Tutorials (Cont.)

Thursday, 30 May | Presentation - 13:00 – 14:30 EEST | Demo Session - 15:00 – 16:30 EEST

Room: MC3.2 (Presentation), Skalkotas Auditorium Foyer (Demo)

Tutorial 1: AI Tools for Computational Neuroanatomy

Primary Contact: Eleftherios Garyfallidis, *Indiana University*

Co-Organizers: Bramsh Chandio, *University of Southern California*

Shreyas Fadnavis, *Harvard University*

Ariel Rokem, *University of Washington, Seattle*

Jaroslaw Harezlak, *Indiana University*

Abstract: The ever-increasing size of the datasets, analysis practices, and comparisons of these new approaches with current state-of-the-art methods requires access to advanced computational resources and methods. The Diffusion Imaging in Python (DIPY) community has developed an established software ecosystem for analyzing structural and diffusion MRI data. This tutorial is tailored to enable ISBI attendees by teaching the latest AI tools available in DIPY that can boost processing. Given that DIPY provides one of the largest APIs for medical imaging, we will focus on methods that are currently a bottleneck for most researchers such as segmentation, artifact correction, and AI-driven statistical analysis. Hands-on tutorials in Python and Jupyter notebooks will be provided to all attendees.

Thursday, 30 May | 13:00 – 16:30 EEST

Room: Skalkotas Auditorium

Tutorial 5: Explainable Artificial Intelligence in Biomedical Imaging

Primary Contact: Kalliopi V. Dalakleidi, *National Technical University of Athens*

Co-Organizers: Nicolas Karakatsanis, *Cornell University*

Ioanna Chouvarda, *Aristotle University of Thessaloniki*

Theofanis Ganitidis, *National Technical University of Athens*

Dimitris Fotopoulos, *Aristotle University of Thessaloniki*

Abstract: Artificial Intelligence in Biomedical Imaging, though increasingly popular, has had so far limited clinical impact, since robust and generalizable models that provide the end user with decisions that can be explained are still sparse. An approach to tackle this challenge is applying Explainable Artificial intelligence (XAI) methods in Biomedical Imaging. Visual-based XAI methods, where the explanation can be provided directly on the input-image, are of special importance in medical imaging. For visual-based approaches, the main idea is to analyze which parts of the image led to a resulting decision. When there are no visually meaningful ways of existing computer-aided diagnosis approaches, non-visual based XAI methods for biomedical imaging can be used instead, such as case-based, textual and auxiliary explanations. Case-based explanations provide explanations based on specific examples, such as using similar input images or counterfactuals. Textual XAI approaches aim to depict additional information through textual explanations represented by natural language. Auxiliary measures mainly provide additional information and can be illustrated in tabular or graphical form. The first part of the tutorial will be a lecture introducing XAI methods taxonomy (post-hoc vs ad-hoc, visual vs. non-visual, local vs global, model specific vs model-agnostic, high-resolution vs low resolution) with examples on their applications on biomedical imaging modalities (CT, MRI, PET/SPECT, Ultrasound). The second and third parts of the tutorial will be hands-on sessions on visual-based and non-visual based methods, accordingly. A key challenge that remains in Explainable Artificial Intelligence in Biomedical Imaging is ensuring that XAI methods are robust and reliable. Recent research efforts in computer vision that have investigated whether XAI methods are robust to small perturbations in the data, different model architectures, different cross fold validation approaches or different hyperparameter tuning settings will be presented during the fourth part of the tutorial. XAI research in Biomedical Imaging should also address the lack of standardized approaches for evaluating the effectiveness of the explanation that XAI provides to diverse AI stakeholders in clinical decision-making. Towards this goal, the fifth part of the tutorial will aim to identify and propose measures of explanation effectiveness in the clinical setting.

Workshops

Monday, 27 May | 09:00 – 10:30 EEST

Room: MC3.3

Workshop 1: Through the Lens of Equality: A Workshop on Gender-Informed Research

Maria Flouri, *National Technical University of Greece*

Eleni Karachaliou, *Aristotle University of Thessaloniki*

Abstract: This workshop aims to promote excellence in research by introducing a crucial perspective—the gender dimension integration into research and innovations that lead to further gender inclusivity. Such an integration, can enhance the quality and impact of the research outcomes. This will lead to inclusive research applications and/or innovations free from gender bias.

Research results and/or applications usually reflect the biases in the viewpoints of the research team.

Therefore, it is crucial to find methods to integrate gender and to produce research results that enhance excellence, challenge gender stereotypes, rethink norms, and reference models. To this end, this workshop will explore emerging topics at the intersection of gender studies and other scientific fields.

We will delve into case studies illustrating how gender dynamics influence research outcomes and offer practical strategies for integrating gender equality seamlessly into experimental design, data analysis, and interpretation.

Monday, 27 May | 09:00 – 10:30 EEST

Room: MC3.4

Workshop 4: Machine Learning for Neurodegenerative Disorders

Anubha Gupta, *IIT-Delhi*

Deepti R. Bathula, *IIT-Ropar*

Neelam Sinha, *CBR-IISC*

Selin Aviyente, *Michigan State University*

Abstract: The Machine Learning for Neurodegenerative Disorders (MLND) workshop is proposed to provide a platform for disseminating and discussing the latest and innovative applications of machine learning for better understanding of Neurodegeneration. Neurodegeneration leads to severe crippling of normal life. Although several of these conditions cannot be completely treated, it is worthwhile diagnosing early. Early diagnosis allows a critical window of interventions where recovery or slower progression can be made possible. Towards this, several modalities like EEG, MEG, MRI and clinical assessments can be utilized to determine the status of the brain. Time series data from multi-channel EEG headsets and MEG scanners can be studied for subtle changes to detect anomalies. Analysis in multi-dimensional spaces such as time-frequency, latent spaces of feature-embeddings, non-linear analysis, etc can be leveraged for robust inferences. The inferences can also be substantiated by analysis of imaging data. It is well known that MR imaging can capture gross structures with structural MRI, brain functioning with fMRI and microstructures can be imaged using Diffusion MRI. Advancements in Machine learning such as Deep learning, Persistent homology, IRM-framework, causal modelling, etc can be leveraged in understanding neurodegeneration

Workshops (cont.)

Monday, 27 May | 11:00 – 12:30 EEST

Room: MC3.3

Workshop 2: PROC-AI: Integrating Imaging Data and AI Models for Supporting Precision Care Through Prostate Cancer's Continuum

Manolis Tsiknakis, *FORTH-ICS & ECE, Hellenic Mediterranean University (HMU)*

Nikolaos Papanikolaou, *Champalimaud Foundation*

Kostas Marias, *FORTH-ICS & ECE, Hellenic Mediterranean University (HMU)*

Haridimos Kondylakis, *FORTH-ICS & ECE, Hellenic Mediterranean University (HMU)*

Sara Colantonio, *Italian National Research Council (ISTI-CNR)*

Abstract: The vision of the ProCancer-I project is to develop AI medical image-based models to address unmet clinical needs in the field of Prostate Cancer, where overdiagnosis and overtreatment are due to the lack of robust biomarkers. To achieve this, we created the largest interoperable, high-quality mpMRI (multi-parametric Magnetic Resonance Imaging) dataset worldwide for the study of prostate cancer (PCa). In realizing this objective, the ProCancer-I repository, called ProstateNet, is envisaged to exceed by at least one order of magnitude current datasets and has enabled the implementation of trustworthy AI modeling that outperform current quantitative MR imaging biomarker- based studies, thus paving the way for AI-assisted prostate cancer care.

Monday, 27 May | 11:00 – 12:30 EEST

Room: MC3.4

Workshop 3: Cross-Society Innovation for Translational Applications of Medical AI

Shandong Wu, *University of Pittsburgh, School of Medicine*

Lei Xing, *Stanford University*

Abstract: Artificial Intelligence (AI) is becoming ubiquitous and it grows rapidly in biomedical domains. Medical imaging is spearheading the development and translation of AI in medicine, showing early success in many applications. Medical imaging is a major data modality and it links many medical subspecialties and thus the related research and clinical communities/societies. Today, there are many research topics and opportunities arising beyond the important focus of pure technical innovation. The motivation of this workshop is to bring other related research communities to the ISBI ecosystem to extend information exchange, foster collaboration, and inspire cross-subject innovation towards translational applications of AI in the medical imaging arena. Specifically, we will invite prestigious speakers as representatives of the Radiological Society of North America (RSNA) community, the American Association of Physicists in Medicine (AAPM) community, and American Association of Neurological Surgeons (AANS) community to share frontiers, progresses, insights, perspectives, and challenges of AI research in their respective fields, through which we expect to chart new collaboration opportunities to advance AI in medical imaging research.

Special Sessions

Monday, 27 May | 15:30 – 16:30 EEST

Room: MC3.4

Special Session 1: Simplicial Complex Data for Biomedical Images

Chair/Lead Organizer: Moo K. Chung, *University of Wisconsin-Madison*

Speakers: Yalin Wang, *Arizona State University*

Anqi Qiu, *Hong Kong Polytechnic University*

Viljay Anand, *University College London*

Mustafa Hajj, *University of San Francisco*

Abstract: The era of big data in biology and medicine brings exciting opportunities for new scientific discoveries and challenges in biomedical image processing and analysis. Yet, valuable information in the sheer amount of complex imaging data may be hidden in patterns that cannot be decoded easily with standard tools. Recently, simplicial complex data structure has been a promising new avenue of research in extracting such hidden patterns in biomedical images. A simplicial complex is a collection of vertices, edges, triangles, and their n-dimensional counterparts. These components are called simplices. They collectively form a structure that can capture complex, multi-scale interactions among data points. Unlike traditional graph-based data structures, which can only capture pairwise relationships, simplicial complexes are capable of encoding higher-order interactions among vertices, thereby enriching the data representation. Simplicial complexes can incorporate both geometric and topological information, offering a more comprehensive understanding of the imaged structures. Persistent homology, a method from topological data analysis that studies the topological features of a space at various spatial resolutions, can be naturally applied to simplicial complex representations. This new data structure and accompanying geometric and topological tools promise to significantly advance the field by providing new tools for the extraction and interpretation of intricate unaddressed patterns in biomedical images.

Monday, 27 May | 15:30 – 16:30 EEST

Room: MC3.3

Special Session 5: Interpretable Imaging Genetics: Towards the Molecular Mechanisms Underlying Brain Structure and Function

Chairs/Lead Organizers: Lorenza Brusini, *University of Verona*

Vince Calhoun, *Georgia State & Georgia Tech University*

Other Organizers: Ilaria Boscolo Galazzo, *University of Verona*

Gloria Menegaz, *University of Verona*

Speakers: Fabrizio Pizzagalli, *University of Turino*

Yu-Ping Wang, *Tulane University*

Li Shen, *University of Pennsylvania*

Sergey Plis, *Georgia State University*

Abstract: The integration of imaging- and genetics-derived data primarily aims to assess the genetic determinants underlying complex structural and functional phenotype variations, like those occurring in the brain along aging. In particular, recent research in this field has revealed that focusing on -omics data such as transcriptomics would represent a more direct link than genomics with the phenotypes represented by images. Indeed, the birth of novel technologies like single-cell RNA sequencing allowed to collect datasets and atlases enabling the so-called image-based spatial transcriptomics, that is the identification of gene expression's spatial distribution and regulation on the image. This leads to the uncovering of the molecular mechanisms moving the brain physiological as well as pathological processes. In the last decades, large multidisciplinary collaborations and long-term multimodal studies as, e.g., ADNI, ENIGMA, and UK Biobank, made possible to access big repositories of different type of data, including images and genetics information. Such an availability, together with the exquisite heterogeneity of the data itself, designates deep learning as particularly attractive to represent the imaging genetics interplay thanks to its model-free nature. However, despite the undeniable advantages of deep learning models like deep neural networks, the complexity of their architecture makes mandatory to obtain explanations favoring the interpretability, especially in medicine, healthcare and neuroscience fields. For this reason, the eXplainable Artificial Intelligence (XAI) is fundamental to explain how the model reached a specific outcome, how the features contributed, and to what extent the model is confident about the decision.

Special Sessions (cont.)

Monday, 27 May | 17:00 – 18:00 EEST

Room: MC3.4

Special Session 2: Imaging Molecules Within the Cell By 3d Electron Microscopy

Chairs/Lead Organizers: Antonio Martínez Sánchez, *University of Murcia*

Tingying Peng, *Helmholtz Institute Munich*

Speakers: Carlos Oscar Sorzano Sánchez, *Centro Nacional de Biotecnología*

Harold Phelippeau, *Thermo Fisher Scientific*

Vinith Kishore, *University of Basel*

Daniel Baum, *Zuse Institute Berlin*

Abstract: The cellular environment is characterized by the presence of many different molecular species, where macromolecular complexes, stable or transient, underlie critical cellular functions. Current 3D electron microscopy techniques such as cryo-electron microscopy (cryo-EM) allows to reconstruct near-atomic resolution molecular complexes, cryo-electron tomography (cryo-ET) enables an accurate three-dimensional visualization and analysis of the subcellular architecture at molecular resolution and *in situ*, i.e. under native conditions and preserving functional interactions. In addition, recent advances in serial-section electron tomography possibilities to elucidate tissue ultrastructure. 3D electron microscopy (3DEM) relies greatly on computing as cellular structures are highly heterogeneous and the interpretation of volumes (tomograms) is severely hampered by several factors like noise, low contrast, and anisotropic distortions. Consequently, the development of specific image processing algorithms is required to analyze data within tomograms. In addition, recent advances in hardware have brought electron tomography to a new era by incrementing dramatically data quantity and quality, but at the same time has converted data analysis into a major bottleneck of this technique. This special session gathers experts in different application domains of the 3DEM coming from academia and industry. They are going to talk about the new approaches and challenges in the development of image analysis methods for 3DEM. The aim is to bring new ideas to automatically interpret the reconstructed tomograms and derive quantitative information about cellular processes at macromolecular level.

Tuesday, 28 May | 14:00 – 15:30 EEST

Room: MC3.4

Special Session 6: Applied Medical Imaging AI Research: Clinical and Translational Perspectives

Chair/Lead Organizer: Shandong Wu, *University of Pittsburgh*

Speakers: Shandong Wu, *University of Pittsburgh*

Young-Gon Kim, *Seoul National University Hospital and L'imagin Inc.*

Matthew W. Pease, *Indiana University*

Riccardo Lattanzi, *NYU*

Abstract: Research in artificial intelligence (AI)/machine learning (ML) is gaining explosive growth. Numerous computational models, algorithms, prototypes, systems have been developed in the medical imaging domain, with evidence of early success. Medical imaging is a major data modality in healthcare yet it is also complicated with high-resolution and multi-dimensional information that requires sophisticated methods for analysis. A strong focus of today's medical imaging AI research is in the methodological aspects where researchers devote efforts to pursue algorithm innovation. Medical AI, however, is more an applied science and the ultimate goal of research is to augment clinicians and to benefit patients. AI algorithm research is unlikely to be useful in clinical practice if they lack appropriate clinical/medical contexts. There is an imperative need to calibrate valuable research towards clinical significance and medical demands. Clinical and translational AI research focuses more on the application side of computational AI techniques to address unmet clinical needs and to develop and evaluate practically useful AI solutions.

Special Sessions (cont.)

Wednesday, 29 May | 08:30 – 10:00 EEST

Room: Marinos

Special Session 3: MRI Beyond the Norm: Pioneering Advances in Engineering, Image Processing, And Safety

Chair/Lead Organizer: Laleh Golestani Rad, *Northwestern University*

Speakers:
 Lawrence L. Wald, *Harvard Medical School*
 Lucia Navarro de Lara, *Harvard Medical School*
 Rosalind Sadleir, *Arizona State University*
 Ulas Bagci, *Northwestern University*

Abstract: Magnetic resonance imaging (MRI) has undergone remarkable advancements in recent years, spanning a spectrum of out-of-the-box approaches designed to enhance patient safety, novel hardware facilitating concurrent imaging and neuromodulation, and cutting-edge applications of machine learning in pre- and post-image processing. These innovative strategies have shattered the conventional boundaries of MRI, reshaping the imaging landscape and unlocking new potentials. This session seeks to introduce and explore these pioneering advances in the field of MR engineering, safety, and image processing. While such topics are conventionally featured and well-received at large MRI-focused conferences like the International Society of Magnetic Resonance in Medicine (ISMRM), they typically emphasize medical physics and clinical applications. However, MRI is inherently interdisciplinary and constantly in need of innovative engineering solutions. This session will foster collaboration between the engineering-focused audience and the magnetic resonance imaging community.

Wednesday, 29 May | 16:00 – 17:30 EEST

Room: MC3.2

Special Session 4: Brain Graph Signal Processing

Chairs/Lead Organizers: Hamid Behjat, *EPFL*
 Selin Aviyente, *Michigan State University*
 Dimitri Van De Ville, *EPFL & University of Geneva*

Speakers:
 Nicolas Farrugia, *IMT Atlantique*
 James Pang, *Monash University*
 Sébastien Dam, *IRISA*
 Selin Aviyente, *Michigan State University*
 Hamid Behjat, *EPFL*

Abstract: Modern brain imaging techniques provide us with unique views on brain structure and function; i.e., how the brain is wired, and where and when activity takes place. In particular, brain signals and images of multi-modal nature are acquired at exquisite high spatial and/or temporal resolution. Traditional signal processing has to date provided invaluable insights into brain structure and function but is limited in that it cannot provide a direct means to integrate the two classes. Thus, given the complex, inhomogeneous nature of the brain, novel algorithms that exploit both structural and functional activity of brain signals are needed to improve our understanding of the brain.

This special session involves novel research in understanding the underpinnings of multi-modal brain signal and imaging data via leveraging principles from the recently emerged field of graph signal processing (GSP). In GSP, signals acquired at the nodes of a given graph are studied atop the underlying graph structure. Generalizations of traditional signal processing notions are then leveraged to study graph signals. GSP is thus of particular interest in applications in which besides the available signal/image, complementary data is available that can be used to define the domain of the signals at hand. In the past decade, an increasing number of fundamental signal processing operations, such as Fourier transform, filtering, and convolution, have been generalized to the graph setting, allowing to analyze graph signals from a novel viewpoint.

Panel Discussion on AI

Monday, 27 May | 18:00 – 19:15 EEST

Room: Banqueting Hall

Translating Artificial Intelligence Research into Clinical Practice: Challenges and Perspectives in Biomedical Imaging

Abstract: Join us for an enlightening panel discussion delving into the intricate process of translating artificial intelligence (AI) research into clinical practice, specifically within the realm of biomedical imaging. Our esteemed interdisciplinary panelists will share invaluable insights, experiences, and strategies for navigating this multifaceted journey. From addressing challenges in data management and algorithmic development to securing funding for technology transfer and scale up and clinical deployment, we will explore pivotal themes essential for the successful integration of AI technologies in healthcare. Don't miss this chance to gain valuable perspectives and contribute to shaping the future of AI in biomedical imaging.



Nikos Paragios

Distinguished Professor of Mathematics at University of Paris-Saclay and Chief Executive & Technical Officer at TheraPanacea



Costis Daskalakis

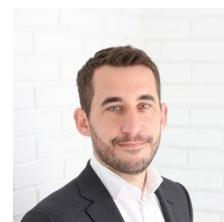
Avanessians

Professor of Computer Science at MIT



Alexis Kelekis

Professor at the 2nd Radiology Department of the National and Kapodistrian University of Athens



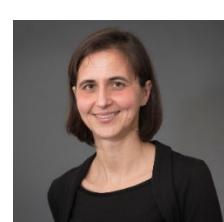
Maxime Mallet

General Partner at Jolt Capital



Guy Spigelman

EMEA lead for Healthcare and Life Sciences Startups at AWS



Lilla Zöllei

Massachusetts General Hospital

Clinical Focus Sessions

Wednesday, 29 May | 13:30 – 14:30 EEST

Room: Banqueting Hall

Imaging and AI Opportunities in Oncology Integrated Diagnostics

Abstract: The session will provide a perspective on choosing clinically and biologically relevant problems in oncology whose solutions may be approached through imaging and AI, with the goal of improved diagnostics and prognostication through the integration of data from multiple biomarkers. Talks by clinician-researchers will illustrate the value of work by imaging researchers and computational scientists and the challenges faced, through general concepts and specific examples, and include information for practical implementation. Following the talks, time will be allocated for discussion.

- Clinically-relevant computational investigation for Oncology Integrated Diagnostics, MacLean Nasrallah, University of Pennsylvania
- Senescence in cancer and targeted senolysis, Vassilis Gorgoulis, National Kapodistrian University of Athens
- Integrated Diagnostics – informatics considerations, Jacob Visser, Erasmus MC, Rotterdam
- Discussion



MacLean Nasrallah, MD, PhD
University of Pennsylvania



Vassilis G. Gorgoulis, MD, PhD
National Kapodistrian University of Athens



Jacob J. Visser, MD, PhD
Erasmus MC, Rotterdam

Wednesday, 29 May | 13:30 – 14:30 EEST

Room: Skalkotas Auditorium

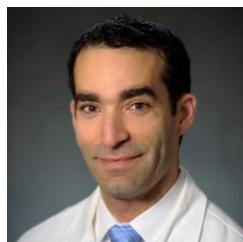
Clinical Translation of AI For Neurodegenerative and Neuropsychiatric Disease

Abstract: This session will focus on applications of AI in neurodegenerative diseases, such as Alzheimer's disease and neuropsychiatric diseases, including schizophrenia. Using these examples, we emphasize the challenges and opportunities for translation of imaging-based AI for precision diagnostics. Following the talks, time will be allocated for discussion.

- Clinical needs that can be covered by using AI in Neuroimaging of Neurodegenerative diseases, Magdalini Kosta-Tsolaki, Aristotle University of Thessaloniki
- Artificial Intelligence in Alzheimer's Disease and Aging, Ilya Nasrallah, University of Pennsylvania
- AI-based neuroimaging prediction of outcomes in depression and psychosis, Paris Lalousis, King's College London
- Discussion



Magdalini Kosta-Tsolaki
Aristotle University of Thessaloniki



Ilya Nasrallah
University of Pennsylvania



Paris Lalousis
King's College London

Challenges

Monday, 27 May | 09:00 – 10:30 EEST

Room: Marinos

Challenge 4: Diminished Reality for Emerging Applications in Medicine Through Inpainting (DREAMING)

<https://dreaming.ikim.nrw/>

Authors:

- Christina Gsaxner, Institute of Computer Graphics and Vision, Graz University of Technology, Austria; Department of Oral and Maxillofacial Surgery, Medical University of Graz
- Shohei Mori, Institute of Computer Graphics and Vision, Graz University of Technology
- Gijs Luijten (Institute of Computer Graphics and Vision, Graz University of Technology, Austria; AI-guided Therapies, Institute for AI in Medicine (IKIM), University Hospital Essen (AÖR))
- Viet Duc Vu, Department of Diagnostic and Interventional Radiology, University Hospital Giessen Justus-Liebig-University Giessen
- Timo van Meegdenburg, Institute for AI in Medicine (IKIM), University Hospital Essen (AÖR)
- Gabriele A. Krombach, Department of Diagnostic and Interventional Radiology, University Hospital Giessen Justus-Liebig-University Giessen
- Jens Kleesiek, Medical Machine Learning, Institute for AI in Medicine (IKIM), University Hospital Essen (AÖR), Germany; Cancer Research Center Cologne Essen (CCCE), University Medicine Essen (AÖR); German Cancer Consortium (DKTK), Partner Site Essen
- Ulrich Eck, Computer Aided Medical Procedures & Augmented Reality, Technical University Munich
- Nassir Navab, Computer Aided Medical Procedures & Augmented Reality, Technical University Munich (TUM)
- Yan Guo, Institute of Biomedical Manufacturing and Life Quality Engineering, State Key Laboratory of Mechanical System and Vibration, School of Mechanical Engineering, Shanghai Jiao Tong University; Institute of Medical Robotics, Shanghai Jiao Tong University
- Xiaojun Chen, Institute of Biomedical Manufacturing and Life Quality Engineering, State Key Laboratory of Mechanical System and Vibration, School of Mechanical Engineering, Shanghai Jiao Tong University; Institute of Medical Robotics, Shanghai Jiao Tong University
- Frank Hölzle, Department of Oral and Maxillofacial Surgery, University Hospital RWTH Aachen
- Behrus Puladi, Department of Oral and Maxillofacial Surgery, University Hospital RWTH Aachen; Institute of Medical Informatics, University Hospital RWTH Aachen
- Jan Egger, AI-guided Therapies, Institute for AI in Medicine (IKIM), University Hospital Essen (AÖR); Cancer Research Center Cologne Essen (CCCE), University Medicine Essen (AÖR)

Abstract: While Augmented Reality (AR) is extensively studied in medicine, it represents just one possibility for modifying the real environment. Other forms of Mediated Reality (MR) remain largely unexplored in the medical domain. Diminished Reality (DR) is such a modality. DR refers to the removal of real objects from the environment by virtually replacing them with their background [1]. Combined with AR, powerful MR environments can be created. Although of interest within the broader computer vision and graphics community, DR is not yet widely adopted in medicine [2]. However, DR holds huge potential in medical applications. For example, where constraints on space and intra-operative visibility exist, and the surgeons' view of the patient is further obstructed by disruptive medical instruments or personnel [3], DR methods can provide the surgeon with an unobstructed view of the operation site. Recently, advancements in deep learning have paved the way for real-time DR applications, offering impressive imaging quality without the need for prior knowledge about the current scene [4].

Specifically, deep inpainting methods stand out as the most promising direction for DR [5,6,7]. The DREAM challenge focuses on implementing inpainting-based DR methods in oral and maxillofacial surgery. Algorithms shall fill regions of interest concealed by disruptive objects with a plausible background, such as the patient's face and its surroundings. The facial region is particularly interesting for medical DR, due to its complex anatomy and variety through age, gender and ethnicity. Therefore, we will provide a dataset consisting of synthetic, but photorealistic, surgery scenes focusing on patient faces, with obstructions from medical instruments and hands holding them. These scenes are generated by rendering highly realistic humans together with 3D-scanned medical instruments in a simulated operating room (OR) setting.

This challenge represents an initial frontier in the realm of medical DR, offering a simplified setting to pave the way for MR in medicine. In the future, the potential for more sophisticated applications is expected to unfold. [\[Continue Reading\]](#)

Challenges (cont.)

Monday, 27 May | 11:00 – 12:30 EEST

Room: Marinos

Challenge 2: Cell Tracking Challenge 2024 (CTC)<https://celltrackingchallenge.net>

Authors: Michal Kozubek, Main Coordinator, Masaryk University, Brno
Alexandre Cunha, California Institute of Technology, Pasadena, CA
Martin Maška, Masaryk University, Brno
Erik Meijering, University of New South Wales, Sydney
Arrate Muñoz-Barrutia, Universidad Carlos III de Madrid, Madrid
Carlos Ortiz de Solórzano, Center for Applied Medical Research, Pamplona
Tammy Riklin Raviv, Ben-Gurion University of the Negev, Beer-Sheva
Johannes Stegmaier, RWTH Aachen University, Aachen
Virginie Uhlmann, BioVisionCenter, University of Zurich and European Bioinformatics Institute (EMBL-EBI), Hinxton

Abstract: The Cell Tracking Challenge (CTC) was launched in 2012, with the aim of fostering the development of novel, robust cell segmentation and tracking algorithms, and helping the developers with the evaluation of their new algorithmic developments. Over its more than a decade long existence, six fixed-deadline ISBI challenge editions have been organized, and since February 2017, the challenge is open for online submissions that are monthly evaluated, ranked, and posted on the challenge website. So far, two benchmarks have been offered, namely segmentation-and-tracking benchmark (evaluating segmentation and tracking performance) and segmentation-only benchmark (evaluating purely segmentation performance, no tracking part is required). A detailed description of the focus and history of the CTC can be found at <http://celltrackingchallenge.net/> and in the new open-access Nature Methods summary of the 10 years of its existence. The CTC is in constant evolution, and – as we did in the previous six editions attached to ISBI 2013–2015 and ISBI 2019–2021 – we plan to introduce some novelties in this new ISBI-sponsored challenge event.

Specifically, in this new 7th edition, the participants will be encouraged to submit further solutions to the recently opened generalizability tasks – either in the frame of the segmentation-and-tracking benchmark (Task 1) or the segmentation-only benchmark (Task 2). The generalizability tasks focus on the development of methods that exhibit better generalizability and work across most, if not all, of the existing datasets, instead of being optimized for one or a few datasets only. These tasks were established for the ISBI 2021 edition, and their first results were reported in the above-mentioned paper, but no further results have been received since then. Furthermore, a new tracking-only – more precisely linking-only benchmark (Cell Linking Benchmark) will be introduced to complement the segmentation-only benchmark for those who want to evaluate purely the object linking methods without having to supply segmentation results. Such a benchmark has been missing in the CTC portfolio and it is demanded by the CTC participants and the scientific community at large. Participants will be encouraged to supply ideally generalizable solutions (Task 3) working across 13 preselected datasets but will also be able to submit dataset-specific solutions (Task 4) for datasets of their choice.

Challenges (cont.)

Tuesday, 28 May | 14:00 – 15:30 EEST | 16:00 – 17:30 EEST

Room: MC3.2

Challenge 5: Justified Referral in AI Glaucoma Screening (JUSTRAIGS)

<https://justraigs.grand-challenge.org/>

Organizers: Koenraad A. Vermeer, Rotterdam Ophthalmic Institute, Rotterdam Eye Hospital
Hans G. Lemij, Rotterdam Ophthalmic Institute, Rotterdam Eye Hospital
Siamak Yousefi, Department of Ophthalmology, Department of Genetics, Genomics, and Informatics, Data Mining and Machine Learning (DM2L) Laboratory, University of Tennessee Health Science Center
Yeganeh Madadi, Department of Ophthalmology, University of Tennessee Health Science Center
Hina Raja, Department of Ophthalmology, University of Tennessee Health Science Center

Abstract: Glaucoma is a leading cause of irreversible blindness and impaired vision. In its early stages, the disease is typically asymptomatic. With more advanced glaucoma, the visual field is affected; as a result, patients stumble more often, bump into objects and other people, and may be more often involved in traffic accidents and falls. Only in the late stages of the disease, are patients more aware of their visual impairment. They may experience trouble reading, suffer from night-blindness, or suffer from other symptoms of impaired vision. Once detected, glaucoma can be treated so that any disease progression be effectively stopped or slowed down, but the damage cannot be repaired. Early detection and timely treatment of this disease can, therefore, avoid visual impairment; early detection could be facilitated through population-based glaucoma screening. Glaucoma affects the optic nerve, i.e., the connection between the eye and the brain; this disease is also known as glaucomatous optic neuropathy (GON). [\[Continue Reading\]](#)

Challenges (cont.)

Wednesday, 29 May | 08:30 – 10:00 EEST | 16:00 – 17:30 EEST

Room: MC3.4

Challenge 1: BRATS Generalizability Across Tumors (BRATS-GOAT)

https://www.synapse.org/brats_goat

Lead Organizers:	Gian Marco Conte, MD, PhD Department of Radiology, Mayo Clinic Ujjwal Baid, PhD Indiana University Spyridon Bakas, PhD Indiana University
Associate organizing committee:	Mariam Aboian, Department of Radiology and Biomedical Imaging, Yale University Maruf Adewole, Medical Artificial Intelligence (MAI) Lab, Crestview Radiology Ltd. Jake Albrecht, Sage Bionetworks Udunna Anazodo, Montreal Neurological Institute, McGill University / Medical Artificial Intelligence (MAI) Lab, Crestview Radiology Ltd. Evan Calabrese, Duke Center for Artificial Intelligence in Radiology (DAIR), Department of Radiology, Division of Neuroradiology, Duke University Medical Center Verena Chung, Sage Bionetworks Anastasia Janas, Department of Radiology and Biomedical Imaging, Yale University

Abstract: The International Brain Tumor Segmentation (BraTS) challenge has been focusing, since its inception in 2012, on the generation of a benchmarking environment and a dataset for the delineation of adult brain gliomas. The focus of BraTS2023 challenge remained the same in terms of generating the common benchmark environment, while the dataset expands into explicitly addressing 1) the same adult glioma population, as well as 2) the underserved sub-Saharan African brain glioma patient population, 3) brain/intracranial meningioma, 4) brain metastasis, and 5) pediatric brain tumor patients. Although segmentation is the most widely investigated medical image processing task, the various challenges have been organized to focus only on specific clinical tasks. That is, each segmentation method was evaluated exclusively on the patients population it was trained on in each sub-challenge. In this challenge, we aim to organize the Generalizability Assessment of Segmentation Algorithms Across Brain Tumors. The hypothesis is that a method capable of performing well on multiple segmentation tasks will generalize well on unseen tasks. Specifically, in this task, we will be focusing on assessing the algorithmic generalizability beyond each individual patient population and focus across all of them. Importantly, although each MR exams will undergo the same preprocessing pipeline, including an intensity normalization step, there are characteristics of each exam that will not be affected (i.e., different number of lesions per exam, different location within the brain, etc.) preserving the generalizability aspect of the challenge.

Thursday, 30 May | 13:00 – 14:30 EEST

Room: Lecture

Challenge 3: Light My Cells: Bright Field to Fluorescence Imaging Challenge 2024 (LIGHTMYCELLS)

<https://lightmycells.grand-challenge.org/>

Authors:	Dorian Kauffmann, Challenge Project engineer, at France Bioimaging Infrastructure (FBI) Emmanuel Faure, CNRS researcher (CNRS-UM) & FBI.data mission officer Guillaume Gay, Research engineer for the FBI data project Edouard Bertrand, Research Director and Scientific Director of France Bioimaging Infrastructure (FBI) Thomas Walter, Professor at Mines Paris and Director of the Centre for Computational Biology (CBIO) Christophe Zimmer, Research Director at Institut Pasteur
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Abstract: The Light My Cells France-Bioimaging challenge aims to contribute to the development of new image-to-image ‘deep-label’ methods in the fields of biology and microscopy. The main task is to predict the best focus image of multiple fluorescently labelled organelles from label-free transmitted-light images. In order to make them usable, the aim of this challenge is to produce new open source methods that can handle a large acquisition variability: Z-focus, multiple channels, acquisition sites, input-modalities (Bright Field, Phase Contrast & Differential Interference Contrast or DIC), instruments, magnifications, cells and markers. The high variability of the database is possible thanks to the structuring role of the France-Bioimaging national infrastructure, which federates 23 imaging acquisition sites distributed all over France. [\[Continue Reading\]](#)

Challenges (cont.)

Thursday, 30 May | 13:00 – 14:30 EEST

Room: MC2

Challenge 6: Towards 3D Atlas of the Human Body

<https://codalab.lisn.upsaclay.fr/competitions/16919>

Organizers:	Wenxuan Li, Johns Hopkins University Yu-Cheng Chou, Johns Hopkins University Jieneng Chen, Johns Hopkins University Qi Chen, University of Science and Technology of China Chongyu Qu, Johns Hopkins University Alan Yuille, Johns Hopkins University Zongwei Zhou, Johns Hopkins University
Technical Support:	Yaoyao Liu, Johns Hopkins University Angtian Wang, Johns Hopkins University Junfei Xiao, Johns Hopkins University Yucheng Tang, NVIDIA
Experts:	Xiaoxi Chen, Shanghai Jiao Tong University Jincheng Wang, The First Affiliated Hospital, Zhejiang University School of Medicine
Trainees:	Huimin Xue, The First Hospital of China Medical University Yixiong Chen, Johns Hopkins University Yujiu Ma, Shengjing Hospital of China Medical University Yuxiang Lai, Southeast University Hualin Qiao, Rutgers University Yining Cao, China Medical University Haoqi Han, China Medical University Meihua Li, China Medical University Xiaorui Lin, China Medical University Yutong Tang, China Medical University Jinghui Xu, China Medical University

Abstract: Variations in organ sizes and shapes can indicate a range of medical conditions, from benign anomalies to life-threatening diseases. Precise organ volume measurement is fundamental for effective patient care, but manual organ contouring is extremely time-consuming and exhibits considerable variability among expert radiologists. Artificial Intelligence (AI) holds the promise of improving volume measurement accuracy and reducing manual contouring efforts. We formulate our challenge as a semantic segmentation task, which automatically identifies and delineates the boundary of various anatomical structures essential for numerous downstream applications such as disease diagnosis, prognosis, and surgical planning. Our primary goal is to promote the development of AI algorithms and to benchmark the state of the art in this field. The BodyMaps challenge particularly focuses on assessing and improving the generalizability and efficiency of AI algorithms in medical segmentation across diverse clinical settings and patient demographics. In light of this, the innovation of our BodyMaps challenge includes the use of (1) large-scale, diverse datasets for both training and evaluating AI algorithms, (2) novel evaluation metrics that emphasize the accuracy of hard-to-segment anatomical structures, and (3) penalties for algorithms with extended inference times. Specifically, this challenge involves two unique datasets. First, AbdomenAtlas, the largest annotated dataset [Qu et al., 2023, Li et al., 2023], contains a total of 10,142 three-dimensional computed tomography (CT) volumes. In each CT volume, 25 anatomical structures are annotated by voxel. AbdomenAtlas is a multi-domain dataset of pre, portal, arterial, and delayed phase CT volumes collected from 88 global hospitals in 9 countries, diversified in age, pathological conditions, body parts, and race background. The AbdomenAtlas dataset will be made available to the public progressively during the challenge period and the participants will be encouraged to use any other public/private datasets for training AI algorithms. Second, W-1K is a proprietary collection of 1,000 CT volumes, where 15 anatomical structures are annotated by voxel. The CT volumes and annotations of W-1K will be reserved for external validation of AI algorithms. The final score will be calculated on the W-1K dataset, measuring both segmentation performance and inference speed of the AI algorithms. Note that the segmentation performance will not only be limited to the average segmentation performance but also prioritize the performance of hard-to-segment structures. We hope our BodyMaps challenge can set the stage for larger-scale clinical trials and offer exceptional opportunities to practitioners in the medical imaging community.

Industry Day

Monday, 27 May | 09:00 – 18:00 EEST

Room: Skalkotas Auditorium

Abstract: After a terrific inaugural event at ISBI 2023, Industry Day is back this year! It will bring outstanding companies in our field to present and discuss projects as well as products relevant to the ISBI community. There will also be a networking lunch where industry and academic researchers can exchange ideas for collaboration, share experiences and speak on entrepreneurship and fresh opportunities in the industry. Finally, we will organize again a Pitch Competition with great prizes! We are looking forward to seeing you there!



Angelos Amditis, PhD
Institute of Communication and Computer Systems (ICCS)



Angie Fasoula, PhD
Wavelia, MVG Industries



Sanna Gaspard, PhD
Rubitection Inc.



Ira Ktena, PhD
Google Deepmind



George Loudos, PhD
BIOEMTECH



Anant Madabhushi, PhD
Emory University



Constantinos Papadias, PhD
The American College of Greece



Vassilis Papakonstantinou
Blue Dome Capital



Piotr Slomka, PhD, FACC, FASNC
Cedar-Sinai LA



Thanos Stavropoulos, PhD
Pfizer



Jared Vicory, PhD
Kitware



Christos Xanthis, PhD
Corsmed AB

Industry Day (cont.)

	Opening Remarks
09:00 – 10:30	Putting Imaging Software in Clinicians' Hands: The Research to Clinical Practice Pathway <i>Piotr Slomka, Cedar-Sinai LA</i>
	From Research Code to Medical Products: A Medical Device Software Development <i>Jared Vicory, Kitware</i>
	Corsmed: The 10x MRI And the Future of Healthcare <i>Christos Xanthis, Corsmed AB</i>
	Wavelia Microwave Breast Imaging: Opportunities and Challenges Towards Clinical Adoption <i>Angie Fasoula, Wavelia, MVG Industries</i>
10:30 – 11:00	Coffee Break
11:00 – 12:30	Welcome Presentation About a Winning Story: Rubitection <i>Sanna Gaspard, Rubitection</i>
	Pitch Competition
12:30 – 14:00	Networking Lunch
15:30 – 16:30 “Pharma-meets-imaging”	From Designing Preclinical Imaging Prototypes to Working with The Larger <i>George Loudos, BIOEMTECH</i>
	Unleashing The Power of Open Innovation: Collaborations with The Greek Ecosystem <i>Thanos Stavropoulos, Pfizer</i>
	Bringing The Benefits of Generative AI To Healthcare Through Responsible Innovation <i>Ira Ktena, Google Deepmind</i>
16:30 – 17:00	Coffee Break
17:00 – 18:00	Panel Discussion <i>A. Madabhushi, V. Papakonstantinou, C. Papadias, A. Amditis, A. Fasoula, G. Loudos, Ch. Xanthis</i>
	Awards Closing Remarks

Academic Software Demos

Selected ISBI 2024 participants will have the opportunity to present to the ISBI community their solutions, software, new concepts etc. via dedicated software demonstration sessions within the conference venue. The academic software demo sessions will aim to showcase recent developments in the field, software used in ISBI 2024 papers, all relevant to the ISBI community. The sessions are addressed to researchers, students, startups, entrepreneurs etc. with an innovative solution to demonstrate.

Tuesday, 28 May | 14:30 – 17:30 EEST

Room: Skalkotas Auditorium Foyer

Academic Software Demo Session 1

- MorphoNet 2.0: How can you correct a 3D segmented dataset in just a few clicks? - *Emmanuel Faure*
 - fMRIStroke: A pre-processing pipeline for fMRI data from stroke patients - *Alix Lamouroux*
-

Wednesday, 29 May | 14:30 – 17:30 EEST

Room: Skalkotas Auditorium Foyer

Academic Software Demo Session 2

- AtheroRisk: A carotid ultrasound video analysis system for stroke risk stratification - *Michalis Gemenaris, Georgia Liapi, Christos Markides, Christos Loizou, Efthyvoulos Kyriacou*
- Advancing the frontier of web-based neuroimaging - *Sergey Plis*
- Clinical virtual/augmented reality prototypes for cancer diagnosis, surgical intervention, and medical education - *Zongwei Zhou*
- SPyRiT: A Python package for deep single-pixel image reconstruction - *Nicolas Ducros*

Art in Biomedical Imaging

Join us for a fascinating exploration at the intersection of art and biomedical imaging, as we present a unique line of events during ISBI 2024. This innovative gathering promises to captivate the imagination, merging the realms of science and creativity in a celebration of ingenuity and expression.

Monday, 27 May | 17:00 – 18:00 EEST

Room: Banqueting Hall

Exploring the Intersection of Biomedical Imaging and Creative Expression

Abstract: When biomedical imaging is used as a medium in art practice, new pathways of endless creative possibilities unfold. In this session, we will explore the frontiers of this unique connection, as expressed through the artISBI2024 series of innovative activities that merge science and engineering with creativity. These include the art exhibition by Maria Lambropoulou, the live art performance by Sotiris Fokeas (SOTEUR), and the art-in-biomedical imaging competition organized for the first time in the context of ISBI. The transformative power and social impact of art inspired by biomedical imaging will be discussed, through the paradigm of MEDinART (www.MEDinART.eu), the global network of 200 artists from more than 30 countries, who are inspired by biomedical sciences and imaging. The concept of bio-inspired signal processing will also be explored in terms of how nature's functionality could lead to new perspectives of biosignal analysis, showcasing the interplay between biomedical engineering thinking and nature translation.

- Panel presentation and discussion
 - Art exhibition by Maria Lambropoulou; live art performance by Sotiris Fokeas (SOTEUR).
 - Art-in-Biomedical Imaging competition artISBI2024, and presentation of the ten finalists.
- Vasia Hatzi: "Beyond X-rays: Unveiling the social impact of biomedical-imaging-inspired art through the global art network MEDinART"
- Leontios Hadjileontiadis: "Bioinspiration in signal processing and music"

Monday, 27 May | 14:00 – 18:00 EEST

Tuesday, 28 May | 10:00 – 17:30 EEST

Wednesday, 29 May | 10:00 – 17:30 EEST

Thursday, 30 May | 10:00 – 17:30 EEST

Room: Skalkotas Auditorium Foyer

artISBI24 Exhibition

Visit an original exhibition of histological images on canvas or silk. Elaborate cellular formations and magical shadows are revealed under the scientific microscope lens of the Professor of Medicine Maria Lambropoulou.

It is worth noting that her work will remain in history through the original and unique commemorative five-stamp series "Science and Art through the Microscope". These stamps were released by the Hellenic Post Office on 19.03.2018 and traveled all over the world. Children can also discover cellular beauty by flipping through the pages of her book entitled "Discovering Our Cells", by Broken Hill Publishers LTD, 2024.

Maria Lambropoulou is a Pathologist and Professor of Histology – Embryology in the Department of Medicine at the Democritus University of Thrace. Due to her expertise in histology, she has ingeniously combined Science and Art, thus recommending an original teaching approach in both classrooms and laboratories, aiming for effortless assimilation of medical knowledge. Moreover, she has organized several workshops and has coordinated scientific exhibitions of artistic histological imagery, which have received excellent reviews. At the same time, some of her works have been awarded in Greece and abroad.

<http://www.medinart.eu/works/maria-lambropoulou/>

Art in Biomedical Imaging (cont.)

Open during all conference hours.

Room: Venue Foyer

Life Canvas: Connecting biological scales through imaging

Experience the convergence of science and art in a spectacular showcase at ISBI 2024 as Soteur, a renowned multidisciplinary artist, embarks on a live painting creation inspired by cutting-edge imaging technology. As part of the Art-in-Biomedical-Imaging line of events, you can witness the fusion of creativity and scientific exploration as the artist translates concepts from the field of imaging technologies that connect biological scales -such as proteins to cells and cells to organisms- into a captivating work of art before your eyes. Engage with Soteur as he draws inspiration from biological structures revealed through imaging modalities and gain a deeper understanding of the transformative power of artistic interpretation in the realm of biomedical research.

Soteur will be working on a 2 m by 3 m canvas in real time in the foyer of the Conference venue.

Sotiris Fokeas "SOTEUR" is a human, multidisciplinary artist born and raised in Athens, Greece. He graduated from the Athens School of Fine Arts (ASFA) in 2013 and from the Master's in Fine Arts Program of ASFA in 2020. His work revolves around street art, conceptual art, installations, and performance. At its core, it has always been about the polarity between private and public spaces, with the public being either the streets or the internet through social media platforms.

Find more about Soteur on his website (<https://sotirisfokeas.com/about/>) or explore examples of his work on his Instagram account (@soteur).

Social Events

Monday, 27 May | 12:30 – 14:00 EEST

Room: Skalkotas Auditorium Foyer

Networking Lunch

Students, young professionals, and start uppers will interact with representatives of world-renowned companies in biomedical imaging research. This makes for the perfect setting to share experiences and discuss entrepreneurship and fresh opportunities in the industry.

Reservation upon registration is required for this event due to space and catering limitations.

Monday, 27 May | 20:00 – 22:00 EEST

Location: Zappeion Mansion (Leof. Vasilissis Olgas, Athina 105 57)

Transportation: On foot 27 minutes (2km), by metro (2 stations) or by bus

Welcome Reception

The welcome reception will be held at Zappeion Mansion, an iconic venue next to the National Garden, which was originally built for the first modern Olympic Games. This historic site has hosted numerous culturally significant events and holds a unique place in both Olympic history and Greece's cultural identity.

Our volunteers will be happy to accompany you on a walk from the Symposium venue to Zappeion Mansion (approximately 25-30 minutes), passing through a series of historical and cultural sites. These include the impressive Runner (a.k.a. Dromeas) glass and iron statue, the National Gallery, the Athens Conservatoire, and the Panathenaic Stadium. It's the perfect opportunity to experience the city's vibes up close and at a relaxed pace! If you prefer a different way of getting around, buses will also be available to transport you to Zappeion Mansion.

This event is included in the conference registration. A limited number of extra tickets will be available.

Tuesday, 28 May | 07:30 – 08:30 EEST

Room: Allegro Hall

Breakfast with Leaders

Take advantage of this exclusive opportunity! Students and early career researchers will interact with world-renowned leaders in biomedical imaging research who are excited to share their insights into navigating a career in biomedical imaging as a young researcher and professional. **Reservation upon registration is required for this event due to space and catering limitations.**

Tuesday, 28 May | 12:30 – 14:00 EEST

Room: Allegro Hall

Lunch with Leaders

Take advantage of this exclusive opportunity! Students and early career researchers will interact with world-renowned leaders in biomedical imaging research who are excited to share their insights into navigating a career in biomedical imaging as a young researcher and professional. **Reservation upon registration is required for this event due to space and catering limitations.**

Social Events (cont.)

Tuesday, 28 May | 19:30 – 23:30 EEST

Meeting Location: En Aithria Athens (Astiggos 13, Athina 105 55)

Transportation: On foot 43 minutes (3.3 km), by metro (3 stations and a 3 minute walk)

Acropolis under the stars – Students and Young Professionals Event

Once the symposium sessions are concluded for the day, join the Students and Young Professionals for a networking experience. Unwind with your colleagues while discussing careers, entrepreneurship, and opportunities in a fun and casual setting.

Walk in Athens's historic center, learn about the city's rich past, and explore the structures on a fascinating voyage back in time. Visit locations of cultural and historical significance, carefully selected by the archaeologist Vassiliki Zapatina, who also curated snippets of information and facts for all of them. Find these snippets in the dedicated conference application, along with guidelines and maps for the route, and also discuss them with conference volunteers present in each location. Explore the city's historical layers and discover how they converge and align seamlessly with the vibrant modern city center.

Finish your walk in a lovely roof garden with a view of the Acropolis for dinner and drinks. Make new acquaintances and enjoy the Athenian sunset while indulging in delicious culinary delights or sipping a glass of wine. The setting will provide the perfect backdrop for an unforgettable evening of mingling and relaxation. **Reservation upon registration is required for this event due to space and catering limitations.**

Wednesday, 29 May | 12:00 – 13:30 EEST

Room: Allegro Hall

Women in Biomedical Imaging Lunch sponsored by WiSP

Join us for the Women in Biomedical Imaging Lunch, where we will have the pleasure of enjoying conversations with accomplished women in biomedical imaging from academia and industry. They will share their personal stories and experiences of overcoming challenges and achieving career success. This event is a fantastic opportunity to network, connect, and learn from the inspiring stories of our female leaders. Don't miss this unique chance to be part of an engaging discussion and celebrate the achievements of women in biomedical imaging. **Reservation upon registration is required for this event due to space and catering limitations.**

Wednesday, 29 May | 18:00 – 20:00 EEST

Meeting Location: Entrance of the conference venue. Transportation is provided by bus.

Visit to the National Archaeological Museum

Dive into history by visiting the world's richest collection of Antiquity artifacts.

The National Archaeological Museum of Athens is the largest archaeological museum in Greece and one of the most important museums in the world devoted to ancient Greek art. It was founded at the end of the 19th century to house and protect antiquities from all over Greece, displaying their historical, cultural, and artistic value. The Museum is housed in an imposing neo-classical building and features the world's richest collection of Greek Antiquity artifacts. Its collection also includes relics from prehistoric times as well as several pieces of Egyptian art. The oldest archaeological library of the Archaeological Service is also located within the museum's premises, with thousands of volumes dating back to the 17th century.

The Museum curators will offer a tour to ISBI 2024 participants. **Reservation upon registration is required for this event due to space limitations.**

Social Events (cont.)

Wednesday, 29 May | 17:30 – 20:00 EEST

Meeting Location: Panathenaic Stadium

Transportation: On foot 24 minutes (1.8 km), by metro (3 stations) or by public bus number 550, 4 stops (Stadio)

Symbolic Marathon

Where Science Meets Legacy: Uniting History and Athletic Excellence at the Panathenaic Stadium. Seize the opportunity to feel the Ancient Olympic Spirit.

ISBI 2024 invites you to join a symbolic marathon at the unique archaeological monument of the Panathenaic Stadium, which hosted the revival of the Olympic Games. The stadium, originally built in the 4th century BCE and reconstructed for the modern Olympics in 1896, serves as a symbolic link between ancient and contemporary athletic traditions. Its hallowed grounds echo with the feats of ancient Greek athletes and the ideals of fair competition, and the joy found in effort, embodying the Olympic ideals.

Hosting a symbolic athletic event at this historic venue not only pays homage to the origins of the Games but also fosters a sense of continuity and unity across centuries, emphasizing the enduring power of sports to inspire, unite, and celebrate human achievement.

The Panathenaic Stadium stands as a living testament to the timeless values of athleticism and sportsmanship, making any event held within its storied walls a poignant and culturally resonant experience.

The ISBI 2024 Symbolic Marathon will include a run of 0-10 laps. The primary goal for many marathon participants is not necessarily to secure victory but rather to complete the race and achieve a personal accomplishment. However, if you don't wish to run or walk, this experience will make for a rare opportunity to revive your historical memory, immersed in the white Attic marble of a monument of global heritage.

Monday, 27 May 2024

	SKALKOTAS	MARINOS	LECTURE	MC2	MC3.2	MC3.3	MC3.4
08.00 – 19.30				Registration (Skalkotas Auditorium foyer)			
14.00 – 18.00			Art meets Biomedical Imaging (Skalkotas Auditorium foyer)				
09.00 – 10.30	Industry session (Skalkotas Auditorium)	Challenge 4 Diminished reality for emerging applications in medicine through inpainting (DREAMING)	Tutorial 2 Brain connectome analysis with graph neural networks Part I	Tutorial 3 Computational pathology tutorial: clinical insights and methodological advances Part I	Tutorial 7 Federated learning in healthcare Part I	Workshop 1 Through the lens of equality: a workshop on gender-informed research	Workshop 4 Machine learning for neurodegenerative disorders
10.30 – 11.00			Coffee break (Skalkotas Auditorium foyer & Music Library)				
11.00 – 12.30	Industry session (Skalkotas Auditorium)	Challenge 2 Cell tracking challenge 2024 (CTC)	Tutorial 2 Brain connectome analysis with graph neural networks Part II	Tutorial 3 Computational pathology tutorial: clinical insights and methodological advances Part II	Tutorial 7 Federated learning in healthcare Part II	Workshop 2 PROC-AI: integrating imaging data and AI models for supporting precision care through prostate cancer's continuum	Workshop 3 Cross-society innovation for translational applications of medical AI
12.30 – 14.00			Lunch (on your own) Networking lunch (Skalkotas Auditorium foyer)				
14.00 – 15.30			Opening remarks Plenary talk: Anant Madabhushi, Robert W Woodruff Professor of Biomedical Engineering, Emory University Getting serious about AI in healthcare: retrospective and prospective validation Musical performance (Banqueting Hall)				
15.30 – 16.30	Pharma session (Skalkotas Auditorium)	Oral session Structural and functional brain connectivity	Oral session Signal and image reconstruction	Oral session Model driven classification and segmentation	Oral session Validation and explainability	Special session 5 Interpretable imaging genetics: towards the molecular mechanisms underlying brain structure and function	Special session 1 Simplical complex data for biomedical images

TECHNICAL PROGRAM OVERVIEW

ISBI 2024
ATHENS GREECE



Monday, 27 May 2024 (cont.)

	SKALKOTAS	MARINOS	LECTURE	MC2	MC3.2	MC3.3	MC3.4
16.30 – 17.00			Coffee break (Music Library & Skalkotas Auditorium foyers)				
17.00 – 18.00	Industry session (Skalkotas auditorium)	Oral session Novel ML and DL methods for image segmentation	Oral session Dual modality deep learning	Oral session MRI in Alzheimer's disease	Oral session Deep learning methods and decision support (I)	Oral session Machine learning and data mining	Special session 2 Imaging molecules within the cell by 3D electron microscopy
17.00 – 18.00 (cont.)			artISBI2024 session (Banqueting Hall)				
18.00 – 19.15		Panel Translating Artificial Intelligence Research into Clinical Practice: Challenges and Perspectives in Biomedical Imaging (Banqueting Hall)					
20.00 – 22.00		Welcome Reception					

Tuesday, 28 May 2024

	SKALKOTAS	MARINOS	LECTURE	MC2	MC3.2	MC3.4
08.00 – 17.30			Registration (Skalkotas Auditorium foyer)			
10.00 – 17.30			Art meets Biomedical Imaging (Skalkotas Auditorium foyer)			
07.30 – 08.30			Breakfast with leaders (Allegro Hall)			
08.30 – 10.00	Oral session Dynamic MRI	Oral session Image reconstruction	Oral session Deep learning methods and decision support (II)	Oral session Foundation models	Oral session Image synthesis	Oral session Surgery guidance and planning
10.00 – 11.30			Poster session 1 Coffee served (Banqueting Hall foyer)			
11.30 – 12.30			Plenary talk Joseph Sifakis, Emeritus Research Director at Verimag – Artificial Intelligence: Where we are, where we are going (Banqueting Hall)			
12.30 – 14.00			Lunch (on your own) Lunch with leaders (Allegro Hall)			
14.00 – 15.30	Oral session Biological structural and cellular segmentation	Oral session Deep learning approaches for image segmentation	Oral session Machine learning and image uncertainty	Tutorial 4 DIMEDIA: diffusion models in medical imaging and analysis Part I	Challenge 5 Justified referral in AI glaucoma screening (JUSTRAIGS) Part I	Special session 6 Applied medical imaging AI research: clinical and translational perspectives
14.30 – 17.30			Academic Software Demo Session 1 MorphoNet 2.0: how can you correct a 3D segmented dataset in just a few clicks? fMRIStroke: a pre-processing pipeline for fMRI data from stroke patients			
15.30 – 16.00			Coffee break (Music Library & Skalkotas Auditorium foyers)			
16.00 – 17.30	Oral session Brain connectivity	Oral session Image segmentation	Oral session Emerging methods for trustworthy AI (I)	Tutorial 4 DIMEDIA: diffusion models in medical imaging and analysis Part II	Challenge 5 Justified referral in AI glaucoma screening (JUSTRAIGS) Part II	Oral session Machine learning and image quality
18.30 – 23.30			Students and Young Professionals event			

Wednesday, 29 May 2024

	SKALKOTAS	MARINOS	LECTURE	MC2	MC3.2	MC3.4
08.00 – 17.30			Registration (Skalkotas Auditorium foyer)			
10.00 – 17.30			Art meets Biomedical Imaging (Skalkotas Auditorium foyer)			
08.30 – 10.00	Oral session CT image segmentation	Special ses-sion 3 MRI beyond the norm: pioneering advances in engineering, image processing, and safety	Oral session Feature extraction and classification in histopathology images	Oral session Ultrasound imaging	Oral session Tumor detection and classification	Challenge 1 BRATS generalizability across tumors (BRATS-GOAT) Part I
10.00 – 11.00			Poster session 2 Coffee served (Banqueting Hall foyer)			
11.00 – 12.00			Plenary talk Katherine Ferrara, Professor and Division Chief, Molecular Imaging Program at Stanford Personalized imaging and theragnostics (Banqueting Hall)			
12.00 – 13.30			Lunch (on your own) Women in SPS/BMI lunch (Allegro Hall)			
13.30 – 14.30		Clinical focus session Imaging and AI opportunities in oncology integrated diagnostics (Banqueting Hall)		Clinical focus session Clinical translation of AI for neurodegenerative and neuropsychiatric disease (Skalkotas Auditorium)		
14.30 – 16.00			Poster session 3 Coffee served (Banqueting Hall foyer)			
14.30 – 17.30			Academic Software Demo Session 2 AtheroRisk: a carotid ultrasound video analysis system for stroke risk stratification Advancing the frontier of web-based neuroimaging Clinical virtual/augmented reality prototypes for cancer diagnosis, surgical intervention, and medical education (Skalkotas Auditorium foyer) SPyRiT: a Python package for deep single-pixel image reconstruction (Skalkotas Auditorium foyer)			
16.00 – 17.30	Oral session Cerebrovascular MRI and fMRI	Oral session Anatomical segmentation	Oral session Biological cell and bacteria tracking	Oral session Multimodality fusion (I)	Special ses-sion 4 Brain graph signal processing	Challenge 1 BRATS generalizability across tumors (BRATS-GOAT) Part II
18.00 – 20.00			Symbolic Marathon/Visit to the National Archaeological Museum			



Thursday, 30 May 2024

	SKALKOTAS	MARINOS	LECTURE	MC2	MC3.2	MC3.4
08.00 – 17.30			Registration (Skalkotas Auditorium foyer)			
10.00 – 17.30			Art meets Biomedical Imaging (Skalkotas Auditorium foyer)			
08.30 – 9.30	Oral session Histopathological and electron microscopy imaging	Oral session MRI and brain diseases	Oral session Multimodality fusion	Oral session X-ray methods and applications	Oral session Deep learning and generative AI	Oral session Skin image analysis
09.30 – 11.00			Poster session 4 Coffee served (Banqueting Hall foyer)			
11.00 – 12.00			Plenary talk Francis Bach, Machine learning Group leader, Inria, Ecole Normale Supérieure An alternative view of denoising diffusion models (Banqueting Hall)			
12.00 – 13.00			Lunch (on your own)			
13.00 – 14.30	Tutorial 5 Explainable artificial intelligence in biomedical imaging Part I	Tutorial 6 Fairness of AI in medical imaging (FAIMI) Part I	Challenge 3 Light my cells: bright field to fluorescence imaging challenge 2024 (LIGHTMYCELLS)	Challenge 6 Towards 3D atlas of human body	Tutorial 1 AI tools for computational neuroanatomy	Tutorial 8 National Cancer Institute Imaging Data Commons as a resource to support transparency, reproducibility, and scalability in imaging AI
14.30 – 15.00			Coffee break (Music Library & Skalkotas Auditorium foyers)			
15.00 – 16.30	Tutorial 5 Explainable artificial intelligence in biomedical imaging Part II	Tutorial 6 Fairness of AI in medical imaging (FAIMI) Part II	Oral session Biological tissue characterization	Oral session Brain neural networks	Oral session Optical, MRI and CT synthesis approaches	Oral session Vascular image analysis
16.30 – 17.30					Tutorial 1 Demo session AI tools for computational neuroanatomy (Skalkotas Auditorium foyer)	Tutorial 8 Demo session National Cancer Institute Imaging Data Commons as a resource to support transparency, reproducibility, and scalability in imaging AI (Skalkotas Auditorium foyer)
16.30 – 17.30			Closing/Awards/ISBI2025 (Banqueting Hall)			

Technical Program: Monday, 27 May 2024

Registration

08:00 - 19:30

Skalkotas Auditorium Foyer

Industry Day

09:00 - 10:30

Skalkotas Auditorium

Opening Remarks

Putting imaging software in clinicians' hands: The research to clinical practice pathway

Piotr Slomka (Cedar-Sinai LA)

From research code to medical products: A medical device software development

Jared Vicory (Kitware)

Corsmed: The 10x MRI and the future of healthcare

Christos Xanthis (Corsmed AB)

Wavelia microwave breast imaging: opportunities and challenges towards clinical adoption

Angie Fasoula (Wavelia, MVG Industries)

Challenge 4: Diminished Reality for Emerging Applications in Medicine Through Inpainting (DREAMING)

09:00 - 10:30

Marinos

Opening + About the DREAMING challenge

Christina Gsaxner (Graz University of Technology)

8015: 3D surgical instrument collection for computer vision and extended reality

Gijs Luijten (University Medicine Essen)

1644: A Baseline Solution for the ISBI 2024 DREAMING Challenge

Timo van Meegdenburg (Institut für KI in der Medizin), Gijs Luijten (Institute of Artificial Intelligence in medicine), Jens Kleesiek (Institute for AI in Medicine (IKIM), University Hospital Essen), Behrus Puladi (RWTH Aachen University), André Ferreira (University of Minho), Jan Egger (Institute for AI in Medicine, University Hospital Essen), Christina Schwarz-Gsaxner (Graz University of Technology)

1642: Divide and conquer: video inpainting for diminished reality in low-resource settings

Zhou Ji Wu (Keio University), Ryosuke Seshimo (Keio University), Hideo Saito (Keio University), Mariko Isogawa (Keio University)

1643: ProPainter for Video Diminished Reality Inpainting

Pengze Li (University of Cambridge), Lihao Liu (University of Cambridge), Carola-Bibiane B Schönlieb (University of Cambridge), Angelica I Aviles-Rivero (University of Cambridge)

Awards + Closing

Gijs Luijten (University Medicine Essen)

Tutorial 2: Brain Connectome Analysis with Graph Neural Networks - Part I

09:00 - 10:30

Presenters: Carl Yang (Emory University), Hejie Cui (Emory University), Xuan Kan (Emory University)

Lecture

Tutorial 3: Computational Pathology Tutorial: Clinical Insights and Methodological Advances - Part I

09:00 - 10:30

Presenters: Maria Vakalopoulou (CentraleSupélec), Stergios Christodoulidis (CentraleSupélec), Dimitris Samaras (Stony Brook University), Ioannis Mountzios (Henry Dunant Hospital Center), Siddhesh Thakur (Indiana University), Kun Huang (Indiana University)
MC2

Tutorial 7: Federated Learning in Healthcare - Part I

09:00 - 10:30

Presenters: Sarthak Pati (Indiana University), Spyridon Bakas (Indiana University), Walter Riviera (Intel), Hasan Kassem (MLCommons)
MC3.2

Workshop 1: Through the Lens of Equality: A Workshop on Gender-Informed Research

09:00 - 10:30

Presenters: Maria Flouri (National Technical University of Athens), Eleni Karachaliou (Aristotle University of Thessaloniki)
MC3.3

Workshop 4: Machine Learning for Neurodegenerative Disorders

09:00 - 10:30

Presenters: Anubha Gupta (IIT-Delhi), Deepti R. Bathula (IIT-Ropar), Neelam Sinha (CBR-IISc), Selin Aviyente (Michigan State University)

MC3.4

Coffee Break

10:30 - 11:00

Music Library & Skalkotas Auditorium Foyers

Industry Day (cont.)

11:00 - 12:30

Skalkotas Auditorium

Welcome | Presentation about a winning story: Rubition

Sanna Gaspard (Rubition)

Pitch Competition

Challenge 2: Cell tracking challenge 2024 (CTC)

11:00 - 12:30

Marinos

Challenge Design and Anonymous Results

Michal Kozubek, Martin Maška

Presentations of the three best methods

Announcement of winners

Panel Discussion with CTC Steering Committee

Tutorial 2: Brain Connectome Analysis with Graph Neural Networks - Part II

11:00 - 12:30

Presenters: Carl Yang (Emory University), Hejie Cui (Emory University), Xuan Kan (Emory University)

Lecture

Tutorial 3: Computational Pathology Tutorial: Clinical Insights and Methodological Advances - Part II

11:00 - 12:30

Presenters: Maria Vakalopoulou (CentraleSupélec), Stergios Christodoulidis (CentraleSupélec), Dimitris Samaras (Stony Brook University), Ioannis Mountzios (Henry Dunant Hospital Center), Siddhesh Thakur (Indiana University), Kun Huang (Indiana University)
MC2

Tutorial 7: Federated Learning in Healthcare - Part II

11:00 - 12:30

Presenters: Sarthak Pati (Indiana University), Spyridon Bakas (Indiana University), Walter Riviera (Intel), Hasan Kassem (MLCommons)

MC3.2

Workshop 2: PROC-AI: Integrating Imaging Data and AI Models for Supporting Precision Care through Prostate Cancer's Continuum

11:00 - 12:30

Presenters: Manolis Tsiknakis (Hellenic Mediterranean University (HMU)), Nikolaos Papanikolaou (Champalimaud Foundation), Kostas Marias (Hellenic Mediterranean University (HMU)), Haridimos Kondylakis (Hellenic Mediterranean University (HMU)), Sara Colantonio (Italian National Research Council (ISTI-CNR))

MC3.3

Workshop 3: Cross-Society Innovation for Translational Applications of Medical AI

11:00 - 12:30

Presenters: Shandong Wu (University of Pittsburgh), Lei Xing (Stanford University)

MC3.4

Lunch - Monday (on your own)

12:30 - 14:00

Industry Lunch (Pre-registration required)

12:30 - 14:00

Skalkotas Auditorium Foyer

Art meets Biomedical Imaging - Monday

14:00 - 18:00

Skalkotas Auditorium Foyer

Opening Remarks & Plenary 1

14:00 - 15:30

Banqueting Hall

Chairs: Christos Davatzikos (University of Pennsylvania), Marius George Linguraru (Children's National Hospital/George Washington University)

Getting serious about AI in healthcare: retrospective and prospective validation

Anant Madabhushi, Robert W Woodruff Professor of Biomedical Engineering, Emory University

Industry Day (cont.) - "Pharma-meets-imaging"

15:30 - 16:30

Skalkotas Auditorium

From designing preclinical imaging prototypes to working with the larger pharmaceutical companies worldwide

George Loudos (BIOEMTECH)

Unleashing the power of open innovation: Collaborations with the Greek ecosystem

Thanos Stavropoulos (Pfizer)

Bringing the benefits of Generative AI to healthcare through responsible innovation

Ira Ktena (Google DeepMind)

Oral Session: Structural and functional brain connectivity

15:30 - 16:30

Marinos

Chair: Oliver Salvado (CSIRO)

1103: PRESERVING HUMAN LARGE-SCALE BRAIN CONNECTIVITY FINGERPRINT IDENTIFIABILITY WITH RANDOM PROJECTIONS

Duy Duong-Tran (United States Naval Academy), Mark Magsino (United States Naval Academy), Joaquin Goni (Purdue University), Li Shen (University of Pennsylvania)

1245: A NOVEL DEEP CLUSTERING FRAMEWORK FOR FINE-SCALE PARCELLATION OF AMYGDALA USING DMRI TRACTOGRAPHY

Haolin He (University of Electronic Science and Technology of China), Ce Zhu (University of Electronic Science & Technology of China), Le Zhang (University of Electronic Science and Technology of China), Yipeng Liu (University of Electronic Science and Technology of China), Xiao Xu (University of Electronic Science and Technology of China), Yuqian Chen (Harvard Medical School), Leo Zekelman (Harvard Medical School), Jarrett Rushmore (Boston University), Yogesh Rathi (Harvard Medical School), Nikos Makris (Harvard Medical School), Lauren J O'Donnell (Harvard Medical School), Fan Zhang (University of Electronic Science and Technology of China)

150: LEARNING FUNCTIONAL DYNAMICS FROM A MULTILAYER BRAIN NETWORK

Defu Yang (University of North Carolina at Chapel Hill), Jiaqi Zhao (Zhejiang Lab), Minghan Chen (Wake Forest University), Yitian Xue (Zhejiang Lab), Jingwen Zhou (Hangzhou Dianzi University), Shuai Wang (Hangzhou Dianzi University), Guorong Wu (UNC-CH), Wentao Zhu (Zhejiang Lab)

166: Anatomy-guided fiber trajectory distribution estimation for cranial nerves tractography

Lei Xie (Zhejiang University of Technology), Qingrun Zeng (Zhejiang University of Technology), Huajun Zhou (The Hong Kong University of Science and Technology), Guoqiang Xie (NO.215 Hospital of Shaanxi Nuclear Industry), Mingchu Li (Capital Medical University Xuanwu Hospital), Jiahao Huang (Zhejiang University of Technology), Jianan Cui (Zhejiang University of Technology), Hao Chen (The Hong Kong University of Science and Technology), Yuanjing Feng (Zhejiang University of Technology)

Oral Session: Signal and image reconstruction

15:30 - 16:30

Lecture

Chairs: Zhaolin Chen (Monash University), Stathis Hadjidemetriou (University of Limassol)

367: DIFFUSION POSTERIOR SAMPLING FOR SYNERGISTIC RECONSTRUCTION IN SPECTRAL COMPUTED TOMOGRAPHY

Corentin Vazia (Univ Bretagne Sud, LMBA), Alexandre Bousse (University of Western Brittany), Béatrice Vedel (Univ Bretagne Sud), Franck Vermet (Université de Bretagne Occidentale), Zhihan Wang (Université de Bretagne Occidentale), Thore Dassow (Université de Bretagne Occidentale), Jean Pierre Tasu (University Hospital Poitiers), Dimitris Visvikis (LaTIM, Inserm), Jacques Froment (Univ Bretagne Sud)

579: Fast Controllable Diffusion Models for Undersampled MRI Reconstruction

Wei Jiang (The University of Queensland), Zhuang Xiong (The University of Queensland), Feng Liu (The University of Queensland), Nan Ye (The University of Queensland), Hongfu Sun (University of Queensland)

698: Learning the Domain Specific Inverse NUFFT for Accelerated Spiral MRI using Diffusion Models

Trevor Chan (University of Pennsylvania), Chamith Rajapakse (University of Pennsylvania)

858: Sparse signal reconstruction for overdispersed low-photon count biomedical imaging using \mathbf{I}_p total variation

Yu Lu (University of California, Merced), Roummel Marcia (University of California, Merced)

Oral Session: Model driven classification and segmentation

15:30 - 16:30

MC2

Chairs: Guido Gerig (NYU Tandon School of Engineering), Konstantinos Marias (FORTH ICS)

47: Boosting Medical Image Classification with Segmentation Foundation Model

Pengfei Gu (University of Notre Dame), Zihan Zhao (Tianjin University), Hongxiao Wang (Capital Normal University), Yaopeng Peng (University of Notre Dame), Yizhe Zhang (Nanjing University of Science and Technology), Nishchal Sapkota (University of Notre Dame), Chaoli Wang (University of Notre Dame), Danny Z Chen (University of Notre Dame)

431: Text-guided Foundation Model Adaptation for Long-Tailed Medical Image Classification

Sirui Li (Southern University of Science and Technology), Li Lin (Southern University of Science and Technology, The University of Hong Kong), Yijin Huang (University of British Columbia), Pujin Cheng (Southern University of Science and Technology), Xiaoying Tang (Southern University of Science and Technology)

533: SAM-driven weakly supervised nodule segmentation with uncertainty-aware cross teaching

Xingyue Zhao (Xi'an Jiaotong University), Peiqi Li (Xi'an Jiaotong University), Xiangde Luo (University of Electronic Science and Technology of China), Meng Yang (Hunan Frontline Medical Technology Co., Ltd), Shi Chang (Central South University), Zhongyu Li (Xi'an Jiaotong University)

877: SimSAM: Zero-shot Medical Image Segmentation via Simulated Interaction

Benjamin Towle (University of Nottingham), Xin Chen (University of Nottingham), Ke Zhou (University of Nottingham)

Oral Session: Validation and explainability

15:30 - 16:30

MC3.2

Chair: Ioanna Chouvarda (Aristotle University of Thessaloniki)

104: Super-TrustScore: Reliable Failure Detection for Automated Skin Lesion Diagnosis

Junayed A Naushad (University of Oxford), Irina Voiculescu (University of Oxford), Irina D Voiculescu (University of Oxford)

626: Cross-Age and Cross-Site Domain Shift Impacts on Deep Learning-Based White Matter Fiber Estimation in Newborn and Baby Brains

Rizhong Lin (École Polytechnique Fédérale de Lausanne (EPFL), Lausanne University Hospital (CHUV) and Tongji University), Ali Gholipour (Boston Children's Hospital), Jean-Philippe Thiran (École Polytechnique Fédérale de Lausanne), Davood Karimi (Harvard), Hamza Kebiri (University of Lausanne (UNIL)), Meritxell Bach Cuadra (University of Lausanne)

382: VALIDATING STROKE LESION SEGMENTATION METHODS USING MRI IN CHILDREN: TRANSFERABILITY OF DEEP LEARNING MODELS

Emma Lhermitte (Université de Bretagne Occidentale)

1430: Bringing Interpretability and Medical Explainability to Deep Learning: Automatic Diagnosis of Age-Related Macular Degeneration

Lily Shi (The Harker School)

Special Session 5: Interpretable Imaging Genetics: Towards the Molecular Mechanisms Underlying Brain Structure and Function

15:30 - 16:30

MC3.3

Chairs: Lorenza Brusini (University of Verona), Vince Calhoun (Georgia State & Georgia Tech University)

1498: Whole brain genetic correlation of brain folding: An MRI Study in 8,740 Children

Fabrizio Pizzagalli (University of Turin)

1468: Interpretable multimodal deep learning for the integration of brain imaging and genomics data

Yu-Ping Wang (Tulane University)

8006: Enhancing Alzheimer's Research with AI and Informatics: Strategies for Mining Brain Imaging Genomics Data

Li Shen (University of Pennsylvania)

1574: Interpretable Differentiable Layers for Enhanced Understanding of Resting State Functional MRI

Sergey Plis (TReNDS center at Georgia State University)

BRAIN VOLUME AND GENES EXPRESSION ENDOPHENOTYPES FOR PARKINSON'S DISEASE

Fabrizio Pizzagalli (University of Turin)

Special Session 1: Simplicial complex data for biomedical images

15:30 - 16:30

MC3.4

Chair: Moo K. Chung (University of Wisconsin-Madison)

8001: Geometric Machine Learning for Analysis in Tetrahedral Meshes

Yalin Wang (Arizona State University)

1440: Advanced Graph Attention Network for Brain Functional Data

Anqi Qiu (National University of Singapore, Singapore); Nanguang Chen (National University of Singapore)

8002: Hodge Decomposition of Brain Networks

Viljay Anand (University College London)

8003: Topological Deep Learning: Going Beyond Graph Data

Mustafa Hajj (University of San Francisco)

Coffee Break

16:30 - 17:00

Music Library & Skalkotas Auditorium Foyers

Industry Day (cont.)

17:00 - 18:00

Skalkotas Auditorium

Panel Discussion

Anant Madabhushi, Vassilis Papakonstantinou, Constantinos Papadias, Angelos Amditis, Angie Fasoula, George Loudos, Christos Xanthis

Awards & Closing Remarks

Oral Session: Novel ML and DL methods for image segmentation

17:00 - 18:00

Marinos

Chairs: Leticia Rittner (University of Campinas), Anuj Srivastava (Florida State University)

158: Weakly Supervised Zero-shot Medical Image Segmentation Using Pretrained Medical Language Models

Danfeng Guo (University of California, Los Angeles), Demetri Terzopoulos (University of California, Los Angeles)

692: CTranS: A Multi-resolution Convolution-Transformer Network for Medical Image Segmentation

Zhendi Gong (University of Nottingham), Andrew French (University of Nottingham), Guoping Qiu (University of Nottingham), Xin Chen (University of Nottingham)

39: Shape-Graph Matching Network (SGM-net): Registration for Statistical Shape Analysis

Shenyuan Liang (Florida State University), Mauricio Pamplona Segundo (University of South Florida), Sathyanarayanan N Aakur (Auburn University), Sudeep Sarkar (University of South Florida, Tampa), Anuj Srivastava (Florida State University)

282: A WEIGHTED CONSENSUS DEEP LEARNING METHOD FOR THE FUSION OF OBJECT SEGMENTATION MODELS AND ITS APPLICATION TO GLOMERULI OF THE MOUSE OLFACTORY BULB

Yu Weng (Max Planck Research Unit for Neurogenetics), Bolek Zapiec (Max Planck Research Unit for Neurogenetics), Volker Blanz (University of Siegen), Peter Mombaerts (Max Planck Research Unit for Neurogenetics)

Oral Session: Dual modality deep learning

17:00 - 18:00

Lecture

Chairs: Aimilia Gastounioti (Washington University School of Medicine), Kalliopi Dalakleidi (National Technical University of Athens)

211: DUAL REPRESENTATION LEARNING FROM FETAL ULTRASOUND VIDEO AND SONOGRAPHER AUDIO

Mourad Gridach (University of Oxford), Mohammad Alsharid (University of Oxford and Khalifa University), Jianbo Jiao (University of Oxford), Lior Drukker (University of Oxford), Aris T Papageorghiou (University of Oxford), Alison Noble (University of Oxford)

1266: Enlarged Perivascular Spaces in Frontal and Temporal Cortical Regions Characterize Seizure Outcome after Traumatic Brain Injury

Celina M Alb (USC), Giuseppe Barisano (Stanford University), Alexis Bennett (USC), Akul Sharma (USC), Paul Vespa (UCLA), Dominique Duncan (USC)

730: MEDICAL KNOWLEDGE-ENABLED MULTI-TASK LEARNING FOR GASTRIC CANCER SURVIVAL PREDICTION

Degan Hao (University of Pittsburgh), Qiong Li (The First Affiliated Hospital with Nanjing Medical University), Yudong Zhang (The first affiliated hospital of Nanjing Medical University), Shandong Wu (Department of Radiology, Biomedical Informatics, and Bioengineering, University of Pittsburgh)

1284: PE-MVCNet: Multi-view and Cross-modal Fusion Network for Pulmonary Embolism Prediction

Zhaoxin Guo (Hangzhou Dianzi University), Zhipeng Wang (Hangzhou DianZi University), Ruiquan Ge (Hangzhou Dianzi University), Jianxun Yu (Dalian Polytechnic University), Feiwei Qin (Hangzhou Dianzi University), Yuan Tian (Shenzhen Longgang District People's Hospital of Shenzhen), Yuqing Peng (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Yonghong Li (Shenzhen Institute of Information Technology), Changmiao Wang (Shenzhen Research Institute of Big Data)

Oral Session: MRI in Alzheimer's disease
17:00 - 18:00
MC2

Chair: Natasha Lepore (University of Southern California)

302: PRE-TRAINING GRAPH ATTENTION CONVOLUTION FOR BRAIN STRUCTURAL IMAGING BIOMARKER ANALYSIS AND ITS APPLICATION TO ALZHEIMER'S DISEASE PATHOLOGY IDENTIFICATION

Zhangsihao Yang (Arizona State University), Yi Su (Banner Alzheimer's Institute), Rahimeh Rouhi (Children's Hospital Los Angeles), Mohammad Farazi (Arizona State University), Wenhui Zhu (Arizona State University), Yanxi Chen (Arizona State University), Eric M. Reiman (Banner Alzheimer's Institute and Banner Good Samaritan PET Center), Richard J Caselli (Department of Neurology, Mayo Clinic Arizona), Kewei Chen (Banner Alzheimer's Institute), Yalin Wang (Arizona State University), Natasha Lepore (Children's Hospital Los Angeles)

638: PVTAD: ALZHEIMER'S DISEASE DIAGNOSIS USING PYRAMID VISION TRANSFORMER APPLIED TO WHITE MATTER OF T1-WEIGHTED STRUCTURAL MRI DATA

Maryam Akhavan Aghdam (Florida International University), Serdar Bozdag (University of North Texas), Fahad Saeed (Florida International University)

758: Diffusion MRI Allows Capturing the Amyloid- β and τ Proteins Status in Alzheimer's Disease Continuum

Giorgio Dolci (University of Verona), Federica Cruciani (University of Verona), Lorenza Brusini (University of Verona), Lorenzo Pini (University of Padua), Ilaria Boscolo Galazzo (University of Verona), Vince Calhoun (TReNDS), Gloria Menegaz (University of Verona)

Oral Session: Deep learning methods and decision support (I)
17:00 - 18:00
MC3.2

Chairs: Maria Athanasiou (National Technical University of Athens), Konstantia Zarkogianni (Maastricht University)

82: Self-Supervised Alignment Learning for Medical Image Segmentation

Haofeng Li (Shenzhen Research Institute of Big Data, The Chinese University of Hong Kong -Shenzhen), Yiming Ouyang (Shenzhen Research Institute of Big Data, The Chinese University of Hong Kong (Shenzhen)), Xiang Wan (Shenzhen Research Institute of Big Data, the Chinese University of Hong Kong -Shenzhen)

404: Integrating expert knowledge with vision-language model for medical image retrieval

Xiaoyang Wei (Université Paris Cité), Zografoula Vagena (Université Paris Cité), Camille Kurtz (Université Paris Cité), Florence CLOPPET (Université Paris Cité)

720: Dual self-distillation of U-shaped networks for 3D medical image segmentation

Soumyanil Banerjee (Wayne State University), Ming Dong (Wayne State University), Carri Glide-Hurst (University of Wisconsin-Madison)

849: Differentially Private Graph Neural Networks for Medical Population Graphs and the Impact of the Graph Structure

Tamara T. Mueller (Technical University Munich), Maulik Chevil (Technical University of Munich), Ameya Daigavane (Massachusetts Institute of Technology), Daniel Rueckert (Technische Universität München), Georgios Kaassis (Technische Universität München)

Oral Session: Machine learning and data mining
17:00 - 18:00
MC3.3

Chair: Shanshan Wang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences)

1276: Measuring Feature Dependency of Neural Networks by Collapsing Feature Dimensions in the Data Manifold

Yinzhu Jin (University of Virginia), Matthew Dwyer (University of Virginia), P. Thomas Fletcher (University of Virginia)

1298: Weighted Graph Convolutional Network for Biomedical Relation Extraction

Zhiqiang Wang (Institute of Automation, Chinese Academy of Sciences), Yiping Yang (CASIA)

587: Reinforcement Learning for Medical Image Classification Based on Deep Deterministic Policy Gradients

Ahmad Chaddad (ETS & GUET), Jiang Yuchen (GUET)

649: MLIP: Medical Language-Image Pre-training with Masked Local Representation Learning

Jiarun Liu (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Hong-Yu Zhou (Harvard University), Cheng Li (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Weijian Huang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Hao Yang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Yong Liang (Pengcheng Laboratory), Guangming Shi (Xidian University), Hairong Zheng (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Shanshan Wang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences)

Special Session 2: Imaging molecules within the cell by 3D electron microscopy

17:00 - 18:00

MC3.4

Chairs: Antonio Martínez Sánchez (University of Murcia), Tingying Peng (Helmholtz Institute Munich)

1371: Fast global image alignment algorithm for CryoEM through vector compression

Carlos Oscar S. Sorzano (National Center for Biotechnology)

1423: Towards efficient macromolecular detection: strategies for speed and quality enhancement in cryo-electron tomography

Harold Phelipeau (Thermo Fisher Scientific), Antonio Martinez-Sanchez (University of Murcia)

1438: Reconstruction of filamentous structures across image stacks from serial-section electron tomography

Daniel Baum (Zuse Institute Berlin)

1448: Deep learning in cryo-ET: from image alignment to biological insights

Ricardo D. Righetto (Biozentrum - University of Basel), Lorenz Lamm (Helmholtz Munich), Valentin Debarnot (University of Basel), Vinith Kishore (University of Basel), Ivan Dokmanic (University of Basel), Antonio Martinez-Sanchez (University of Murcia), Benjamin Engel (University of Basel), Tingying Peng (Helmholtz AI)

artISBI2024 session: Exploring the Intersection of Biomedical Imaging and Creative Expression

17:00 - 18:00

Banqueting Hall

Panel: Translating Artificial Intelligence Research into Clinical Practice: Challenges and Perspectives in Biomedical Imaging

18:00 - 19:15

Banqueting Hall

Welcome Reception

20:00 - 22:00

Zappeion Mansion

Technical Program: Tuesday, 28 May 2024

Breakfast with Leaders (Pre-registration required)

07:30 - 08:30

Allegro Hall

Oral Session: Deep learning methods and decision support (II)

08:30 - 10:00

Lecture

Chairs: Amir Amini (University of Louisville), Elsa Angelini (Télécom Paris, Institut Polytechnique de Paris)

1307: DCSM 2.0: DEEP CONDITIONAL SHAPE MODELS FOR DATA EFFICIENT SEGMENTATION

Athira J Jacob (Siemens Healthineers), Puneet Sharma (Siemens Healthineers), Daniel Rueckert (Technische Universität München)

834: HARNESSING CONVOLUTIONAL NEURAL NETWORKS FOR DIAGNOSING POST-SBRT RADIATION-INDUCED LUNG INJURY FROM X-RAY CT

Benjamin Veasey (University of Louisville), Aryan Ghazipour (University of Louisville), Tyler L Settle (University of Louisville), Emily Daugherty (University of Cincinnati College of Medicine), Samuel Keltner (University of Cincinnati College of Medicine), Nitin Kumar (University of Cincinnati College of Medicine), James Ververs (Wake Forest University School of Medicine), Michael Farris (Wake Forest University School of Medicine), Neal Dunlap (University of Louisville Hospital), Amir Amini (University of Louisville)

976: SSVT: Self-Supervised Vision Transformer For Eye Disease Diagnosis Based On Fundus Images

Jiaqi Wang (Beihang University), Mengtian Kang (Capital Medical University), Yong Liu (Beihang University), Chi Zhang (Capital Medical University), Ying Liu (The University of Melbourne), Shiming Li (Beijing Tongren Hospital, Capital Medical University), Yue Qi (Beijing Tongren Hospital, Capital Medical University), Wenjun Xu (Beijing Tongren Hospital, Capital Medical University), Chenyu Tang (University of Cambridge), Edoardo Occhipinti (Imperial College London), Mayinuer Yusufu (Department of Surgery (Ophthalmology), The University of Melbourne), Ningli Wang (Beijing Institute of Ophthalmology), Weiling Bai (Beijing Tongren Hospital, Capital Medical University), Shuo Gao (Beihang University), Luigi G Occhipinti (University of Cambridge)

1280: Semi-Supervised Learning of Visual Attributes for Automated Assessment of Lung Nodule Malignancy

Liyun Chen (Shanghai Jiao Tong University), Linlin Yao (Shanghai Jiao Tong University), Qian Wang (ShanghaiTech University), Zhong Xue (Shanghai United Imaging Intelligence Co., Ltd)

532: Automatic pelvic structure restoration: a sim-to-real approach via recursive pose estimation network

Sutuke Yibulayimu (Beihang University), Yudi Sang (Rossum Robot), Yanzhen Liu (Beihang University), Gang Zhu (Rossum Robot), Yu Wang (Beihang University), Chunpeng Zhao (Beijing Jishuitan Hospital), Qiyong Cao (Beijing Jishuitan Hospital), Xinbao Wu (Beijing Jishuitan Hospital)

623: A novel approach to Unveil Hidden Stratification in Osteoporosis SR-microCT Image Classification

Isabella Poles (Politecnico di Milano), Eleonora D'Arnese (Politecnico di Milano), Federica Buccino (Politecnico di Milano), Laura Vergani (Politecnico di Milano), Marco Domenico Santambrogio (Politecnico di Milano)

Oral Session: Dynamic MRI

08:30 - 10:00

Skalkotas Auditorium

Chairs: Chao Ma (University of Texas at Arlington), Piotr Slomka (Cedars-Sinai Medical Center)

753: CARDIAC CINE MRI MOTION CORRECTION USING DIFFUSION MODELS

Yang Liu (ShanghaiTech University), Jiameng Diao (ShanghaiTech University), Zijian Zhou (ShanghaiTech University), Haikun Qi (ShanghaiTech University), Peng Hu (ShanghaiTech University)

846: Simultaneous DCE-DSC-MRI using low-rank-regularized model-based reconstruction of DCE and DSC components

Marie Mangová (Brno University of Technology), Ondřej Macíček (Czech Academy of Sciences), Pavel Rajmic (Brno University of Technology), Denisa Hýlová (Czech Academy of Sciences), Radovan Jiřík (Czech Academy of Sciences)

854: Sparsity Constrained Linear Tangent Space Alignment Model (LTSA) for 3D Cardiac Extracellular Volume Mapping

Ismael BG Mounime (Massachusetts General Hospital), Wonil Lee (MGH), Thibault Marin (Harvard Medical School), Paul Han (Massachusetts General Hospital), Yanis Djebra (Massachusetts General Hospital), Samira Eslahi (Massachusetts General Hospital), Pietro Gori (Télécom Paris), Elsa Angelini (Telecom Paris), Georges El Fakhri (Yale School of Medicine), Chao Ma (Massachusetts General Hospital)

861: Robust Outer Volume Subtraction with Deep Learning Ghosting Detection for Highly-Accelerated Real-Time Dynamic MRI

Merve Gulle (University of Minnesota), Mehmet Akcakaya (University of Minnesota)

1053: Multimodal Learning To Improve Cardiac Late Mechanical Activation Detection From Cine MR Images

Jiarui Xing (University of Virginia), Nian Wu (University of Virginia), Kenneth Bilchick (University of Virginia), Frederick Epstein (University of Virginia), Miaomiao Zhang (University of Virginia)

1366: PI-GNN: PHYSICS-INFORMED GRAPH NEURAL NETWORK FOR SUPER RESOLUTION OF 4D FLOW MRI

Amirkhosro Kazemi (University of Louisville), Amir Amini (University of Louisville), Josh Abecassis (University of Louisville)

Oral Session: Foundation models

08:30 - 10:00

MC2

Chairs: Tianming Liu (University of Georgia), Sotirios Tsaftaris (The University of Edinburgh and Archimedes, RC)

102: PROMISE: PROMPT-DRIVEN 3D MEDICAL IMAGE SEGMENTATION USING PRETRAINED IMAGE FOUNDATION MODELS

Hao Li (Vanderbilt University), Han Liu (Vanderbilt University), Dewei Hu (Vanderbilt University), Jiacheng Wang (Vanderbilt University), Ipek Oguz (Vanderbilt University)

830: NOVEL OCT MOSAICKING PIPELINE WITH FEATURE- AND PIXEL-BASED REGISTRATION

Jiacheng Wang (Vanderbilt University), Hao Li (Vanderbilt University), Dewei Hu (Vanderbilt University), Yuankai Tao (Vanderbilt University), Ipek Oguz (Vanderbilt University)

54: A Foundation Model for General Moving Object Segmentation in Medical Images

Zhongnuo Yan (Shenzhen University), Tong Han (Shenzhen University), Yuhao Huang (Shenzhen University), Lian Liu (Shenzhen University), Han Zhou (Shenzhen University), Jiongquan Chen (Shenzhen University), Wenlong Shi (Shenzhen RayShape Medical Technology Inc.), Yan Cao (Shenzhen RayShape Medical Technology Inc.), Xin Yang (Shenzhen University), Dong Ni (Shenzhen University), Ruobing Huang (Shenzhen University)

473: SAMIHS: Adaptation of Segment Anything Model for Intracranial Hemorrhage Segmentation

Yinuo Wang (Beihang University), Kai Chen (Beihang University), Weimin Yuan (BeiHang University), Zhoupeng Tang (Tongji Hospital), Cai Meng (Beihang University), Xiangzhi Bai (Beihang University)

1018: Where to Begin? From Random to Foundation Model Instructed Initialization in Federated Learning for Medical Image Segmentation

Ming Li (Imperial College London), Guang Yang (Imperial College London)

1028: MAKEN: Improving Medical Report Generation with Adapter Tuning and Knowledge Enhancement in Vision-Language Foundation Models

Shibin Wu (Tsinghua University), Bang Yang (Peking University), Zhiyu Ye (Peng Cheng Laboratory), Haoqian Wang (Tsinghua Shenzhen International Graduate School, Tsinghua University), Hairong Zheng (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Tong Zhang (Peng Cheng Laboratory)

Oral Session: Image reconstruction

08:30 - 10:00

Marinos

Chairs: Mathews Jacob (University of Iowa), Roummel Marcia (University of California, Merced)

868: A Continuous-Domain Solution for Computed Tomography with Hessian Total-Variation Regularization

Mehrsa Pourya (EPFL), Youssef Haouchat (EPFL), Michael Unser (EPFL)

1013: A high-frequency re-optimization network for MRI reconstruction with CT as the prior

Wenlei Shang (ShanghaiTech University), Wenjian Liu (ShanghaiTech University), Ying Cheng (ShanghaiTech University), Zijian Zhou (ShanghaiTech University), Guohua Cao (ShanghaiTech University), Peng Hu (ShanghaiTech University)

1057: TC-DiffRecon: Texture coordination MRI reconstruction method based on diffusion model and modified MF-UNet method

Chenyan Zhang (Hangzhou Dianzi University), Yifei Chen (Hangzhou Dianzi University), Zhenxiong Fan (Hangzhou Dianzi University), Yiyu Huang (Hangzhou Dianzi University), Wenchao Weng (Hangzhou Dianzi University), Ruiquan Ge (Hangzhou Dianzi University), Dong Zeng (Southern Medical University), Changmiao Wang (Shenzhen Research Institute of Big Data)

1151: Deep Image prior with StruCtured Sparsity (DISCUS) for dynamic MRI reconstruction

Muhammad Ahmad Sultan (The Ohio State University), Chong Chen (The Ohio State University), Yingmin Liu (The Ohio State University), Xuan Lei (The Ohio State University), Rizwan Ahmad (The Ohio State University)

983: End-to-End Model-based Deep Learning for Dual-Energy Computed Tomography Material Decomposition

Jiandong Wang (Shenzhen Xilaiheng Medical Electronics Co., Ltd. (HORRON)), Alessandro Perelli (University of Dundee)

411: Local monotone operator learning using non-monotone operators: MnM-MOL

Maneesh John (University of Iowa), Jyothi Rikhab Chand (University of Iowa), Mathews Jacob (University of Iowa)

Oral Session: Image synthesis

08:30 - 10:00

MC3.2

Chairs: Johannes Stegmaier (RWTH Aachen University), Jose Marcio Luna (Washington University in St Louis)

1002: SYNTHESIZING STUDY-SPECIFIC CONTROLS USING GENERATIVE MODELS ON OPEN ACCESS DATASETS FOR HARMONIZED MULTI-STUDY ANALYSES

Shruti Gadewar (USC), Alyssa H. Zhu (University of Southern California), Iyad Ba Gari (University of Southern California), Sunanda Somu (University of Southern California), Sophia Thomopoulos (Imaging Genetics Center, University of Southern California), Paul Thompson (Imaging Genetics Center), Talia Nir (Imaging Genetics Center), Neda Jahanshad (University of Southern California)

444: DiffGEPCI: 3D MRI Synthesis from mGRE Signals using 2.5D Diffusion Model

Yuyang Hu (Washington University in st-louis), Satya Kothapalli (Washington University in st-louis), Weijie Gan (Washington University in St. Louis), Alexander Sukstanskii (Washington University in St. Louis), Gregory Wu (Washington University in St. Louis), Manu Goyal (Washington University in St. Louis), Dmitriy Yablonskiy (Washington University in St. Louis), Ulugbek S. Kamilov (Washington University in St. Louis)

514: Generative Adversarial Learning for OCT-TPM Vascular Domain Translation

Rafat Damseh (UAEU), Nadia Badawi (UAEU), Jaloliddin Rustamov (United Arab Emirates University), Zahiriddin Rustamov (United Arab Emirates University), Frederic Lesage (Polytechnique Montreal), Nazar M Zaki (UAEU)

1162: DISYRE: Diffusion-Inspired SYnthetic REstoration for Unsupervised Anomaly Detection

Sergio Naval Marimont (City, University of London), Matthew M G Baugh (Imperial College London), Vasilis Siomos (City, University of London), Christos Tzelepis (City, University of London), Bernhard Kainz (Imperial College London, FAU Erlangen-Nürnberg), Giacomo Tarroni (City, University of London)

1214: Reconstructing Retinal Visual Images from 3T fMRI Data Enhanced by Unsupervised Learning

Yujian Xiong (Arizona State University), Wenhui Zhu (Arizona State University), Zhong-Lin Lu (New York University), Yalin Wang (Arizona State University)

151: Assessing the Efficacy of Invisible Watermarks in AI-Generated Medical Images

Xiaodan Xing (Imperial College London), Huiyu Zhou (University of Leicester), Yingying Fang (Imperial College London), Guang Yang (Imperial College London)

Oral Session: Surgery guidance/planning

08:30 - 10:00

MC3.4

Chairs: Maria J Ledesma-Carbayo (Universidad Politécnica de Madrid), Stephane Cotin (Inria / Univ Strasbourg)

680: Towards Real-time vessel guided Augmented reality for liver surgery

Sidaty El Hadramy (Inria), Juan M. Verde (IHU Strasbourg), Nicolas Padoy (University of Strasbourg), Stephane Cotin (Inria)

837: DNA-DIR: 2D-3D geometry embedding for intraoperative partial-to-full registration

Dai Sun (University of Science and Technology of China), Lan Li (University of Science and Technology of China), Hongyu Qiu (University of Science and Technology of China), Zhao Zhang (University of Science and Technology of China), Shang Zhao (University of Science and Technology of China), S. Kevin Zhou (USTC)

1033: LEARNING BREAST TISSUE PRONE-TO-SUPINE DISPLACEMENT FOR SURGICAL PLANNING WITH CONVOLUTIONAL NEURAL NETWORKS

Felicia Alfano (Universidad Politécnica de Madrid), David Bermejo-Peláez (Spotlab), Lucilio Cordero-Grande (Universidad Politécnica de Madrid), Juan Enrique Ortuño (Universidad Politécnica de Madrid), Karla Ferreres García (Instituto de Investigación Sanitaria Gregorio Marañón), Oscar Bueno Zamora (Instituto de Investigación Sanitaria Gregorio Marañón), Santiago Lizarraga (Instituto de Investigación Sanitaria Gregorio Marañón), Andres Santos (Universidad Politécnica de Madrid), Javier Pascau (Universidad Carlos III de Madrid), Maria J Ledesma-Carbayo (Universidad Politécnica de Madrid)

957: Dose aware toxicity prediction in head and neck cancer patients using a deformable 3D CNN on daily CBCT acquisitions

Gautier Henique (Polytechnique Montréal), Chulmin Bang (Centre hospitalier de l'Université de Montréal), Daniel Markel (Centre hospitalier de l'Université de Montréal), William T Le (Polytechnique Montréal), Edith Filion (Centre hospitalier de l'Université de Montréal), Phuc Felix Nguyen-Tan (Centre hospitalier de l'Université de Montréal), Houda Bahig (Centre hospitalier de l'Université de Montréal), Samuel Kadoury (Polytechnique Montréal)

717: Statistical shape model guided virtual reduction of displaced distal radius fractures

Jana Osstyn (University of Antwerp), Femke Danckaers (Vision Lab, Modelling Group - University of Antwerp), Andreas Verstreken (University Hospital, AZ Monica), Annemieke Van Haver (More Institute), Matthias Van Hees (University Hospital, AZ Monica), Jan Sijbers (University of Antwerp)

594: Real time lung tumor tracking based on biomechanical modeling and LSTM network models of the respiratory movement for radiation therapy

Antoine Lenoir (INSA Lyon), HAMID LADJAL (LIRIS université Lyon 1), Elodie Desseree (LIRIS université Lyon 1), Behzad Shariat (LIRIS université Lyon 1)

Art meets Biomedical Imaging - Tuesday

10:00 - 17:30

Skalkotas Auditorium Foyer

Poster Session 1: Tuesday

10:00 - 11:30

Banqueting Hall Foyer

Plenary Session 2

11:30 - 12:30

Banqueting Hall

Chair: Nikos Paragios (Université Paris-Saclay, TheraPanacea)

Artificial Intelligence: Where we are, where we are going

Joseph Sifakis, Emeritus Research Director at Verimag

Lunch - Tuesday (on your own)

12:30 - 14:00

Lunch with Leaders (Pre-registration required)

12:30 - 14:00

Allegro Hall

Challenge 5: Justified referral in AI glaucoma screening (JUSTRAIGS) - Part I

14:00 - 15:30

MC3.2

Oral Presentations

1635: Data-Centric Label Smoothing for Explainable Glaucoma Screening from Eye Fundus Images

Adrian Galdran (Universitat Pompeu Fabra), Miguel Angel González Ballester (Universitat Pompeu Fabra)

1637: Detection and Classification of Glaucoma in the JustRAIGS Challenge: Achievements in Binary and Multilabel Classification

Philippe Zhang (LaTIM), Yihao Li (United Imaging Healthcare, Shanghai), Jing Zhang (LaTIM - INSERM UMR 1101), Weili Jiang (Sichuan University), Pierre-Henri Conze (IMT Atlantique), Mathieu Lamard (LaTIM - INSERM UMR 1101), Gwenolé Quellec (LaTIM - INSERM UMR 1101), Mostafa El Habib Daho (University of Western Brittany)

1626: Multi-Stage Region-Based Neural Networks for Fine-Grained Glaucoma Screening

Eunjin Kim (Vuno Inc.), Seunghun Lee (VUNO), Gitaek Kwon (VUNO Inc.), Hyunwoo Kim (VUNO Inc.), Jaeyoung Kim (Teamreboot Inc.)

Poster Presentations

1605: Deep Learning Models for Justified Referral in AI Glaucoma Screening

Ángela Casado-García (Universidad de La Rioja), Jónathan Heras (Universidad de La Rioja), Lucía Ramos García (Universidad Da Coruña), Marcos Ortega (University of A Coruña)

1632: Glaucoma Abnormality Classification using YOLO and SWIN Transformer

Madukuri Shaurya (IIT Delhi), Anumeha Varma (IIT Delhi), Monika Aggarwal (IIT Delhi)

1646: AUTOMATIC GLAUCOMA CLASSIFICATION AND FEATURE DETECTION FOR THE JUSTRAIGS CHALLENGE

Kristhian A Aguilar (Universidade Federal do Amazonas), Victor Cavalcante (Federal University of Amazonas), Celso Carvalho (Federal University of Amazonas), Waldir da Silva Junior (Federal University of Amazonas), Mateus Oliveira (Federal University of Amazonas)

Oral Session: Biological, structural and cellular segmentation

14:00 - 15:30

Skalkotas Auditorium

Chair: Sokratis Makrogiannis (Delaware State University)

1288: A Joint Scale Analysis and Machine Learning Framework for Cell Detection and Segmentation in Time Lapse Microscopy

Nagasoujanya Annasamudram (Delaware State University), Sokratis Makrogiannis (Delaware State University)

140: Domain Adaptive Synapse Detection with Weak Point Annotations

Qi Chen (University of Science and Technology of China), Wei Huang (University of Science and Technology of China), Yueyi Zhang (University of Science and Technology of China), Zhiwei Xiong (University of Science and Technology of China)

644: AWGUNet: Attention-aided Wavelet Guided U-net for nuclei segmentation in histopathology images

Ayush Roy (Jadavpur University), Payel Pramanik (Jadavpur University), Dmitrii Kaplun (Saint Petersburg Electrotechnical University)

93: U-HRMLP: Refining Segmentation Boundaries in Histopathology Images

Tao Wang (Jilin University), Kai Zhang (Shandong Normal University), Weijie Wang (University of Treto), Mingrui Ma (Jilin University), Ye Zhang (Northeast Normal University), He Zhao (Jilin University), Guixia Liu (Jilin University)

913: Blind Color Deconvolution and Classification of Histological Images Using the Hyperbolic Secant Prior

Francisco M. Castro-Macías (Universidad de Granada), Fernando Pérez Bueno (Universidad de Granada), Miguel Vega (University of Granada), Javier Mateos (University of Granada), Rafael Molina (University of Granada), Aggelos Katsaggelos (Northwestern University)

1180: A Novel ViT-based Multi-scaled and Rotation-Invariance Approach for Precise Differentiation between Meningioma and Solitary Fibrous Tumor

Mohamed Azam (University of Louisville), Hossam Magdy Balaha (University of Louisville), Khadiga M. Ali (Mansoura University), Nagham E. Mekky (Mansoura University), Noha A. Hikal (Mansoura University), Mohammed Ghazal (Abu Dhabi University), Dibson Gondim (University of Louisville), Akshitkumar Mistry (University of Louisville), Ayman S El-Baz (University of Louisville)

Oral Session: Deep learning approaches for image segmentation

14:00 - 15:30

Marinos

Chairs: Guotai Wang (University of Electronic Science and Technology of China), Evangelos Mazomenos (University College London)

904: CMUNeXt: An Efficient Medical Image Segmentation Network based on Large Kernel and Skip Fusion

Fenghe Tang (University of Science and Technology of China), Jianrui Ding (Harbin Institute of Technology), Quan Quan (Institute of Computing Technology, Chinese Academy of Sciences), Lingtao Wang (Harbin Institute of Technology), Chunping Ning (The Affiliated Hospital of Qingdao University), S. Kevin Zhou (USTC)

1005: Semi-supervised medical image segmentation via Multi-Group Network with Consistency among Heterogeneous Loss supervision

Ping Ye (University of Electronic Science and Technology of China), He Li (uestc), Shaoting Zhang (Shanghai AI Lab), Guotai Wang (University of Electronic Science and Technology of China)

1076: E-TRANSUNET: ENHANCED TRANSUNET FOR MEDICAL IMAGE SEGMENTATION

ZiJun Zhang (Dalian University of Technology), Xuanheng Li (Dalian University of Technology), Xiaohong Ma (Dalian University of Technology), Yi Sun (Dalian University of Technology)

1221: U-Attention Nested U-Transformer for Medical Image Segmentation

Haichao Peng (Xiamen University), Wenkang Fan (Xiamen University), Xiongbiao Luo (Xiamen University), Rui Li (Xiamen Zhongshan Hospital), Yong Peng (Chongqing City Management College)

515: Semi-ConTrans: Semi-Supervised Medical Image Segmentation via Multi-scale Feature Fusion and Cross Teaching of CNN and Transformer

Weiren Zhao (UESTC (University of Electronic Science and Technology of China)), Lanfeng Zhong (UESTC (University of Electronic Science and Technology of China)), Guotai Wang (University of Electronic Science and Technology of China)

459: Dual Bidirectional Copy-Paste with Shape Constraint for Semi-supervised Image Segmentation

Bowei Shen (university of shanghai for science and technology), Xiaoquan Huang (Fudan University), Yonghong Shi (Fudan University), Shiyao Chen (Fudan University)

Oral Session: Machine learning and image uncertainty

14:00 - 15:30

Lecture

Chairs: Archana Venkataraman (Boston University), Lilla Zöllei (Harvard Medical School)

122: A Deep Learning Framework to Mitigate Label Uncertainty for Epileptogenic Zone Localization Using RsfMRI Connectivity

Naresh Nandakumar (JHU), David Hsu (University of Wisconsin-Madison), Raheel Ahmed (University of Wisconsin-Madison), Archana Venkataraman (Johns Hopkins University)

948: Navigating Uncertainty in Medical Image Segmentation

Kilian Zepf (Technical University of Denmark, DTU Compute), Jes Frellsen (Technical University of Denmark), Aasa Feragen (Technical University of Denmark)

341: Transduction Enhanced Inductive Inference for Imbalanced Classification in Medical Images

Yizhe Zhang (Nanjing University of Science and Technology), Tao Zhou (Nanjing University of Science and Technology), Ye Wu (Nanjing University of Science and Technology), Shuo Wang (Digital Medical Research Center, School of Basic Medical Sciences, Fudan University), Danny Z Chen (University of Notre Dame)

697: Boosting skull-stripping performance for pediatric brain images

William W Kelley (Massachusetts General Hospital), Nathan Ngo (Mass General Brigham), Adrian V Dalca (MIT), Bruce Fischl (MGH), Lilla Zöllei (Mass General Brigham/Harvard Medical School), Malte Hoffmann (Harvard Medical School)

273: 3D Multi-eXpert Fusion Framework For Prostate Segmentation In 3D TRUS Imaging

Clément Beitone (TIMC Lab, Grenoble Alpes University-CNRS), Jocelyne Troccaz (TIMC Lab, Grenoble Alpes University-CNRS)

1254: Surf-CDM: Score-Based Surface Cold-Diffusion Model For Medical Image Segmentation

Fahim Ahmed Zaman (University of Iowa), Mathews Jacob (University of Iowa), Amanda Chang (University of Iowa), Kan Liu (University of Iowa), Milan Sonka (University of Iowa), Xiaodong Wu (University of Iowa)

Special Session 6: Applied Medical Imaging AI Research: Clinical and Translational Perspectives

14:00 - 15:30

MC3.4

Chair: Shandong Wu (University of Pittsburgh)

8007: Clinical Needs-Driven Radiology AI to Augment Breast Cancer Care

Shandong Wu (University of Pittsburgh)

8008: Transdisciplinary Medical Imaging AI: Pathology Diagnosis and Explainable Radiomics

Young-Gon Kim (Seoul National University Hospital and L'imagin Inc)

1484: Computational prognostic modeling in traumatic brain injury

Matthew Pease (Indiana University)

1569: AI for Medical Imaging Reconstruction and Analysis: Quantitative MRI of the Joints for Musculoskeletal Disease Evaluation

Riccardo Lattanzi (NYU Grossman School of Medicine)

Tutorial 4: DIMEDIA: Diffusion models in medical imaging and analysis - Part I

14:00 - 15:30

Presenters: Julia Wolleb (University of Basel), Yuyang Xue (University of Edinburgh), Maria Nefeli Gkouti (Archimedes Unit)

MC2

Academic Software Demo Session 1

14:30 - 17:30

Skalkotas Auditorium Foyer

Coffee Break - Tuesday Afternoon

15:30 - 16:00

Music Library & Skalkotas Auditorium Foyers

Oral Session: Brain connectivity

16:00 - 17:30

Skalkotas Auditorium

Chairs: Julie Colognier (Centre Inria de l'Université de Rennes / IRISA/ CNRS), Dimitri Vandeville (EPFL)

408: Learning Dynamic Brain Connectome with Graph Transformers for Psychiatric Diagnosis Classification

Byung-Hoon Kim (Yonsei University College of Medicine), Jungwon Choi (KAIST), Eunggu Yun (KAIST), Kyungsang Kim (Massachusetts General Hospital and Harvard Medical School), Xiang Li (Massachusetts General Hospital and Harvard Medical School), Juho Lee (KAIST)

89: LaSCL-PLC: Lesion-Aware Supervised Contrastive Learning for Patient-Level Classification of Brainstem and Cerebellar Hemangioblastomas

Botao Zhao (Ping An Technology (Shenzhen) Co., Ltd.), Yan Ren (Huashan Hospital of Fudan University), Yaru Sheng (Huashan Hospital of Fudan University), Shengfeng Liu (Zhejiang Lab), Jing Zhang (Zhejiang Lab), Shengjie Zhang (Fudan University), Yu Zhang (Zhejiang Lab), Xiao-Yong Zhang (Fudan University)

113: Quantifying White Matter Hyperintensity and Brain Volumes in Heterogeneous Clinical and Low-Field Portable MRI

Pablo Laso (Martinos Center, HMS), Stefano Cerri (University of Copenhagen), Annabel Sorby-Adams (Massachusetts General Hospital and Harvard Medical School), Jennifer Guo (Massachusetts General Hospital, Harvard Medical School), Farrah Mateen (Massachusetts General Hospital, Harvard Medical School), Philipp Goebel (Centre for Medical Image Computing, University College London), Jiaming Wu (University College London), Peirong Liu (Harvard Medical School), Hongwei Bran Li (Harvard Medical School), Sean Young (Massachusetts General Hospital, Harvard Medical School), Benjamin Billot (MIT), Oula Puonti (Massachusetts General Hospital, Harvard Medical School), Gordon Sze (Yale School of Medicine), Sam Payabvash (Yale School of Medicine), Adam Dehavenon (Yale School of Medicine), Kevin N Sheth (Yale), Matthew Rosen (MGH/Martinos Center), John Kirsch (Massachusetts General Hospital, Harvard Medical School), Nicola Strisciuglio (University of Twente), Jelmer Wolterink (University of Twente), Arman Eshaghi (Queen Square Multiple Sclerosis Centre, Department of Neuroinflammation, UCL Queen Square Institute of Neurology, Faculty of Brain Sciences, University College London), Frederik Barkhof (University College London), William Taylor Kimberly (Massachusetts General Hospital), Juan Eugenio Iglesias (UCL)

674: EPDIFF-JF-NET: ADJOINT JACOBI FIELDS FOR DIFFEOMORPHIC REGISTRATION NETWORKS

Ubaldo Ramon-Julvez (University of Zaragoza), Monica Hernandez (University of Zaragoza), Elvira Mayordomo (University of Zaragoza)

1119: Dynamic Fusion of Multimodal MRI Data Captures Flexible, Time-Sensitive Structure-Function Linkages in the Brain

Marlena Duda (TReNDS Center), Oktay Agcaoglu (TReNDS), Vince Calhoun (TReNDS)

902: Generation of anatomy-realistic 4D infant brain atlases with tissue maps using generative adversarial networks

Kaibo Tang (UNC Chapel Hill), Liangjun Chen (UNC Chapel Hill), Zhengwang Wu (UNC Chapel Hill), Fenqiang Zhao (DAMO Academy, Alibaba Group), Ya Wang (UNC Chapel Hill), Weili Lin (UNC Chapel Hill), Li Wang (UNC), Gang Li (University of North Carolina at Chapel Hill)

Oral Session: Emerging methods for trustworthy AI (I)

16:00 - 17:30

Lecture

Chairs: Ioanna Chouvarda (Aristotle University of Thessaloniki), Qi Long (University of Pennsylvania)

92: Towards Concept-based Interpretability of Skin Lesion Diagnosis using Vision-Language Models

Cristiano Patrício (Universidade da Beira Interior), Luis F Teixeira (INESC TEC and University of Porto), João Neves (University of Beira Interior, NOVA-LINCS)

455: PRIVACY-PRESERVING VISUALIZATION OF BRAIN FUNCTIONAL NETWORK CONNECTIVITY

Ye Tao (Rutgers University), Anand D Sarwate (Rutgers University), Sandeep R Panta (Georgia State University), Sergey Plis (Georgia State University), Vince Calhoun (TReNDS)

501: MeLo: Low-rank Adaptation is Better than Fine-tuning for Medical Image Diagnosis

Yitao Zhu (ShanghaiTech University), Zhenrong Shen (Shanghai Jiao Tong University), Zihao Zhao (ShanghaiTech University), Sheng Wang (Shanghai Jiao Tong University), Xin Wang (Shanghai Jiao Tong University), Xiangyu Zhao (Shanghai Jiao Tong University), Dinggang Shen (ShanghaiTech University), Qian Wang (ShanghaiTech University)

1118: USING UNLABELED DATA IN SELF-SUPERVISED TRAINING IMPROVES AUTOMATIC VERTEBRAL BODY FRACTURE ASSESSMENT

Julian Lukas Laue (L3S Research Center), Christian Adolph (Ostfalia University for Applied Sciences), Eren Bora Yilmaz (Kiel University), Carsten Meyer (Ostfalia)

850: A Data-Driven Solution for the Cold Start Problem in Biomedical Image Classification

Salome Kazeminia (Helmholtz Munich), Miroslav Březík (Helmholtz Munich), Sayedali Shetab Boushehri (Roche Diagnostics GmbH), Carsten Marr (Helmholtz Munich)

Oral Session: Image segmentation

16:00 - 17:30

Marinos

Chairs: Yu Gan (Stevens Institute of Technology), Efthyvoulos Kyriacou (Cyprus University of Technology)

98: Continuous max-flow augmentation of self-supervised few-shot learning on SPECT left ventricles

Adam Istvan Szucs (Eötvös Loránd University), Béla Kári (Semmelweis University), Oszkár Pártos (Semmelweis University)

1213: A2DMN: Anatomy-Aware Dilated Multiscale Network for Breast Ultrasound Semantic Segmentation

Kyle L Lucke (University of Idaho), Aleksandar Vakanski (University of Idaho), Min Xian (University of Idaho)

213: FEATURES FUSION FOR DUAL-VIEW MAMMOGRAPHY MASS DETECTION

Arina Varlamova (Third Opinion Platform), Valery Belotsky (Third Opinion Platform), Grigory Novikov (Third Opinion Platform), Anton Konushin (Higher School of Economics), Evgeny Sidorov (Lomonosov Moscow State University)

364: MEDICAL IMAGE SEGMENTATION USING DIRECTIONAL WINDOW ATTENTION

Daniya Kareem (MBZUAI), Mustansar Fiaz (IBM Research), Noa Novershtern (Weizmann Institute), Hisham Cholakkal (MBZUAI)

715: Modality-Agnostic Learning for Medical Image Segmentation Using Multi-modality Self-distillation

Qisheng He (Wayne State University), Nicholas Summerfield (University of Wisconsin-Madison), Ming Dong (Wayne State University), Carri Glide-Hurst (University of Wisconsin-Madison)

1223: Improving Vertebrae Segmentation using a Centroid Detection-guided Transformer-based Network

Sevde Aydogdu (UCL), Ka W Yung (University College London), Danail Stoyanov (UCL), Deepak Kalaskar (UCL), Evangelos B Mazomenos (University College London)

Oral Session: Machine learning and image quality

16:00 - 17:30

MC3.4

Chair: Ilias Maglogiannis (University of Piraeus), Moti Freiman (Technion - Israel Institute of Technology)

883: Hybrid single-pixel camera for dynamic hyperspectral imaging

Thomas Maitre (CREATIS), Nicolas Ducros (University of Lyon / Biomedical Imaging Research Lab), Elie Bretin (Institut Camille Jordan and INSAdE Lyon), Michaël Sdika (CREATIS), Laurent Mahieu-Willame (CREATIS)

485: Single Image Compressed Sensing MRI via a Self-Supervised Deep Denoising Approach

Marlon E Bran Lorenzana (The University of Queensland), Feng Liu (The University of Queensland), Shekhar S Chandra (University of Queensland)

208: MD-IQA: Learning Multi-scale Distributed Image Quality Assessment with Semi Supervised Learning for Low Dose CT

Tao Song (Fudan University), Ruizhi Hou (East China Normal University), Lisong Dai (Shanghai Jiao Tong University), Lei Xiang (subtle Medical, Inc)

1218: Unsupervised Stabilization of Smartphone-based Quantitative Pupillometry for Mobile Emergency Medicine

Ivo John (Solvemed Inc.), Zipei Yan (City University of Hong Kong), Aleksander Bogucki (Solvemed Inc.), Michał Swiatek (Solvemed Inc.), Hugo Chrost (Solvemed Inc.), Michal Włodarski (Solvemed Inc.), Radosław Chrąpkiewicz (Solvemed Inc.), Jizhou Li (City University of Hong Kong)

668: Automated classification of multi-parametric body MRI series

Boah Kim (National Institute of Health), Tejas Sudharshan Mathai (National Institutes of Health (NIH)), Kimberly Helm (National Institutes of Health), Ronald Summers (NIH)

873: Multi-scale Adaptive Transformer for Image Deblurring in Magnetic Particle Imaging

Fan Yang (CAS Key Laboratory of Molecular Imaging, Institute of Automation, Chinese Academy of Sciences), Liwen Zhang (CAS Key Laboratory of Molecular Imaging, Institute of Automation, Chinese Academy of Sciences), Jiaxin Zhang (CAS Key Laboratory of Molecular Imaging, Institute of Automation, Chinese Academy of Sciences), Zechen Wei (CAS Key Laboratory of Molecular Imaging, Institute of Automation, Chinese Academy of Sciences), Xin Yang (CAS Key Laboratory of Molecular Imaging, Institute of Automation, Chinese Academy of Sciences), Jie Tian (CAS Key Laboratory of Molecular Imaging, Institute of Automation, Chinese Academy of Sciences), Hui Hui (Institute of Automation, Chinese Academy of Sciences)

Tutorial 4: DIMEDIA: Diffusion models in medical imaging and analysis - Part 2

16:00 - 17:30

Presenters: Julia Wolleb (University of Basel), Yuyang Xue (University of Edinburgh), Maria Nefeli Gkouti (Archimedes Unit, Greece)
MC2

Challenge 5: Justified referral in AI glaucoma screening (JUSTRAIGS) - Part 2

16:00 - 17:30

MC3.2

1628: Brighteye: Glaucoma Screening with Color Fundus Photographs based on Vision Transformer

Hui Lin (Northwestern University), Charilaos Apostolidis (Northwestern University), Aggelos Katsaggelos (Northwestern University)

1625: Automated Detection of Glaucoma and Diagnostic Features for JustRAIGS Challenge

Tomasz Kubrak (Tilburg University)

1629: JustRAIGS Competition Insights: An Ensemble of Methods for Automated Referable Glaucoma Diagnosis

Dan Presil (BGU)

Student and Young Professionals Event

18:30 - 23:30

En Aithria Athens

Technical Program: Wednesday, 29 May 2024

Challenge 1: BRATS generalizability across tumors (BRATS-GOAT) - Part 1

08:30 - 10:00

MC3.4

Oral Presentations

1620: On Enhancing Brain Tumor Segmentation Across Diverse Populations with Convolutional Neural Networks

Fadillah Adamsyah Maani (Mohamed Bin Zayed University of Artificial Intelligence), Anees Ur Rehman Hashmi (Mohamed bin Zayed University of Artificial Intelligence), Numan Saeed (Mohamed Bin Zayed University of Artificial Intelligence), Mohammad Yaqub (Mohamed Bin Zayed University of Artificial Intelligence)

1624: Generalisation of segmentation using Generative Adversarial Networks

André Ferreira (University of Minho), Gijs Luijten (Institute of artificial intelligence in medicine), Behrus Puladi (RWTH Aachen University), Jens Kleesiek (Institute for AI in Medicine (IKIM), University Hospital Essen), Victor Alves (University of Minho), Jan Egger (Institute for AI in Medicine, University Hospital Essen)

Poster Presentations

1606: Enhancing Brain Tumor Segmentation with Deep Supervision and Attention Mechanisms: Advances in the nnU-Net Framework

Yi-Zeng Fang (National Yang Ming Chiao Tung University)

1618: Enhancing Generalizability in Brain Tumor Segmentation: Model Ensemble with Adaptive Post-processing

Zhifan Jiang (Children's National Hospital), Daniel Capellán-Martín (Universidad Politécnica de Madrid), Abhijeet Parida (Children's National), Xinyang Liu (Children's National Hospital), María J Ledesma-Carbaya (Universidad Politécnica de Madrid), Syed Muhammad Anwar (Children National Hospital), Marius George Linguraru (Children's National Hospital)

1638: An UNet Boosting Training Strategy for the BRATS-ISBI 2024 GOAT Challenge

Riccardo Levi (IRCCS-Humanitas Research Hospital), Aldo Marzullo (IRCCS Humanitas Research Hospital), Giovanni Savini (Humanitas University), Victor Savevski (IRCCS-Humanitas Research Hospital), Letterio S. Politi (Humanitas University)

1649: BRAIN TUMOR SEGMENTATION THROUGH SUPERVOXEL TRANSFORMER

Yunfei Xie (Huazhong University of Science and Technology), Ce Chou (Huazhong University of Science and Technology), Jieru Mei (Johns Hopkins University), Xianhang Li (University of California, Santa Cruz), Cihang Xie (University of California, Santa Cruz), Yuyin Zhou (UC Santa Cruz)

Oral Session: CT Image segmentation

08:30 - 10:00

Skalkotas Auditorium

Chair: Ilias Maglogiannis (University of Piraeus)

1146: CT Liver Segmentation via PVT-based Encoding and Refined Decoding

Debesh Jha (Northwestern University), Nikhil Kumar Tomar (Indira Gandhi National Open University), Koushik Biswas (Northwestern University), Gorkem Durak (Northwestern University), Alpay Medetalibeyoglu (Northwestern University), Matthew D Antalek (Northwestern University, Feinberg School of Medicine, Department of Radiology), Yury Velichko (Northwestern University), Daniela Ladner (Northwestern University), Amir Borhani (Northwestern University), Ulas Bagci (Northwestern University)

1259: Rethinking Intermediate Layers design in Knowledge Distillation for Kidney and Liver Tumor Segmentation

Vandan Gorade (Northwestern University), Sparsh Mittal (IIT Roorkee), Debesh Jha (Northwestern University), Ulas Bagci (Northwestern University)

65: Coarse to Refined Kidney Segmentation Leveraging the SDRLSE Algorithm

Kun Huang (University of Science and Technology of China), Zou Xianghui (University of Science and Technology of China)

176: MSI-UNet: A Flexible UNet-based Multi-scale Interactive Framework for 3D Gastric Tumor Segmentation on CT Scans

Heyun Chen (Peking University), Zifan Chen (Peking University), Jie Zhao (Peking University), Haoshen Li (Peking University), jiazheng li (Department of Radiology, Peking University Cancer Hospital and Institute, Key Laboratory of Carcinogenesis and Translational Research (Ministry of Education)), Yiting Liu (Department of Radiation Peking University School of Oncology, Beijing Cancer Hospital & Institute Key laboratory of Carcinogenesis and Translational Research (Ministry of Education)), Mingze Yuan (Peking University), Peng Bao (Peking University), Xinyu Nan (Peking University), Bin Dong (Peking University), Lei Tang (Department of Radiation Peking University School of Oncology, Beijing Cancer Hospital & Institute Key laboratory of Carcinogenesis and Translational Research (Ministry of Education)), Li Zhang (Peking University)

541: FDNet: Feature Decoupled Segmentation Network for Tooth CBCT Image

Xiang Feng (HangZhouDianZi University), Chengkai Wang (Hangzhou Dianzi University), Chengyu Wu (Shandong University), Yunxiang Li (UT Southwestern Medical Center), Yongbo He (Hangzhou Dianzi University), Shuai Wang (Hangzhou Dianzi University), Yaqi Wang (Communication University of Zhejiang)

346: CONUNETR: A CONDITIONAL TRANSFORMER NETWORK FOR 3D MICRO-CT EMBRYONIC CARTILAGE SEGMENTATION

Nishchal Sapkota (University of Notre Dame), Yejia Zhang (University of Notre Dame), Susan M Motch Perrine (The Pennsylvania State University), Yuhan Hsi (Penn State University), Sirui Li (Southern University of Science and Technology), Meng Wu (Mayo Clinic), Gregory Holmes (Mayo Clinic), Abdul R Abdulai (Mayo Clinic), Ethylin W. Jabs (Icahn School of Medicine at Mount Sina), Joan T. Richtsmeier (The Pennsylvania State University), Danny Z Chen (University of Notre Dame)

Oral Session: Feature extraction and classification in histopathology images

08:30 - 10:00

Lecture

Chair: Enrico Grisan (London South Bank University), Jean-Christophe Olivo-Marin (Institut Pasteur)

44: Improving mitosis detection on histopathology images using large vision-language models

Ruiwen Ding (University of California, Los Angeles), James B Hall (Microsoft Research), Neil Tenenholtz (Microsoft Research), Kristen Severson (Microsoft Research)

96: Unleashing the Infinity Power of Geometry: A Novel Geometry-Aware Transformer (GOAT) for Whole Slide Histopathology Image Analysis

Mingxin Liu (Department of Computer Science and Technology, Heilongjiang University), Yunzan Liu (Heilongjiang University), Pengbo Xu (Heilongjiang University), Jiquan Ma (Heilongjiang University)

215: Tumor segmentation on whole slide images: training or prompting?

Huaqian Wu (Witsee), Clara Brémond-Martin (Witsee), Cedric Clouchoux (Witsee), Kévin François-Bouaou (Witsee)

891: A Pipeline for Histopathology Analysis of Prostate Cancer Guided by Mass Spectrometry Imaging

Jose M Luna (Mallinckrodt Institute of Radiology, Washington University School of Medicine in St. Louis), Hani Nakhoul (Mallinckrodt Institute of Radiology, Washington University School of Medicine in St. Louis), Cody Weimholt (Department of Pathology and Immunology, Washington University School of Medicine in St. Louis), Eric Kim (Department of Surgery, Washington University School of Medicine in St. Louis), Sheng-Kwei Song (Mallinckrodt Institute of Radiology, Washington University School of Medicine in St. Louis), Peggy Angel (Department of Cell Molecular Pharmacology and Experimental Therapeutics, Medical University of South Carolina), Richard Drake (Department of Cell Molecular Pharmacology and Experimental Therapeutics, Medical University of South Carolina), Joseph Ippolito (Mallinckrodt Institute of Radiology, Washington University School of Medicine in St. Louis)

921: Reducing Histopathology Slide Magnification Improves the Accuracy and Speed of Ovarian Cancer Subtyping

Jack J Breen (University of Leeds), Katie Allen (University of Leeds), Kieran Zucker (University of Leeds), Nicolas M. Orsi (University of Leeds), Nishant Ravikumar (University of Leeds)

1112: LOW-RESOURCE FINETUNING OF FOUNDATION MODELS BEATS STATE-OF-THE-ART IN HISTOPATHOLOGY

Benedikt Roth (Technical University of Munich), Valentin Koch (Helmholtz Munich), Sophia J. Wagner (Helmholtz AI), Julia A Schnabel (Technical University of Munich / Helmholtz Center Munich), Carsten Marr (Helmholtz Munich), Tingying Peng (TUM)

Oral Session: Tumor detection and classification

08:30 - 10:00

MC3.2

Chair: Oscar Acosta (LTSI INSERM U1099-Université de Rennes), Florence Cloppet (Université Paris Cité)

330: MM-DCNet: A multi-scale and multi-modality dynamic convolutional network for lung cancer subtypes classification

Gege Ma (Zhejiang Lab), Yuan Jin (Zhejiang Lab), Tianling Lyu (Zhejiang Lab), Geng Chen (Northwestern Polytechnical University), Zhuoxuan Wu (Sir Run Run Shaw Hospital, affiliated with the Zhejiang University School of Medicine), Jiaqi Zhao (Zhejiang Lab), Wentao Zhu (Zhejiang Lab)

725: KNOWLEDGE-GUIDED MULTI-TASK LEARNING FOR BREAST CANCER DIAGNOSIS USING LONGITUDINAL MAMMOGRAM IMAGES

Zhengbo Zhou (University of Pittsburgh), Dooman Arefan (University of Pittsburgh), Margarita Zuley (University of Pittsburgh), Degan Hao (University of Pittsburgh), Jules Sumkin (University of Pittsburgh), Shandong Wu (Department of Radiology, Biomedical Informatics, and Bioengineering, University of Pittsburgh)

1136: Radiomics and mechanistic hybrid model for prediction of recurrence in prostate cancer

Hilda Chourak (University of Rennes, CLCC Eugène Marquis, INSERM, LTSI - UMR 1099), Pierre Fontaine (Univ Rennes, CHU Rennes, CLCC Eugène Marquis, Inserm, LTSI - UMR 1099,F-35000 Rennes) , Aurélien Briens (Centre Eugène Marquis), Renaud De Crevoisier (Univ Rennes, CHU Rennes, CLCC Eugène Marquis, Inserm, LTSI - UMR 1099,F-35000 Rennes), Oscar Acosta (Laboratoire Traitement du Signal et de l'Image, Rennes), Carlos Sosa-Marrero (Univ Rennes, CLCC Eugène Marquis, INSERM, LTSI - UMR 1099, F-35000 Rennes)

1159: Automatic Endoscopy Classification by fusing Depth estimations and image Information

Diego F Bravo (Universidad Nacional de Colombia), Josue Ruano (Universidad Nacional de Colombia), Maria Jaramillo (Universidad Nacional de Colombia), Sebastian R Medina-Carrillo (Universidad Nacional de Colombia), Martín Gómez (Universidad Nacional de Colombia), Fabio A. Gonzalez (Universidad Nacional de Colombia), Eduardo Romero (Universidad Nacional de Colombia)

Oral Session: Ultrasound imaging

08:30 - 10:00

MC2

Chairs: Roberto Lavarello (Pontificia Universidad Católica del Perú), Spyretta Golemati (National and Kapodistrian University of Athens)

163: IMPROVED ULTRASOUND LOCALIZATION MICROSCOPY USING DEEP LEARNING ENHANCED BEAMFORMER

Lijie Huang (Tsinghua University), Hengrong Lan (Tsinghua University), Yadan Wang (Anhui Medical University), Rui Wang (Tsinghua University), Xingyue Wei (Tsinghua University), Qiong He (Tsinghua University), Jianwen Luo (Tsinghua University)

928: SUPER-RESOLUTION ULTRASOUND IMAGING OF TUMOR ANGIOGENESIS AND EVALUATION OF TREATMENT RESPONSE TO A VASCULAR DISRUPTING AGENT

Katherine G Brown (University of Texas at Dallas), Dominique James (University of Texas at Dallas), Brian Trinh (University of Texas at Dallas), Junjie Li (Harvard Medical School)

1304: ULTRASOUND LOCALIZATION MICROSCOPY OF THE BRAIN: THE MISSING MICRO VASCULATURE

Stephen A Lee (Polytechnique Montréal), Jonathan JP Poree (Polytechnique Montreal), Alexis Leconte (Polytechnique Montreal), Alice Wu (Polytechnique Montreal), Jean Provost (Polytechnique Montreal)

1313: Spatially-weighted inverse formulation for enhanced ultrasound attenuation imaging

Sebastian Merino (Pontificia Universidad Católica del Perú), Roberto Lavarello (Pontificia Universidad Católica del Perú)

440: Zoom is Meaningful: Discerning Ultrasound Images' Zoom Levels

Mohammad Alsharid (University of Oxford and Khalifa University), Robail Yasrab (University of Oxford), Md. Mostafa Kamal Sarker (University of Oxford), Lior Drukker (University of Oxford), Aris T Papageorgiou (University of Oxford), Alison Noble (University of Oxford)

661: Ultrasound Phantom of a Carotid Bifurcation Tumor using Multiple 3D Printed Soluble Filaments

Christian Marinus Huber (Department of Otorhinolaryngology, Head and Neck Surgery, Section of Experimental Oncology and Nanomedicine, Universitätsklinikum Erlangen), Christian Heim (Department of Microsystems Engineering (IMTEK), Laboratory for Electrical Instrumentation and Embedded Systems, University of Freiburg), Helmut Ermert (Department of Otorhinolaryngology, Head and Neck Surgery, Section of Experimental Oncology and Nanomedicine, Universitätsklinikum Erlangen), Stefan Rupitsch (Department of Microsystems Engineering (IMTEK), Laboratory for Electrical Instrumentation and Embedded Systems, University of Freiburg), Ingrid Ullmann (Institute of Microwaves and Photonics, University of Erlangen and Nürnberg), Martin Vossiek (Institute of Microwaves and Photonics, University of Erlangen and Nürnberg), Stefan Lyer (Department of Otorhinolaryngology, Head and Neck Surgery, Section of Experimental Oncology and Nanomedicine, Professorship for AI-Controlled Nanomaterials, Universitätsklinikum Erlangen)

Special Session 3: MRI Beyond the Norm: Pioneering Advances in Engineering, Image Processing, and Safety

08:30 - 10:00

Marinos

Chairs: Laleh Golestani Rad (Northwestern University)

8004: Mitigating peripheral nerve stimulation for improved MRI gradient performance

Lawrence L. Wald (Harvard Medical School)

8005: Dedicated RF Hardware for Concurrent TMS/fMRI & TMS/fMRI/EEG

Lucia Navarro de Lara (Harvard Medical School)

1586: Insights on tissue electrical properties, electrolyte transport and external stimulation effects using MRI

Rosalind J Sadleir (Arizona State University)

1591: Generative AI for Pre- and Post-Processing of MRI

Ulas Bagci (Northwestern University)

Art meets Biomedical Imaging - Wednesday

10:00 - 17:30

Skalkotas Auditorium Foyer

Poster Session 2: Wednesday

10:00 - 11:00

Banqueting Hall Foyer

Plenary 3

11:00 - 12:00

Banqueting Hall

Chair: Elisa Konofagou (Columbia University)

Personalized imaging and theragnostics

Katherine Ferrara (Professor and Division Chief, Molecular Imaging Program at Stanford)

Lunch - Wednesday (on your own)

12:00 - 13:30

Women in SPS/BMI lunch (Pre-registration required)

12:00 - 13:30

Allegro Hall

Clinical focus session: Clinical translation of AI for neurodegenerative and neuropsychiatric disease

13:30 - 14:30

Skalkotas Auditorium

Clinical focus session: Imaging and AI opportunities in oncology integrated diagnostics

13:30 - 14:30

Banqueting Hall

Academic Software Demo Session 2

14:30 - 17:30

Skalkotas Auditorium Foyer

Poster Session 3: Wednesday

14:30 - 17:30

Banqueting Hall Foyer

Challenge 1: BRATS generalizability across tumors (BRATS-GOAT) - Part 2

16:00 - 17:30

MC3.4

Oral Session: Anatomical segmentation

16:00 - 17:30

Marinos

Chair: Xiaoyi Jian (University of Münster)

1083: ConflUNet: Improving Confluent Lesion Identification in Multiple Sclerosis with Instance Segmentation

Maxence Wynen (UCLouvain, ICTEAM, ELEN, PiLab), Maxime Istasse (UCLouvain, ICTEAM, ELEN, ISPGroup), Pedro Macias Gordaliza (Lausanne University, Radiology Department, Medical Image Analysis Laboratory), Anna Stölting (UCLouvain, Louvain Neuroinflammation Imaging Lab), Pietro Maggi (Louvain Neuroinflammation Imaging Lab), Benoit Macq (UCLouvain), Meritxell Bach Cuadra (University of Lausanne)

610: SATR: A STRUCTURE-AFFINITY ATTENTION-BASED TRANSFORMER ENCODER FOR SPINE SEGMENTATION

Hao Xie (The Hong Kong Polytechnic University), Zixun Huang (The Hong Kong Polytechnic University), Frank Leung, Ngai Fong Law, Yakun Ju (Nanyang Technological University), Yong-Ping Zheng (The Hong Kong Polytechnic University), Steve Ling (University of Technology Sydney)

290: DBAHNet: Dual-Branch Attention-based Hybrid Network for High-Resolution 3D Micro-CT Bone Scan Segmentation

Amine Lagzouli (QUT, UPEC), Peter Pivonka (QUT), David Cooper (USASK), Vittorio Sansalone (UPEC), Alice Ahlem OTHMANI (UPEC)

1022: Retinal Layer Segmentation Using 1D+2D U-Net from OCT Images

Tsubasa Konno (Tohoku University), Takahiro Ninomiya (Tohoku University), Kanta Miura (Tohoku University), Koichi Ito (Tohoku University), Noriko Himori (Tohoku University), Parmanand Sharma (Tohoku University), Toru Nakazawa (Tohoku University), Takafumi Aoki (Tohoku University)

449: CROP AND COUPLE: CARDIAC IMAGE SEGMENTATION USING INTERLINKED SPECIALIST NETWORKS

Abbas Khan (Queen Mary University of London), Muhammad Asad (Queen Mary University of London), Martin Benning (University College London), Caroline Roney (Queen Mary University of London), Gregory Slabaugh (Queen Mary University of London)

Oral Session: Biological cell and bacteria tracking

16:00 - 17:30

Lecture

Chairs: Karl Rohr (Heidelberg University), Michal Kozubek (Masaryk University)

25: Transfer Learning Approach For Detecting Breast Cancer Tumour Subtypes In Whole-Slide Images

Varad Varavadeka (Dublin City University), Vineet Sajwan (Dublin City University), Claudia Mazo (Dublin City University)

639: Bacteria Tracking and Division Detection Using Graph Neural Networks

Moritz Kunzmann (University of Heidelberg), M. Carolina Elizondo-Cantú (University of Heidelberg), Max Planck Institute for Terrestrial Microbiology), Ilka B. Bischofs (University of Heidelberg, Max Planck Institute for Terrestrial Microbiology), Karl Rohr (University of Heidelberg, DKFZ)

641: AN ITERATIVE FREQUENCY-BASED APPROACH FOR GELMAP GRID DEFORMATION CORRECTION

Vincent J.W. Hellebrekers (Utrecht University), Ihor Smal (Utrecht University), Lukas Kapitein (Utrecht University), Josiah Passmore (Utrecht University)

658: An Automated Pipeline for Tumour-Infiltrating Lymphocyte Scoring in Breast Cancer

Adam J Shephard (University of Warwick), Mostafa Jahanifar (University of Warwick), Ruoyu Wang (University of Warwick), Muhammad Dawood (University of Warwick), Kastytis Sidlauskas (Queen Mary University of London), Simon D Graham (University of Warwick), Ali Khurram (University of Sheffield), Nasir Rajpoot (University of Warwick), Shan Raza (University of Warwick)

43: Characterising borderline areas in bladder tumour grading with Bayesian graph neural networks

Shangqi Gao (University of Cambridge), Lisa Browning (University of Oxford), Nasullah Alham (University of Oxford), Andrew Protheroe (University of Oxford), Keir Edwards (University of Oxford), Josh Hamblin (University of Oxford), Jens Rittscher (Oxford), Clare Verrill (University of Oxford)

111: Deep Asymmetric Mixture Model for Unsupervised Cell Segmentation

Yang Nan (Imperial College London), Guang Yang (Imperial College London)

Oral Session: Cerebrovascular MRI and fMRI

16:00 - 17:30

Skalkotas Auditorium

Chair: Ioannis Tsougos (University of Thessaly)

20: DS-COFFEE-Net: Dual-Stage CORrespondence-based Feature Fusion Edge Enhanced Network for Super-Resolution of CEST-MR Images

Wenxuan Chen (Tsinghua University), Sirui Wu (Tsinghua University), Zhongsen Li (Tsinghua University), Shuai Wang (Tsinghua University), Xiaolei Song (Tsinghua University)

467: MODALITY-AGNOSTIC STYLE TRANSFER FOR HOLISTIC FEATURE IMPUTATION

Seunghun Baek (POSTECH), Jaeyoon Sim (POSTECH), Mustafa Dere (UNC), Minjeong Kim (University of North Carolina at Greensboro), Guorong Wu (University of North Carolina), Won Hwa Kim (POSTECH)

975: COUPLING BETWEEN TIME-VARYING EEG SPECTRAL BANDS AND SPATIAL DYNAMIC fMRI NETWORKS

Souvik Phadikar (Center for Translational Research in Neuroimaging and Data Science (TReNDS)), Krishna Pusuluri (Georgia State University), Kyle Jensen (Georgia State University), Lei Wu (Georgia State University), Armin Iraji (Georgia State University), Vince Calhoun (TReNDS)

401: DIFFUSION MODELS WITH ENSEMBLED STRUCTURE-BASED ANOMALY SCORING FOR UNSUPERVISED ANOMALY DETECTION

Finn Behrendt (Hamburg University of Technology), Debayan Bhattacharya (Hamburg University of Technology), Lennart Maack (Hamburg University of Technology), Julia Krüger (Jung diagnostics GmbH), Roland Opfer (Jung diagnostics GmbH), Robin Mieling (Hamburgg University of Technology), Alexander Schlaefer (Hamburg University of Technology)

790: Localization of epileptogenicity using incomplete MRI sequence data in children with seizure onset zone involving temporal lobe

Soumyanil Banerjee (Wayne State University), Qisheng He (Wayne State University), Min-Hee Lee (Wayne State University), Ming Dong (Wayne State University), Eishi Asano (Wayne State University), Jeong-Won Jeong (Wayne State University)

499: Semi-supervised cerebrovascular segmentation using TOF-MRA images based on label refinement and consistency regularization

Haibin Huang (Institute of Automation, Chinese Academy of Sciences), Yue Cui (Institute of Automation, Chinese Academy of Sciences), Mingxia Shi (Institute of Automation, Chinese Academy of Sciences), Shan Yu (Brainnetome Center and NLPR, University of Chinese Academy of Sciences, CAS Center for Excellence in Brain Science and Intelligence Technology, Chinese Academy of Sciences)

Oral Session: Multimodality fusion (I)

16:00 - 17:30

MC2

Chair: Baba Vemuri (University of Florida)

68: Path-GPTomic: A Balanced Multi-modal Learning Framework for Survival Outcome Prediction

Hongxiao Wang (Capital Normal University), Yang Yang (Novartis), Zhuo Zhao (University of Notre Dame), Pengfei Gu (University of Notre Dame), Nishchal Sapkota (University of Notre Dame), Danny Z Chen (University of Notre Dame)

70: 3D MULTI-MODALITY FREE-HAND ULTRASOUND IMAGING FOR MEDICAL RESEARCH

Shen

90: FOAA: Flattened Outer Arithmetic Attention for Multimodal Tumor Classification

Omnia Alwazzan (Queen Mary University of London), Ioannis Patras (Queen Mary University of London), Gregory Slabaugh (Queen Mary University of London)

255: WEAKLY SUPERVISED CROSS-MODAL LEARNING IN HIGH-CONTENT SCREENING

Cohen Ethan (Ecole Normale Supérieur), Watkinson Gabriel (École Normale Supérieure), Bendidi Ihab (École Normale Supérieure), Bourriez Nicolas (École Normale Supérieure), Guillaume Bollot (SYNSIGHT), Auguste Genovesio (École Normale Supérieure)

314: Parkinson's Disease Classification Using Contrastive Graph Cross-View Learning with Multimodal Fusion of SPECT Images and Clinical Features

Jun-En Ding (Stevens Institute of Technology), Chien-Ching Hsu (Dept. Nuclear Medicine, Kaohsiung Chang Gung Memorial Hospital), Feng Liu (Stevens Institute of Technology)

780: IMAGE SYNTHESIS OF HEPATOBILIARY PHASE USING CONTRAST-ENHANCED MRI AND DIFFUSION MODEL

Shangxuan Li (School of Medical Information Engineering, Guangzhou University of Chinese Medicine), Baoer Liu (Department of Medical Imaging Center, Nanfang Hospital, Southern Medical University), Feilin Deng (School of Medical Information Engineering, Guangzhou University of Chinese Medicine), Yikai Xu (Department of Medical Imaging Center, Nanfang Hospital, Southern Medical University), Wu Zhou (Guangzhou University of Chinese Medicine)

Special Session 4: Brain Graph Signal Processing

16:00 - 17:30

MC3.2

Chairs: Hamid Behjat (EPFL & Lund), Selin Aviyente (Michigan State University), Dimitri Van De Ville (EPFL)

1529: A characterization of graph spectral properties of brain activity decomposed over functional and structural connectivity

Nicolas Farrugia (IMT Atlantique), Venkatesh Subramani (IMT Atlantique), Karim Jerbi (Université de Montréal), Giulia Lioi (IMT Atlantique)

1483: Linking brain structure and dynamics using the eigenmodes of cortical geometry

James C Pang (Monash University), Kevin Aquino (BrainKey Inc.), Alex Fornito (Monash)

1476: GSP-derived brain features for classification in anxiety and depression

Sébastien Dam (INRIA), Pierre Maurel (Université Rennes 1), Julie Colognier (IRISA)

1479: GSP for community detection in functional connectivity networks

Meiby Ortiz-Bouza (Michigan State University), Selin Aviyente (Michigan State University)

1495: Structural range of cortical functional interactions quantified by graph signal processing

Hamid Behjat (Ecole Polytechnique Fédérale de Lausanne), Maria Giulia Preti (EPFL), Dimitri Van De Ville (Ecole polytechnique fédérale de Lausanne (EPFL) and University of Geneva)

Symbolic Marathon (Pre-registration required)

18:00 - 20:00

Panathenaic Stadium

Visit to the National Archaeological Museum (Pre-registration required)

18:00 - 20:00

National Archaeological Museum

Technical Program: Thursday, 30 May 2024

Oral Session: Deep learning and generative AI

08:30 - 09:30

MC3.2

Chairs: Alex Karargyris (MLCommons), Pierre-Henri Conze (Inserm Grand-Ouest)

240: Content-aware Adversarial Network with Gradient-enhanced Dose Rectification for Radiotherapy Dose Prediction

Zhenghao Feng (Sichuan University), Lu Wen (Sichuan University), Yuanyuan Xu (Sichuan University), Binyu Yan (Sichuan University), Jiliu Zhou (Sichuan University), Yan Wang (Sichuan University)

1140: Fast-Track of F-18 Positron paths simulations with GANs

Youness Mellak (LaTIM, Inserm UMR 1101, Université de Bretagne Occidentale, Brest), Konstantinos Chatzipapas (LaTIM, Inserm UMR 1101, Université de Bretagne Occidentale, Brest), Alexandre Bousse (University of Western Brittany), Catherine Cheze-Le-Rest (Nuclear Medicine Dept, University of Poitiers, University Hospital of Poitiers, Poitiers, France), Dimitris Visvikis (LaTIM, Inserm), Julien Bert (LaTIM, Inserm)

1054: Cross-platform Super-resolution for Human Coronary OCT Imaging using Deep Learning

Xueshen Li (Stevens Institute of Technology), Aaron Shamouil (Stevens Institute of Technology), Xinlong Hou (Stevens Institute of Technology), Brigitta Brott (The University of Alabama at Birmingham), Silvio Litovsky (The University of Alabama at Birmingham), Yuye Ling (Shanghai Jiao Tong University), Yu Gan (Stevens Institute of Technology)

1017: Nowhere to hide: Toward robust reactive medical adversarial defense

Qingsong Yao (Institute of Computing Technology, CAS), Zecheng He (Princeton University), Xiaodong Yu (National University of Singapore), S. Kevin Zhou (USTC)

Oral Session: Histopathological and electron microscopy imaging

08:30 - 09:30

Skalkotas Auditorium

Chairs: Sokratis Makrogiannis (Delaware State University), Maria Vakalopoulou (CentraleSupélec)

571: Pushing the limits of cell segmentation models for imaging mass cytometry

Kimberley M Bird (University of Lincoln), Xujiong Ye (University of Lincoln), Alan M Race (AstraZeneca), James M Brown (University of Lincoln)

599: Relationship between Nuclear Invaginations and Mitochondria in HeLa cells observed with Electron Microscopy

Daniel A. Brito-Pacheco (Universidad Autónoma de Yucatan), Panos Giannopoulos (University of London), Constantino Carlos Reyes-Aldasoro (City University of London), Carlos Brito-Loeza (Universidad Autónoma de Yucatan), Cefa Karabag (London Metropolitan University)

687: Automatic Report Generation for Histopathology images using pre-trained Vision Transformers and BERT

Saurav Sengupta (University of Virginia), Donald Brown (University of Virginia)

1121: How many labels do I need? Self-supervised learning strategies for multiple blood parasites classification in microscopy images

Roberto Mancebo-Martín (Spotlab), Lin Lin (Spotlab), Elena Dacal (Spotlab), Miguel Luengo-Oroz (Spotlab), David Bermejo-Peláez (Spotlab)

Oral Session: MRI and brain diseases

08:30 - 09:30

Marinos

Chair: Ioannis Tsougos (University of Thessaly), Laurence Wald (Massachusetts General Hospital)

486: Neurodegenerative Disease Prediction via Transferable Deep Networks

Yanfu Zhang (William and Mary), Runxue Bao (University of Pittsburgh), Guodong Liu (University of Pittsburgh), Liang Zhan (University of Pittsburgh), Paul Thompson (Imaging Genetics Center), Heng Huang (University of Maryland at College Park)

458: Spatial Sequence Attention Network for Schizophrenia Classification from Structural Brain MR Images

Nagur Shaik (Georgia State University), Teja Cherukuri (Georgia State University), Vince Calhoun (TReNDS), Dong Hye Ye (Georgia State University)

939: MILD COGNITIVE IMPAIRMENT CLASSIFICATION USING A NOVEL FINER-SCALE BRAIN CONNECTOME

Yanjun Lyu (University of Texas at Arlington), Lu Zhang (University of Texas at Arlington), Xiaowei Yu (University of Texas at Arlington), Chao Cao (University of Texas at Arlington), Tianming Liu (University of Georgia), Dajiang Zhu (University of Texas at Arlington)

Oral Session: Multimodality fusion (II)

08:30 - 09:30

Lecture

Chairs: Costas Pattichis (University of Cyprus & CYENS Centre of Excellence), Irina Voiculescu (Oxford University)

1320: Multi-scale Co-attention Transformer Model to Integrate Radiology, Histology, and Genomics: Application to Survival Prediction in Glioblastoma

Olivia Krebs (Case Western Reserve University), Pallavi Tiwari (University of Wisconsin-Madison)

1345: Optimizing Skin Lesion Classification via Multimodal Data and Auxiliary Task Integration

Mahapara Khurshid (Indian Institute of Technology, Jodhpur), Mayank Vatsa (IIT Jodhpur), Richa Singh (IIT Jodhpur)

759: Auditory fiber bundle parcellation using text-prompted decomposition networks

Jinchen Gu (ShanghaiTech University), Yaoxuan Wang (Shanghai Ninth People's Hospital, Shanghai Jiaotong University School of Medicine), Caiwen Jiang (ShanghaiTech University), Jiameng Liu (ShanghaiTech University), Yuting Zhu (Shanghai Jiao Tong University School of Medicine), Mengda Jiang (Shanghai Jiao Tong University School of Medicine), Zhaoyan Wang (Shanghai Jiao Tong University School of Medicine), Feihong Liu (Northwest University), Hao Wu (Shanghai Jiao Tong University School of Medicine), Dinggang Shen (ShanghaiTech University)

534: ICHPro: Intracerebral Hemorrhage Prognosis Classification via Joint-Attention Fusion-based 3D Cross-Modal Network

Xinlei Yu (Hangzhou Dianzi University), Xinyang LI (The Chinese University of Hong Kong, Shenzhen), Ruiquan Ge (Hangzhou Dianzi University), Shibin Wu (Ping An Technology), Ahmed Elazab (Shenzhen University), Jichao Zhu (Longgang District Central Hospital of Shenzhen), Lingyan Zhang (Lab of Molecular Imaging and Medical Intelligence; Department of Radiology, Longgang Central Hospital of Shenzhen), Gangyong Jia (Hangzhou Dianzi University), Taosheng Xu (Hefei Institutes of Physical Science, Chinese Academy of Sciences), Xiang Wan (Shenzhen Research Institute of Big Data, the Chinese University of Hong Kong (Shenzhen)), Changmiao Wang (Shenzhen Research Institute of Big Data)

Oral Session: Skin image analysis

08:30 - 09:30

MC3.4

Chairs: Michael Liebling (Idiap Research Institute)

1116: Spatial Reasoning Loss for Weakly Supervised Segmentation of Skin Histological Images

Mateus Sangalli (Mines Paris, PSL University), Santiago Velasco-Forero (Mines Paris, PSL University), José-Márcio da Cruz (Mines Paris, PSL University), Charlène Gayrard (L'Oréal Research and Innovation), Virginie Flouret (L'Oréal Research and Innovation), Thérèse Baldeweck (L'Oréal Research and Innovation), Etienne Decencière (Mines Paris, PSL University)

1350: IMPROVING ACNE IMAGE GRADING WITH LABEL DISTRIBUTION SMOOTHING

Kirill Prokhorov (Openface.io), Alexandr A. Kalinin (Broad Institute of MIT and Harvard)

121: Boosting Dermatoscopic Lesion Segmentation via Diffusion Models with Visual and Textual Prompts

Shiyi Du (Carnegie Mellon University), Xiaosong Wang (Shanghai AI Laboratory), Yongyi Lu (Guangdong University of Technology), Yuyin Zhou (UC Santa Cruz), Shaoting Zhang (Shanghai AI Lab), Alan Yuille (Johns Hopkins University), Kang Li (West China Hospital-SenseTime Joint Lab, West China Biomedical Big Data Center, Sichuan University West China Hospital), Zongwei Zhou (Johns Hopkins University)

492: A Tiered Quadruplet Network with Patient-Specific Mining and Dynamic Margin for Improved Ugly Duckling Lesion Classification

Dilmi NU Naranpanawa (The University of Queensland), Peter Soyer, Adam Mothershaw (Frazer Institute), Gayan Kulatilleke (The University of Queensland), Zongyuan Ge (Monash), Brigid Betz-Stablein (Frazer Institute), Shekhar S Chandra (University of Queensland)

Oral Session: X-ray methods and applications

08:30 - 09:30

MC2

Chair: Syed Muhammad Anwar (Children's National Hospital)

99: Long-tailed multi-label classification with noisy label of thoracic diseases from chest X-ray

Haoran Lai (University of Science and Technology of China), Qingsong Yao (Institute of Computing Technology, CAS), Zhiyang He (Xunfei Healthcare Technology Co., Ltd.), Xiaodong Tao (Xunfei Healthcare), S. Kevin Zhou (USTC)

1309: BS-DIFF: EFFECTIVE BONE SUPPRESSION USING CONDITIONAL DIFFUSION MODELS FROM CHEST X-RAY IMAGES

Zhanghao Chen (Hangzhou Dianzi University), Yifei Sun (Hangzhou Dianzi University), Wenjian Qin (Shenzhen Institutes of Advanced Technology), Ruiquan Ge (Hangzhou Dianzi University), Cheng Pan (Sanda University), WenMing Deng (National Cancer Center/National Clinical Research Center for Cancer/Cancer Hospital & Shenzhen Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College), Zhou Liu (Cancer Hospital & Shenzhen Hospital, Chinese Academy of Medical Sciences), Wenwen Min (Yunnan University), Ahmed Elazab (Shenzhen University), Xiang Wan (Shenzhen Research Institute of Big Data, the Chinese University of Hong Kong (Shenzhen)), Changmiao Wang (Shenzhen Research Institute of Big Data)

1326: LOW-RESOLUTION CHEST X-RAY CLASSIFICATION VIA KNOWLEDGE DISTILLATION AND MULTI-TASK LEARNING

Yasmeena Akhter (IIT Jodhpur), Rishabh Ranjan (IITJ), Richa Singh (IIT Jodhpur), Mayank Vatsa (IIT Jodhpur)

1169: Zero-Shot Pediatric Tuberculosis Detection in Chest X-Rays using Self-Supervised Learning

Daniel Capellán-Martín (Universidad Politécnica de Madrid), Abhijeet Parida (Childrens National), Juan José Gómez (UPM), Ramon Sanchez-Jacob (Children's National Hospital), Pooneh Roshanitabrizi (Children's National Hospital), Marius George Linguraru (Children's National Hospital), Maria J Ledesma-Carbayo (Universidad Politécnica de Madrid), Syed Muhammad Anwar (Children National Hospital, Washington DC)

Poster Session 4: Thursday

09:30 - 11:00

Banqueting Hall Foyer

Art meets Biomedical Imaging - Thursday

10:00 - 17:30

Skalkotas Auditorium Foyer

Plenary 4

11:00 - 12:00

Banqueting Hall

Chair: Nikos Paragios (Université Paris-Saclay, TheraPanacea)

An alternative view of denoising diffusion models

Francis Bach (Machine learning Group leader, Inria, Ecole Normale Supérieure)

Lunch - Thursday (on your own)

12:00 - 13:00

Challenge 3: Light my cells: Bright field to fluorescence imaging challenge 2024 (LIGHTMYCELLS)

13:00 - 14:30

Lecture

Oral Presentations

1627: Self-supervised Vision Transformers for image-to-image labeling: a BiPy solution to the LightMyCells Challenge

Daniel Franco-Barranco (Donostia International Physics Center), Aitor González-Marfil (Donostia International Physics Center), Ignacio Arganda-Carreras (University of the Basque Country (UPV/EHU))

1631: 2D Label-free Prediction of Multiple Organelles Across Different Transmitted-light Microscopy Images with Bag-of-Experts

Yu Zhou (Leibniz-Institut für Analytische Wissenschaften - ISAS - e.V.), Shuo Zhao (Leibniz-Institut für Analytische Wissenschaften - ISAS - e.V.), Jianxu Chen (Leibniz-Institut für Analytische Wissenschaften – ISAS – e.V.), Justin Sonneck (Leibniz-Institut für Analytische Wissenschaften - ISAS - e.V.)

1641: Patch-Based Encoder-Decoder Architecture for Automatic Transmitted Light to Fluorescence Imaging Transition:

Contribution to the LightMyCells Challenge

Marek Wodzinski (AGH UST), Henning Müller (HES-SO, Sierre)

Poster Presentation

1616: Generating Cytoplasmic Fluorescence Image from a Single Transmitted Light Microscopy Image with Pyramid Pix2pixelf-supervised Vision Transformers for image-to-image labeling: a BiPy solution to the LightMyCells Challenge

Jianyuan Zeng (Shenzhen Technology University); Tianzhao Zhong (Shenzhen Technology University); Jincai Huang (Shenzhen Technology University); Jinfeng Peng (Shenzhen Technology University); Shaojun Liu (Shenzhen Technology University)

Challenge 6: Towards 3D Atlas of Human Body

13:00 - 14:30

MC2

Tutorial 1: AI Tools for Computational Neuroanatomy

13:00 - 14:30

Presenters: Bramsh Chandio (University of Southern California), Shreyas Fadnavis (Harvard University), Ariel Rokem (University of Washington, Seattle), Jaroslaw Harezlak (Indiana University)

MC3.2

Tutorial 5: Explainable Artificial Intelligence in Biomedical Imaging - Part I

13:00 - 14:30

Presenters: Nicolas Karakatsanis (Cornell University), Ioanna Chouvarda (Aristotle University of Thessaloniki), Theofanis Ganitidis (National Technical University of Athens), Dimitris Fotopoulos (Aristotle University of Thessaloniki)

Skalkotas Auditorium

Tutorial 6: Fairness Of AI in Medical Imaging (FAIMI) - Part I

13:00 - 14:30

Presenters: Andrew King (King's College London), Enzo Ferrante (CONICET / Universidad Nacional del Litoral), Melanie Ganz (Copenhagen University), Eike Petersen (Technical University of Denmark), Veronika Cheplygina (IT University of Copenhagen), Esther Puyol-Antón (HeartFlow), Ben Glocker (Imperial College London), Daniel Moyer (Vanderbilt University), Tareen Dawood (King's College London), Nina Weng (Technical University of Denmark)

Marinos

Tutorial 8: National Cancer Institute Imaging Data Commons as a resource to support transparency, reproducibility, and scalability in imaging AI

13:00 - 14:30

Presenters: Daniela Schacherer (Fraunhofer MEVIS, Bremen), David Clunie (DICOM Standards Committee), André Homeyer (Fraunhofer MEVIS, Bremen), Ulrike Wagner (Frederick National Laboratory for Cancer Research), Erika Kim (US National Cancer Institute [NCI] Data Ecosystems Branch), Ron Kikinis (Brigham and Women's Hospital / Harvard Medical School)

MC3.4

Coffee Break - Thursday Afternoon

14:30 - 15:00

Music Library & Skalkotas Auditorium Foyers

Oral Session: Biological tissue characterization

15:00 - 16:30

Lecture

Chairs: Francesco Ciompi (Radboud University Medical Center), Gregoire Malandain (INRIA)

848: Detecting symmetry in ascidian embryo

Grégoire Malandain (INRIA), Patrick Lemaire (CNRS)

1034: Continuous cell cycle representation using ordinal regression and siamese network from quantitative phase images

Alexandr Yu Kondratiev (Tokyo University), Yugo Inutsuka (Tokyo University), Yasushi Okada (Tokyo University)

1202: Finding Out and Quantifying Nuclei Differences in Metaplastic Gastric Glands and Surrounding Nuclei

Ricardo Moncayo (Universidad Nacional de Colombia), Maria Jaramillo (Universidad Nacional de Colombia), Leidy T Molano (Universidad Nacional de Colombia), David Cordoba (Universidad de Nariño), David Becerra (Universidad Nacional de Colombia), Javier Revelo (Universidad de Nariño), Martin Gómez (Hospital Universitario), Fabio A. Gonzalez (Universidad Nacional de Colombia, Colombia), Eduardo Romero (Universidad Nacional de Colombia)

1055: Robust Approximate Characterization of Single-Cell Heterogeneity in Microbial Growth

Richard Dominik Paul (Forschungszentrum Jülich), Johannes Seiffarth (Forschungszentrum Jülich), Hanno Scharr (Forschungszentrum Juelich), Katharina Nöh (Forschungszentrum Jülich)

1128: Transformer-Based Neural Network for Joint Affine and Non-Rigid Registration of Temporal Live Cell Microscopy Images

Kerem Celikay (Biomedical Computer Vision Group), Karl Rohr (University of Heidelberg, DKFZ)

1224: An Expert-driven Data Generation Pipeline for Histological Images

Roberto Basla (Politecnico di Milano), Loris Giulivi (Politecnico Di Milano), Luca Magri (Politecnico di Milano), Giacomo Boracchi (Politecnico di Milano)

Oral Session: Brain neural networks

15:00 - 16:30

MC2

Chair: Sergei Plis (TReNDS/Georgia State University)

523: MODELLING SPATIO-TEMPORAL FEATURES OF TASK FMRI DATA VIA SPATIO-TEMPORAL FUSION-TRANSFORMER

Yudan Ren (Northwest University), Zhenqing Ding (Northwest University), Ruinan Yang (Northwest University), Kexin Wang (Northwest University), Kexin Sun (Northwest University), Xiao Li (Northwest University), Xiaowei He (Northwest University)

516: IDENTIFYING FUNCTIONAL BRAIN NETWORKS UNDER NATURALISTIC PARADIGM VIA A THREE-DIMENSIONAL SPATIAL ATTENTION CONVOLUTION AUTOENCODER

Yudan Ren (Northwest University), Song Yin (Northwest University), Zhengyang Liu (Northwest University), Kexin Wang (Northwest University), Mingnan Le (School of Information Science and Technology, Northwest University), Wei Zhang (School of Information Science and Technology, Northwest University), Xiao Li (Northwest University)

1271: Rethinking Dual-Domain Undersampled MRI reconstruction: domain-specific design from the perspective of the receptive field

Ziqi Gao (University of Science and Technology of China), Kevin Zhou (USTC)

1132: Spectral brain graph neural network for prediction of anxiety in children with Autism Spectrum Disorder

Peiyu Duan (Yale University), Nicha Dvornek (Yale University), Jiayao Wang (Yale University), Jeffery Eilbott (Yale University), Yuexi Du (Yale University), Denis Sukhodolsky (Yale University), James S Duncan (Yale University)

1234: FOD-Swin-Net: angular super resolution of fiber orientation distribution using a transformer-based deep model

Mateus O. Oliveira da Silva (UNICAMP), Caio Pinheiro Santana (UNICAMP), Diedre Carmo (UNICAMP), Letícia Rittner (University of Campinas)

1336: An Approach to Survival Analysis in Glioma using Intra-Regional Ratiometric MR Image Features

Subham Chakraborty (IIT Madras), Sreelakshmi S (IIT Madras), Anandh K R (Cincinnati Children's Hospital Medical Center), Swathi Sudhakar (IIT Madras), Ramakrishnan Swaminathan (IIT Madras)

Oral Session: Optical, MRI and CT synthesis approaches

15:00 - 16:30

MC3.2

Chair: Andrew Laine (Columbia University), Zhaolin Chen (Australia)

369: Retinal OCT Synthesis with Denoising Diffusion Probabilistic Models for Layer Segmentation

Yuli Wu (RWTH Aachen University), Weidong He (Tsinghua University), Dennis Eschweiler (RWTH Aachen University), Ningxin Dou (Shenzhen Eye Hospital), Zixin Fan (Shenzhen Eye Hospital), Shengli Mi (Tsinghua University), Peter Walter (RWTH Aachen University), Johannes Stegmaier (RWTH Aachen University)

538: DCE-FORMER: A TRANSFORMER-BASED MODEL WITH MUTUAL INFORMATION AND FREQUENCY-BASED LOSS FUNCTIONS FOR EARLY AND LATE RESPONSE PREDICTION IN PROSTATE DCE-MRI

Sadhana S (Indian Institute of Technology Madras), Sriprabha Ramanarayanan (HTIC), Arunima Sarkar (IIT Madras), Keerthi Ram (Healthcare Technology Innovation Centre, Indian Institute of Technology, Madras), Naga Gayathri Matcha (Indian Institute of Technology Madras), Suresh Joel (GE HealthCare), Harsh Agarwal (GE HealthCare), Ramesh Venkatesan (GE Healthcare), Mohanasankar Sivaprakasam (Indian Institute of Technology, Madras)

490: Self-Supervised Noise-Aware Kernel Synthesis for Improved X-ray Computed Tomography Imaging

Hemant Kumar Aggarwal (GE HealthCare), Phaneendra Yalavarthy (GE HealthCare), Rajesh Langoju (GE HealthCare)

143: High-resolution 3D CT synthesis from bidirectional X-ray Images using 3D Diffusion Model

Syeop Yoon (Massachusetts General Hospital and Harvard Medical School), Jayanth S Pratap (Massachusetts General Hospital and Harvard Medical School), Wen-Chih Liu (Harvard Medical School), Matthew Tivnan (Massachusetts General Hospital), Hui Ren (HMS/MGH), Abhiram Bhashyam (Massachusetts General Hospital and Harvard Medical School), Quanzheng Li (Massachusetts General Hospital and Harvard Medical School), Neal Chen (Massachusetts General Hospital and Harvard Medical School), Xiang Li (Massachusetts General Hospital and Harvard Medical School)

568: Brain MRI synthesis using StyleGAN2-ADA

Matteo Lai (University of Bologna), Chiara Marzi (University of Florence), Mario Mascalchi (University of Florence), Stefano Diciotti (University of Bologna)

Oral Session: Vascular image analysis

15:00 - 16:30

MC3.4

Chairs: Nadja Kachenoura (Sorbonne Université), Spyretta Golemati (National and Kapodistrian University of Athens)

10: Learning Disentangled Representation for Vessel-Specific Coronary Artery Calcium Scoring

Junjie Hou (Yizhun Medical AI Co., Ltd), Nianxi Liao (Yizhun Medical AI Co., Ltd), Jia Liu (Peking University First Hospital), Yuhang Liu (Yizhun Medical AI Co., Ltd), Jianxing Qiu (Peking University First Hospital)

145: CLINICAL RISK-AWARE MULTI-LEVEL GRADING FOR CORONARY ARTERY STENOSIS THROUGH CURVED FEATURE RECONSTRUCTION

Shishuang Zhao (Yizhun Medical AI Co., Ltd), Hongtai Li (The first hospital of China Medical University), Haoning Sun (Peking University People's Hospital), Jian Liu (Peking University People's Hospital), Libin Liang (Xi'an Jiaotong University), Yuhang Liu (Yizhun Medical AI Co., Ltd)

202: Unsupervised Domain Adaptation for Brain Vessel Segmentation through Transwarp Contrastive Learning

Fengming Lin (University of Leeds), Yan Xia (University of Leeds), Yash Deo (University of Leeds), Michael MacRaile (University of Leeds), Haoran Dou (University of Leeds), Qiongyao Liu (University of Leeds), Kun Wu (University of Leeds), Nishant Ravikumar (University of Leeds), Alejandro Federico Frangi (University of Manchester)

993: TSI-Net: A Timing Sequence Image Segmentation Network for Intracranial Artery Segmentation in Digital Subtraction Angiography

Lemeng Wang (Beijing University of Posts and Telecommunications), Wentao Liu (Beijing University of Posts and Telecommunications), Weijin Xu (Beijing University of Posts and Telecommunications), Li Haoyuan (Beijing university of post and telegram), Huihua Yang (Beijing University of Posts and Telecommunications), Feng Gao (Beijing Tiantan Hospital, Capital Medical University)

1000: Vascular Topology Rectification Network for Automated Retinal Artery/Vein Segmentation

Zhan Heng (University of New South Wales), Maurice Pagnucco (UNSW), Erik Meijering (University of New South Wales), Yang Song (University of New South Wales)

1091: Deep Supervision by Gaussian Pseudo-label-based Morphological Attention for Abdominal Aorta Segmentation in Non-Contrast CTs

Qixiang Ma (Université de Rennes), Antoine Lucas (Univ Rennes, CHU Rennes, Inserm, LTSI - UMR 1099), Adrien Kaladji (Department of Cardiothoracic and Vascular Surgery, CHU Rennes, 35033 Rennes, France), Pascal Haigron (LTSI, Rennes, France)

Tutorial 1: Demo Session - AI Tools for Computational Neuroanatomy

15:00 - 16:30

Skalkotas Auditorium Foyer

Tutorial 5: Explainable Artificial Intelligence in Biomedical Imaging - Part II

15:00 - 16:30

Presenters: Nicolas Karakatsanis (Cornell University), Ioanna Chouvarda (Aristotle University of Thessaloniki), Theofanis Ganitidis (National Technical University of Athens), Dimitris Fotopoulos (Aristotle University of Thessaloniki)

Skalkotas Auditorium

Tutorial 6: Fairness Of AI in Medical Imaging (FAIMI) - Part II

15:00 - 16:30

Presenters: Andrew King (King's College London), Enzo Ferrante (CONICET / Universidad Nacional del Litoral), Melanie Ganz (Copenhagen University), Eike Petersen (Technical University of Denmark), Veronika Cheplygina (IT University of Copenhagen), Esther Puyol-Antón (HeartFlow), Ben Glocker (Imperial College London), Daniel Moyer (Vanderbilt University), Tareen Dawood (King's College London), Nina Weng (Technical University of Denmark)

Marinos

Tutorial 8: Demo Session - National Cancer Institute Imaging Data Commons as a resource to support transparency, reproducibility, and scalability in imaging AI

15:00 - 16:30

Skalkotas Auditorium Foyer

Closing/Awards/ISBI2025

16:30 - 17:30

Banqueting Hall

Poster Session 1: Tuesday, May 28

Poster Session 1: Tuesday, May 28

Topics: Biomedical applications, Integrated Modeling and Classification

10:00 - 11:30

Banqueting Hall Foyer

Chair: Maria Athanasiou (National Technical University of Athens), Lorenza Brusini (University of Verona)

Note: * Denotes 4-Page Paper Submission

85: A Landmark-based Approach for Instability Prediction in Distal Radius Fractures*

Yang Zhao (La Trobe University), Zhibin Liao (University of Adelaide), Yunxiang Liu (The University of Adelaide), Koen Oude Nijhuis (University Medical Centre Groningen), Britt Barvelink (Erasmus Medical Center), Jasper Prijs (UMCG), Joost W Colaris (Erasmus University Medical Center), Mathieu Wijffels (Erasmus Medical Center), Max Reijman (Erasmus MC), Zeyu Zhang (The Australian National University), Minh-Son To (Flinders University), Ruurd L Jaarsma (Flinders Medical Centre), Job Doornberg (Universitair Medisch Centrum Groningen), Johan Verjans (SAHMRI)

633: A Wavelet Guided Attention Module for Skin Cancer Classification with Gradient-based Feature Fusion*

Ayush Roy (Jadavpur University), Sujan Sarkar (Jadavpur University), Soham Ghosal (iiitnr), Dmitrii Kaplun (Saint Petersburg Electrotechnical University - LETI), Asya Lyanova (Saint Petersburg Electrotechnical University - LETI), Ram Sarkar (Jadavpur University)

1163: Predicting Metaplasia in upper gastrointestinal images from white light endoscopy*

Maria Jaramillo (Universidad Nacional de Colombia), Diego F Bravo (Universidad Nacional de Colombia), Jose M Quijano (Universidad Nacional de Colombia), Martín Gómez (Universidad Nacional de Colombia), Fabio A. Gonzalez (Universidad Nacional de Colombia), Eduardo Romero (Universidad Nacional de Colombia)

1303: Long-term Response Classification and Prediction of Atrial Fibrillation Ablation using Non-invasive 3D-rendered Electromechanical Cycle Length Mapping*

Melina Tourni (Columbia University), Seungyeon Julia Han (Columbia University), Mary Kucinski (Columbia University), Angelo Biviano (Columbia University Irving Medical Center), Elisa Konofagou (Columbia University)

296: Organ Proximity Analysis: A Novel Approach to Spleen Localization for Accurate Injury Grading in Abdominal CT Scans*

Mohammad Hamghalam (Queen's University), Robert Moreland (Department of Medical Imaging, St. Michael's Hospital, Unity Health Toronto), David Gomez (Division of General Surgery, St. Michael's Hospital, Unity Health Toronto), Hui-Ming Lin (Department of Medical Imaging, St. Michael's Hospital, Unity Health Toronto), Ali Babaei Jandaghi (Department of Medical Imaging, St. Michael's Hospital, Unity Health Toronto), Monica Tafur (Department of Medical Imaging, St. Michael's Hospital, Unity Health Toronto), Paraskevi Vlachou (Department of Medical Imaging, St. Michael's Hospital, Unity Health Toronto), Matthew Wu (Department of Medical Imaging, St. Michael's Hospital, Unity Health Toronto), Michael Brassil (Department of Medical Imaging, St. Michael's Hospital, Unity Health Toronto), Priscila Crivellaro (Department of Medical Imaging, St. Michael's Hospital, Unity Health Toronto), Shobhit Mathur (Department of Medical Imaging, St. Michael's Hospital, Unity Health Toronto), Shahob Hosseinpour (Department of Medical Imaging, St. Michael's Hospital, Unity Health Toronto), Errol Colak (Unity Health Toronto), Amber Simpson (Queen's University)

435: OPTIMIZING FAILURE MODE ANALYSIS OF DENTAL RESTORATIVE MATERIALS: BALANCING EFFICIENCY AND ACCURACY*

Bérangère Cournault (INSERN), Luc Vedrenne (ICube)

1099: INFLAMMATION DETECTION USING ENSEMBLE ENDOSCOPIC MULTIMODAL ASSESSMENT IN INFLAMMATORY BOWEL DISEASE*

Bisi Bode Kolawole (London South Bank University), Ujwala Chaudhari (London South Bank University), Irene Zammarchi (University College of Cork), Giovanni Santacroce (University College of Cork), Rocio del Amor (Universitat Politècnica de València), Pablo Meseguer (Universitat Politècnica de València), Andrea Buda (Santa Maria del Prato Hospital, Feltre), Raf Bisschops (University Hospitals Leuven), Valery Naranjo (Universitat Politècnica de València), Subrata Ghosh (University College of Cork), Marietta Iacucci (University College of Cork), Enrico Grisan (London South Bank University / University of Padova)

977: A Vision Transformer Approach for Breast Cancer Classification in Histopathology*

Margo Sabry (Assiut University), Hossam Magdy Balaha (University of Louisville), Khadiga M. Ali (Mansoura University), Tayseer Hassan A. Soliman (Assiut University), Dibson Gondim (University of Louisville), Mohammed Ghazal (Abu Dhabi University), Tania Tahtouh (Abu Dhabi University), Ayman S El-Baz (University of Louisville)

1558: On Imagined Visually Evoked Potentials for Brain Computer Interface Applications

Simone Priori (Politecnico di Torino), Adrien Merlini (IMT Atlantique), Francesco Andriulli (Politecnico di Torino)

786: Multi-Scale Recursive Feature Interaction for Auditory Attention Detection using EEG Signals*

Jia Li (South China University of Technology), Ran Zhang (South China University of Technology), Siqi Cai (National University of Singapore)

1225: An fNIRS study on standing concurrent with working memory task and sensory manipulation*

Yasaman Baradaran (University of Canberra), Raul Fernandez Rojas (University of Canberra), Maryam Sousani (University of Canberra), Roland Goecke (University of Canberra), Maryam Ghahramani (University of Canberra)

588: Motor and Cognitive Workload During Dual-Task Timed up and Go in Younger Adults: An fNIRS Study*

Maryam Sousani (University of Canberra), Raul Fernandez Rojas (University of Canberra), Elisabeth Preston (University of Canberra), Yasaman Baradaran (University of Canberra), Maryam Ghahramani (University of Canberra)

932: MULTI-COLOUR SPACE CHANNEL SELECTION FOR IMPROVED CHRONIC WOUND SEGMENTATION*

Christian McBride (Manchester Metropolitan University), Bill Cassidy (Manchester Metropolitan University), Connah Kendrick (Manchester Metropolitan University), Neil Reeves (Manchester Metropolitan University), Pappachan Joseph (Lancashire Teaching Hospitals), Moi Hoon Yap (Manchester Metropolitan University)

637: COVID-19 COMPUTER-AIDED DIAGNOSIS THROUGH AI-ASSISTED CT IMAGING ANALYSIS: DEPLOYING A MEDICAL AI SYSTEM*

Anastasis Arsenos (NTUA), Demetris Gerogiannis (University of Ioannina), Dimitrios Koliias (Queen Mary University London), Dimitris Nikitopoulos (GRNET), Stefanos Koliias (NTUA)

935: LSTM-based Heart Rate Estimation from Facial Video Images*

Marc-André Fiedler (Otto-von-Guericke-University Magdeburg), Laslo Dinges (University of Magdeburg), Michal Rapczynski (Otto-von-Guericke-University Magdeburg), Ayoub Al-Hamadi (University of Magdeburg)

551: GLFF: A Global-Local Feature Fusion Model to Segment Epileptic Focus of Focal Cortical Dysplasia from Multi-Channel MR Images*

Xiaodong Zhang (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Changmiao Wang (Shenzhen Research Institute of Big Data), Fengjun Zhu (Shenzhen Children's Hospital), Tong Mo (Shenzhen Children's Hospital), Yang Sun (Shenzhen Children's Hospital), Lin Li (Shenzhen Children's Hospital), Qingmao Hu (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Jingping Xu (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Dezhi Cao (Shenzhen Children's Hospital)

710: MULTIMODAL LOCAL REPRESENTATION LEARNING FOR MULTI-TASK BLASTOCYST ASSESSMENT*

Jun Zhang (ShanghaiTech University), Bozhong Zheng (ShanghaiTech University), Ni Na (ShanghaiTech University), Guoqing Tong (The First Affiliated Hospital of Xi'an Jiaotong University), Yingna Wu (ShanghaiTech University), Guangping Xie (ShanghaiTech University), Yang Rui (ShanghaiTech University)

751: AC-UNet: Adaptive Connection UNet for White Matter Tract Segmentation Through Neural Architecture Search*

Yanming Zhu (Griffith University), Ari Tchetchenian (UNSW), Xuefei Yin (Griffith University), Alan Liew (Griffith University), Yang Song (University of New South Wales), Erik Meijering (University of New South Wales)

161: Simultaneous Lung Cell and Nucleus Segmentation from Labelled versus Unlabelled Human Lung DIC Images*

Melanie Dohmen (Charité - Universitätsmedizin Berlin), Mirja Mittermaier (Charite - Universitaetsmedizin Berlin), Josef Lorenz Rumberger (Max Delbrück Center for Molecular Medicine), Li-Ling Yang (Charité - Universitätsmedizin Berlin), Achim D. Gruber (Freie Universität Berlin), Mario Toennies (HELIOS Klinikum Emil von Behring), Stefan Hippensiel (Charité - Universitätsmedizin Berlin), Dagmar Kainmueller (MDC), Andreas C Hocke (Charité)

930: Synthesizing Unpaired Images of Bacterial Biofilms with Auxiliary Diffusion Models*

Soumee Guha (University of Virginia), Lisa Berlizova (University of Virginia), Blair Stilley (University of Virginia), Scott Acton (University of Virginia)

460: Colorectal Polyps Detection in Virtual Colonoscopy using 3D Geometric Features and Deep Learning*

Mohamed A Yousuf (University of Louisville), Samir Farag Harb (University of Louisville), Islam M Alkabbany (University of Louisville), Asem Ali (University of Louisville), Salwa Elshazly (Kentucky Imaging Technologies), Aly Farag (University of Louisville)

962: Revealing Cortical Layers In Histological Brain Images With Self-Supervised Graph Convolutional Networks Applied To Cell-Graphs*

Valentina Vadòri (London South Bank University), Antonella Peruffo (University of Padova), Jeanmarie Graic (University of Padova), Giulia Vadòri (University of Padova), Livio Finos (University of Padova), Enrico Grisan (London South Bank University / University of Padova)

1512: Deep learning for automated insertion point annotation of CMR T1 maps

Ricardo A Gonzales (University of Oxford), Ana L Manrique (University of Oxford), Matthew K Burrage (University of Oxford), Katharine E Thomas (University of Oxford), İbrahim Altun (University of Oxford), Wei-Ming Huang (Mackay Memorial Hospital), Chun-Ho Yun (Mackay Memorial Hospital), Qiang Zhang (University of Oxford), Vanessa Ferreira (University of Oxford), Stefan Piechnik (University of Oxford)

1189: BRAINCHOP: ADVANCING THE FRONTIER OF WEB-BASED NEUROIMAGING*

Mohamed Masoud (Georgia State University), Pratyush Reddy (Georgia State University), Farfalla Hu (Georgia State University), Sergey Plis (Georgia State University)

402: MUTUALLY-CONSTRAINED CROSS-SECTIONAL AND LONGITUDINAL NON-NEGATIVE MATRIX FACTORIZATION: APPLICATION TO MODELING BRAIN AGING TRAJECTORIES*

Ioanna Skampardoní (University of Pennsylvania), Junhao Wen (University of Southern California), Guray Erus (University of Pennsylvania), Haochang Shou (University of Pennsylvania), Konstantina S. Nikita (National Technical University of Athens), Christos Davatzikos (University of Pennsylvania)

890: EVALUATION OF X-RAY DETECTOR SCHEMES IN SMALL ANIMAL CONE BEAM TOMOGRAPHY*

Evangelia K Karali (University of West Attica), Ioannis Valais (University of West Attica), Christos Michail (University of West Attica), George Fountos (University of West Attica), Nektarios Kalyvas (University of West Attica)

723: Blood Harmonisation of Endoscopic Transsphenoidal Surgical Video Frames on Phantom Models*

Mahrukh Saeed (King's College London), Julien Mathieu Quarez (King's College London), Hassna Irzan (UCL), Bava Kesavan (King's College London), Matthew Elliot (King's College London), Oscar MacCormac (King's College London), James Knight (King's College London), Jonathan Shapey (King's College London), Sébastien Ourselin (King's College London), Alejandro Granados (King's College London)

1228: Centerline detection and pericoronary adipose tissue prediction using image-to-image regression in coronary CTA images*

Ananya Subramaniam (Case Western Reserve University), Justin Kim (Case Western Reserve University), Juhwan Lee (Case Western Reserve University), Yingnan Song (Case Western Reserve University), Hao Wu (Case Western Reserve University), Naomi Joseph (Case Western Reserve University), Mohamed Makhlof (Case Western Reserve University), Neda Hassani (Case Western Reserve University), David L Wilson (Case Western Reserve University)

191: Semi-supervised Medical Image Segmentation Method Based on Cross-pseudo Labeling Leveraging Strong and Weak Data Augmentation Strategies*

Yifei Chen (Hangzhou Dianzi University), Chenyan Zhang (Hangzhou Dianzi University), Yifan Ke (Hangzhou Dianzi University), Yiyu Huang (Hangzhou Dianzi University), Xuezhou Dai (Hangzhou Dianzi University), Feiwei Qin (Hangzhou Dianzi University), Yongquan Zhang (Zhejiang University of Finance and Economics), Xiaodong Zhang (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Changmiao Wang (Shenzhen Research Institute of Big Data)

1453: SENDA: SYSTEM FOR ENDOSCOPIC ASSESSMENT OF DYNAMIC AIRWAY COLLAPSE

Carles Sanchez (Computer Vision Center), Marta Diez-Ferrer (Department of Respiratory Medicine, Hospital Universitari de Bellvitge), Debora Gil (Computer Vision Center)

1510: EEG AND BALANCE ASSESSMENT FOLLOWING NEUROMUSCULAR TAPING IN OLDER ADULTS AT RISK FOR FALLS

Matilde Paramento (Università degli Studi di Padova), Andrea Rachele Aparo (Università degli Studi di Padova), Michela Agostini (Università degli Studi di Padova), Emanuela Formaggio (Università degli Studi di Padova), Paola Contessa (Università degli Studi di Padova), Chiara Ceolin (Università degli Studi di Padova), Giuseppe Sergi (Università degli Studi di Padova), Stefano Masiero (Università degli Studi di Padova), Maria Rubega (Università degli Studi di Padova)

1458: AI for Morphological Profiling of Therapeutic Antibody Combinations Using Cell Painting

Sanne G.M. van Velzen (Genmab), Wesley Rademaker (Genmab), Kylie Fogarty (Genmab), Tim Hoek (Genmab), Frank Beurskens (Genmab), Vitalijs Ovcinnikovs (Genmab), Alex Terry (Genmab), Eoghan O'Duibhir (Genmab), Chris Klijn (Genmab), Sietske Bakker (Genmab), Lionel Blanchet (Genmab)

1428: AN ANTENNA BIOINSPIRED BY THE EXTERNAL HUMAN EAR

Antigoni Aikaterini G. Kyriakou (Democritus University of Thrace), Anastasios Koutinos (Florida International University, FIU), Michael Chryssomallis (Democritus University of Thrace)

1459: LABEL-FREE VIRUS DETECTION OF SPIKED CLINICAL SAMPLES USING RAMAN SPECTROSCOPY WITH ADJUSTABLE METRIC TARGETING

RyeAnne K Ricker (National Institutes of Health), Nestor Perea (Pennsylvania State University), Maria Monaco (National Institutes of Health), Yin-Ting Yeh (National Institutes of Health), Anita Fletcher (National Institutes of Health), Irene Cortese (National Institutes of Health), Murray H Loew (George Washington University), Elodie Ghedin (National Institutes of Health)

26: Deep CNNs for Diabetic Retinopathy Classification: A Transfer Learning Perspective*

Ruthran Baskar (Dublin City University), Emmanuel Sabu (Dublin City University), Claudia Mazo (Dublin City University)

696: TriCC: Self-Supervised Contrastive Learning for Image-Based Antiparasitic Drug Discovery*

Lyuyang Wang (McMaster University), Sommer Chou (McMaster University), Gerry Wright (McMaster University), Lesley T MacNeil (McMaster University), Mehdi Moradi (McMaster University)

1239: Non-Invasive Stress Monitoring from Video*

Akshata P Tiwari (MIT), Brian Matejek (SRI International), Daniel Haehn (University of Massachusetts Boston)

477: Phased Array With Non-Ideal Double Phase Shifters For Multi-Target Vital Sign Monitoring*

Zhaoyi Xu (Rutgers, the State University of New Jersey), Donglin Gao (Rutgers University), Shuping Li (Rutgers University), Chung-Tse Michael Wu (Rutgers University), Athina Petropulu (Rutgers)

880: Multiscale Neuroimaging Features for the Identification of Medication Class and Non-Responders in Mood Disorder Treatment*

Bradley T Baker (Tri-Institutional Center for Translational Research in Neuroimaging and Data Science (TReNDS)), Mustafa Salman (Tri-Institutional Center for Translational Research in Neuroimaging and Data Science (TReNDS)), Zening Fu (Georgia State University), Armin Iraji (Georgia State University), Elizabeth Osuch (Lawson Health Research Institute), Vince Calhoun (TReNDS), Henry Bockholt (TReNDS)

391: ADHD Classification Method Based on Spatio-Temporal Multifractal Features Using Attention-based Pyramid Feature Mixer modules*

Mengyunqiu Zhang (Waseda University), Sei-ichiro Kamata (Waseda University), Pengfeng Lu (Waseda University)

86: ColonCLIP: An Adaptable Prompt-Driven Multimodal Strategy for Colonoscopy Image Diagnosis*

Shuangyi Tan (The Chinese University of Hong Kong, Shenzhen), Yinqi Cai (Sun Yat-sen University), Xutao Lin (The Sixth Affiliated Hospital of Sun Yat-sen University), Wei Qi (The Second Hospital of Hebei Medical University), Zhen Li (The Chinese University of Hong Kong, Shenzhen), Xiang Wan (Shenzhen Research Institute of Big Data, the Chinese University of Hong Kong (Shenzhen)), Guanbin Li (Sun Yat-sen University)

87: Enrichment, Borrowing, and Mining: A Data-Driven Approach to Colonoscopic Lesion Classification*

Shuangyi Tan (The Chinese University of Hong Kong, Shenzhen), Yuhao Du (The Chinese University of Hong Kong, Shenzhen), Zhenhua Wu (Sun Yat-sen University), De-Jun Fan (Sun Yat-sen University), Xutao Lin (The Sixth Affiliated Hospital of Sun Yat-sen University), Zhen Li (The Chinese University of Hong Kong, Shenzhen), Xiang Wan (Shenzhen Research Institute of Big Data, the Chinese University of Hong Kong (Shenzhen)), Guanbin Li (Sun Yat-sen University)

295: SHMC-NET: A MASK-GUIDED FEATURE FUSION NETWORK FOR SPERM HEAD MORPHOLOGY CLASSIFICATION*

Nishchal Sapkota (University of Notre Dame), Yejia Zhang (University of Notre Dame), Sirui Li (Southern University of Science and Technology), Peixian Liang (University of Notre Dame), Zhuo Zhao (University of Notre Dame), Jingjing Zhang (First Affiliated Hospital of Anhui Medical University), Zha Xiaomin (Affiliated Hospital of Anhui Medical University), Zhou Yiru (First Affiliated Hospital of Anhui Medical University), Yunxia Cao (Anhui Medical University), Danny Z Chen (University of Notre Dame)

805: Decoding Decision Reasoning: A Counterfactual-Powered Model for Knowledge Discovery*

Yingying Fang (Imperial College London), Zihao Jin (Imperial College London), Xiaodan Xing (Imperial College London), Walsh Simon (Imperial College London), Guang Yang (Imperial College London)

1204: LATE-LIFE DEPRESSION AUTOMATED DETECTION, BY MEANS OF ADVANCED DIFFUSION TENSOR IMAGING SEGMENTATION AND ARTIFICIAL INTELLIGENCE*

Kostas Siarkos (National and Kapodistrian University of Athens), Christos Katsis (Department of Informatics and Telecommunications, University of Ioannina, Kostakioi), Georgios Antonopoulos (Institute of Systems Neuroscience, Heinrich Heine University Düsseldorf), Efstratios Karavassilis (Medical School, Democritus University of Thrace), Georgios Velonakis (Second Department of Radiology, Attikon General University Hospital, School of Medicine, National and Kapodistrian University of Athens), Charalabos Papageorgiou (First Department of Psychiatry, School of Medicine, Eginition Hospital, National and Kapodistrian University of Athens), Nikolaos Smyrnis (Second Department of Psychiatry, Attikon General University Hospital, School of Medicine, National and Kapodistrian University of Athens), Nikolaos Kelekis (Second Department of Radiology, Attikon General University Hospital, School of Medicine, National and Kapodistrian University of Athens), Euripidis Glavas (Department of Informatics and Telecommunications, University of Ioannina, Kostakioi), Antonios Politis (Division of Geriatric Psychiatry, First Department of Psychiatry, National and Kapodistrian University of Athens)

824: A Cross-modal Feature Fusion Method to Diagnose Macular Fibrosis in Neovascular Age-related Macular Degeneration*

Xin Lei (Institute of Computing Technology, Chinese Academy of Sciences), Zhongping Chen (Aier School of Ophthalmology, Central South University), Hong Liu (Institute of Computing Technology, Chinese Academy of Sciences), Juan Chen (Changsha Aier Eye Hospital), Huanhuan Tan (Changsha Aier hospital), Weiwei Dai (Changsha Aier Eye Hospital), Xiangdong Wang (Institute of Computing Technology, Chinese Academy of Sciences), Heping Xu (Aier Institute of Optometry and Vision Science)

961: HYBRID CNN-VIT MODELS FOR MEDICAL IMAGE CLASSIFICATION*

Dimitrios Pantelaios (National Technical University of Athens), Paraskevi-Antonia Theofilou (National Technical University of Athens), Paraskevi Tzouveli (National Technical University of Athens), Stefanos Kollias (NTUA)

310: LAGNet: Label Attention Graph Networks for Ocular Disease Classification using Fundus Images*

Huanwen Liang (Shenzhen Technology University), Leya Li (Shenzhen Technology University), Yu Lu (Shenzhen Technology University), Qianying Liu (University of Glasgow), Huilin Ge (Jiangsu University of Science and Technology), Xianghua Fu (Shenzhen Technology University)

860: Classifying melanocytic nevus by using extracted depth-encoded channel information*

Yaoqi Tang (Shanghai Jiao Tong University), Qilin Sun (Ninth People's Hospital Affiliated to Shanghai Jiao Tong University School of Medicine), Siqi Wang (Shanghai Jiao Tong University), Bo Jiang (Shanghai Jiao Tong University), Yuye Ling (Shanghai Jiao Tong University)

1513: Trade-off of Accuracy and Explainability in Optical Coherence Tomography for Retinal Disease Classification

Marzieh Oghbaie (Medical University of Vienna), Teresa Araújo (Medical University of Vienna), Ursula Schmidt-Erfurth (Medical University of Vienna), Hrvoje Bogunovic (Medical University of Vienna)

263: LABEL-GUIDED CORESET GENERATION FOR COMPUTATIONALLY EFFICIENT CHEST X-RAY DIAGNOSIS*

Jayant Mahawar (Indian Institute of Technology Jodhpur), Bhargab Chattopadhyay (Indian Institute of Technology Jodhpur), Angshuman Paul (Indian Institute of Technology Jodhpur)

342: Spinal Osteophyte Detection via Robust Patch Extraction on Minimally Annotated X-rays*

Soumya Snigdha Kundu (King's College London), Yuanhan Mo (University of Oxford), Nicharee Srikiwaswatt (University of Oxford), Bartlomiej W Papiez (University of Oxford)

472: Saliency-guided and Patch-based Mixup for Long-tailed Skin Cancer Image Classification*

Tianyunxi Wei (Southern University of Science and Technology), Yijin Huang (University of British Columbia), Li Lin (Southern University of Science and Technology, The University of Hong Kong), Pujin Cheng (Southern University of Science and Technology), Sirui Li (Southern University of Science and Technology), Xiaoying Tang (Southern University of Science and Technology)

Poster Session 1: Tuesday, May 28

Topics: Advanced Analysis Methods (Blind source separation & Dictionary learning, Connectivity analysis, Compressive sensing & sampling, Computational and statistical image processing and analysis, Motion compensation and analysis)

10:00 - 11:30

Banqueting Hall Foyer

Chair: Maria Athanasiou (National Technical University of Athens), Lorenza Brusini (University of Verona)

*Note: * Denotes 4-Page Paper Submission*

447: Wavelet-based sparse non-negative matrix factorization for bioluminescent imaging unmixing*

Erwan Dereure (Institut Pasteur), Christophe Kervazo (Télécom Paris), Johanne Seguin (Université Paris Cité), Anikitos Garofalakis (Biospace Lab), Nathalie Mignet (Université Paris Cité), Elsa Angelini (Télécom Paris), Jean-Christophe Olivo-Marin (Institut Pasteur Olivo-Marin)

1227: Mammographic Breast Density Classification by Integration of Deep Dictionaries and Multi-model Sparse Approximations*

Chelsea Harris (Delaware State University), Uchenna Okorie (Delaware State University), Sokratis Makrogiannis (Delaware State University)

1532: Journal Paper: A Benchmark for Brain Network Analysis with Graph Neural Networks

Hejie Cui (Emory University), Wei Dai (Stanford University), Yanqiao ZHU (University of California, Los Angeles), Xuan Kan (Emory University), Antonio Aodong Chen Gu (Georgia Institute of Technology), Joshua D Lukemire (Emory University), Liang Zhan (University of Pittsburgh), Lifang He (Lehigh University), Ying Guo (Emory University), Carl Yang (Emory University)

1452: Extracting Brain Networks from Nonlinear fMRI Connectivity During Infancy

Spencer E Kinsey (Tri-Institutional Center for Translational Research in Neuroimaging and Data Science (TReNDS)), Masoud Seraji (Tri-Institutional Center for Translational Research in Neuroimaging and Data Science (TReNDS)), Sarah Schultz (Division of Autism and Related Disabilities, Department of Pediatrics, Emory University School of Medicine), Vince Calhoun (TReNDS), Armin Iraji (Georgia State University)

1432: Convergent Brain Connectome Analysis with Brain Graph Transformers

Keqi Han (Emory University), Xuan Kan (Emory University), Carl Yang (Emory University)

785: Capturing stretching and shrinking of inter-network temporal coupling in fMRI via warp elasticity*

Sir-Lord Wiafe (TReNDS), Ashkan Faghiri (TReNDS), Zening Fu (Georgia State University), Robyn Miller (TReNDS), Vince Calhoun (TReNDS)

417: MULTIVARIATE VARIATIONAL MODE DECOMPOSITION IMPROVES DYNAMIC CAUSAL MODELING FOR FMRI DATA*

Charalampos Lamprou (Khalifa University for Science and Technology), Aamna M Al-Shehhi (Khalifa University for Science and Technology), Leontios Hadjileontiadis (Khalifa University of Science and Technology), Mohamed Seghier (Khalifa University of Science and Technology)

1306: Noise-Assisted Multivariate Variational Mode Decomposition on fMRI Data for Phase Synchronization Analysis*

Charalampos Lamprou (Khalifa University for Science and Technology), Leontios Hadjileontiadis (Khalifa University of Science and Technology), Mohamed Seghier (Khalifa University for Science and Technology)

1089: Temporal fluctuations of brain structure-function coupling as a potential marker of drowsiness during resting state*

Maria Giulia Preti (EPFL), Dimitri Van De Ville (Ecole polytechnique fédérale de Lausanne (EPFL) and University of Geneva)

569: Graph Filtering for Hub Node Identification in Brain Networks*

Duc Vu (Michigan State University), Meiby Ortiz-Bouza (Michigan State University), Selin Aviyente (Michigan State University)

502: MACROSCALE BRAIN STRUCTURAL NETWORK COUPLING IS RELATED TO AD PROGRESSION*

Yibao Sun (Beijing University of Posts and Telecommunications), Kun Zhao (School of Artificial Intelligence, Beijing University of Posts and Telecommunications), Pindong Chen (Institute of Automation, Chinese Academy of Sciences), Yong Liu (BUPT)

188: Hodge-Decomposition of Brain Networks*

D Vijay Anand (University College London), Moo Chung (University of Wisconsin at Madison)

827: JUMP: A joint multimodal registration pipeline for neuroimaging with minimal preprocessing*

Adrià Casamitjana (Universitat de Girona), Juan Eugenio Iglesias (UCL), Adria Niñerola (Universitat de Barcelona), Raúl Tudela (Universitat de Barcelona), Roser Sala-Llonch (Universitat de Barcelona)

660: WAVELIA #2: THE MICROWAVE BREAST SURFACE ESTIMATION MODULE*

Giannis Papatrechas (Wavelia Healthcare, MVG Industries), Angie Fasoula (Wavelia Healthcare, MVG Industries), Luc Duchesne (Wavelia Healthcare, MVG Industries)

1266: Enlarged Perivascular Spaces in Frontal and Temporal Cortical Regions Characterize Seizure Outcome after Traumatic Brain Injury*

Celina M Alba (USC), Giuseppe Barisano (Stanford University), Alexis Bennett (USC), Akul Sharma (USC), Paul Vespa (UCLA), Dominique Duncan (USC)

1263: ENHANCING ULTRASOUND IMAGING WITH SYNTHETIC APERTURE DATA: A DEEP LEARNING APPROACH FOR SUPERIOR RESOLUTION AND CONTRAST*

Yu Mao (Tsinghua University), Wenkai Lu (Tsinghua University), Yuxuan Li (Tsinghua University), Yonghao Wang (Tsinghua University)

1073: Analyzing Regional Organization of the Human Hippocampus in 3D-PLI Using Contrastive Learning and Geometric Unfolding*

Alexander Oberstrass (Institute of Neuroscience and Medicine (INM-1), Forschungszentrum Jülich GmbH), Jordan DeKraker (Western University), Nicola Palomero-Gallagher (Institute of Neuroscience and Medicine (INM-1), Forschungszentrum Jülich GmbH), Sascha E. A. Muenzing (Institute of Neuroscience and Medicine (INM-1), Forschungszentrum Jülich GmbH), Alan Evans (McGill University), Markus Axer (Institute of Neuroscience and Medicine (INM-1)), Katrin Amunts (Forschungszentrum Jülich), Timo Dickscheid (Forschungszentrum Jülich)

855: Diffusion model-based posterior distribution prediction for kinetic parameter estimation in dynamic PET*

Yanis Djebra (HMS/MGH), Xiaofeng Liu (Yale University), Thibault Marin (Yale University), Amal Tiss (Harvard Medical School and MGH), Maeva Dhaynaut (Harvard Medical School and MGH), Nicolas Guehl (Harvard Medical School and MGH), Keith Johnson (Harvard Medical School and MGH), Georges El Fakhri (Yale School of Medicine), Chao Ma (Massachusetts General Hospital), Jinsong Ouyang (Yale University)

1201: Self-supervised Learning Of Dense Hierarchical Representations For Medical Image Segmentation*

Eytan Kats (University of Luebeck), Jochen Hirsch (Fraunhofer Institute for Digital Medicine MEVIS), Mattias Paul Heinrich (Universitaet zu Luebeck)

768: AUTOMATIC SEGMENTATION OF THE LEFT VENTRICULAR MYOCARDIUM IN CARDIAC CT SCANS USING AI*

Alexios Antonopoulos (National and Kapodistrian University of Athens), Theodoros Tsampras (National and Kapodistrian University of Athens), Georgios Kalykakis (National and Kapodistrian University of Athens), Theodora Karamanidou (Center for Digital Innovation-Pfizer), Thanos Stavropoulos (Center for Digital Innovation-Pfizer), Charalambos Vlachopoulos (National and Kapodistrian University of Athens)

1339: Morph-Transformer: a Deep Spatio-Temporal Framework for Shape Analysis in Longitudinal Neuroimaging*

Yuji Zhao (Illinois Institute of Technology), Boris Gutman (Illinois Institute of Technology)

450: Multi-modal PET/CT fusion for automated PD-L1 status prediction in lung cancer*

Ronrick Da-Ano (UBO, LATIM UMR-1101), Olena Tankyevych (Nuclear Medicine, University Hospital of Poitiers), Gustavo Xavier Andrade-Miranda (UBO), Pierre-Henri Conze (IMT Atlantique), catherine cheze-le-rest (Nuclear Medicine, University Hospital of Poitiers), Dimitris Visvikis (LaTIM, Inserm)

1544: An Organoid Model suited for Geometric Deep Learning

Alexandre Martin (INRIA)

1344: Learning to Estimate Critical Gait Parameters from Single-View RGB Videos with Transformer-Based Attention Network*

Hieu H. Pham (VinUniversity), Thanh Quoc Hung Le (VinUniversity)

578: Implicit Regression in Subspace for High-Sensitivity CEST Imaging*

Chu Chen (City University of Hong Kong), Yang Liu (City University of Hong Kong), Se Weon Park (City University of Hong Kong), Jizhou Li (City University of Hong Kong), Kannie Chan (City University of Hong Kong), Raymond H Chan (City University of Hong Kong)

1173: Estimating polyp size from a single colonoscopy image using a shape-from-shading model*

Josue Ruano (Universidad Nacional de Colombia), Diego F Bravo (Universidad Nacional de Colombia), Diana L Giraldo (University of Antwerp), Martin Gómez (Universidad Nacional de Colombia), Fabio A. Gonzalez (Universidad Nacional de Colombia), Antoine Manzanera (ENSTA Paris), Eduardo Romero (Universidad Nacional de Colombia)

1466: TRACTOMETRY-BASED HARMONIZATION OF SCANNER AND PROTOCOL EFFECTS FOR MULTI-SITE WHITE MATTER TRACT ANALYSIS

Bramsh Q Chandio (University of Southern California), Julio Villalon-Reina (Imaging Genetics Center), Talia Nir (Imaging Genetics Center), Sophia Thomopoulos (Imaging Genetics Center, University of Southern California), Yixue Feng (University of Southern California), Sebastian Benavidez (University of Southern California), Neda Jahanshad (University of Southern California), Jaroslaw Harezlak (Indiana University Bloomington), Eleftherios Garyfallidis (Indiana University), Paul Thompson (Imaging Genetics Center)

580: Analyzing Trial-to-Trial Variability in the Mouse Visual Pathway using Functional Ultrasound*

Aybuke Erol (Delft University of Technology), Pieter Kruizinga (Erasmus Medical Center), Borbala Hunyadi (TUDelft)

230: Joint Thresholding: An adaptive thresholding approach considering the consistency of high-dimensional fluorescence imaging data*

Mengfan Wang (Virginia Tech), Guoqiang Yu (Virginia Tech)

494: DIFFERENCE IN UPTAKE PATTERN HETEROGENEITY AND REPRODUCIBILITY OF RADIOMICS FEATURES BETWEEN FAPI AND FDG PET/CT IMAGING OF TUMORS*

Tianmeng Xu (Yunnan University), Yanchao Huang (Southern Medical University), Tingting Ang (Yunnan University), Shuilin Chu (Yunnan University), Peiyin Luo (Yunnan University), Shunfang Wang (School of Information Science and Engineering, Yunnan University), Yufeng Zhang (Yunnan University), Lijun Lu (Southern Medical University), Ganghua Tang (Southern Medical University), Wenbing Lv (Yunnan University)

952: A Comprehensive Dataset and Automated Pipeline for Nailfold Capillary Analysis*

Linxia Zhao (Tsinghua University), Jiankai Tang (Tsinghua University), Dongyu Chen (Tsinghua University), Xiaohong Liu (UCL), Yong Zhou (Clinical Research Institute, Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine), Yuanchun Shi (Tsinghua University), Guangyu Wang (Beijing University of Posts and Telecommunications), Yuntao Wang (Tsinghua University)

1467: Breast Ultrasound Tumor Characterization using 4D Entropy

Sarita S Deshpande (University of Chicago), Christopher Straus (University of Chicago), Wim Van Drongelen (University of Chicago)

52: SegReg: Segmenting OARs by Registering MR Images and CT Annotations*

Zeyu Zhang (The Australian National University), Xuyin Qi (The University of Adelaide), Bowen bz Zhang (University of Adelaide), biao wu (University of Adelaide), Hien Le (Sense-AI), Bora Jeong (University of Adelaide), Zhibin Liao (University of Adelaide), Yunxiang Liu (The University of Adelaide), Johan Verjans (SAHMRI), Minh-Son To (Flinders University), Richard Hartley (Australian National University)

Poster Session 1: Tuesday, May 28

Topics: Computer-aided diagnosis and Medical robotics

10:00 - 11:30

Banqueting Hall Foyer

Chair: Maria Athanasiou (National Technical University of Athens), Lorenza Brusini (University of Verona)

Note: * Denotes 4-Page Paper Submission

1575: An Augmented Reality Multiplexed Pathology Image Viewer With Similar-Patient Discovery

Jai Prakash Veerla (University of Texas at Arlington), Partha Sai Guttikonda (UTA), Amir Hajighasemi (University of Texas Arlington), Jillur Rahman Saurav (The University of Texas at Arlington), Aarti Darji (UTA), Cody Reynolds (UTA), Mohamed Mohamed (UTA), Mohammad Sadegh Nasr (University of Texas at Arlington), Helen Shang (UTA), Jacob M Luber (The University of Texas at Arlington)

600: OPENNDD: OPEN SET RECOGNITION FOR NEURODEVELOPMENTAL DISORDERS DETECTION*

Jiaming Yu (Fujian Agriculture and Forestry University), Zihao Guan (Fujian Agriculture and Forestry University), Xinyue Chang (Fujian Agriculture and Forestry University), Shujie Liu (Fujian Agriculture and Forestry University), Zhenshan Shi (the First Affiliated Hospital of Fujian Medical University), Xiumei Liu (Fujian Children's Hospital), Changcai Yang (Fujian Agriculture and Forestry University), Riqing Chen (Fujian Agriculture and Forestry University), Lanyan Xue (Fujian Agriculture and Forestry University), Lifang Wei (Fujian Agriculture and Forestry University)

182: HISTOPATHOLOGY IMAGE CLASSIFICATION USING SUPERVISED CONTRASTIVE DEEP LEARNING*

Md Mamunur Rahaman (UNSW, Sydney), Erik Meijering (University of New South Wales), Ewan Millar (NSW Health Pathology St George Hospital)

946: AI-Assisted Diagnosis for Covid-19 CXR Screening: From Data Collection to Clinical Validation*

Carlo Alberto Barbano (University of Turin, Télécom Paris), Riccardo Renzulli (University of Turin), Marco Grosso (ASL Torino 3), Domenico Basile (ASL Torino 3), Marco Busso (ASL Torino 3), Marco Grangetto (University of Torino)

836: BAT: Behavior-Aware Temporal Contrastive Endoscopic Video Representation Learning*

Weihao Weng (University of Aizu), Xin Zhu (University of Aizu), Mitsuyoshi Imaizum (Fukushima Medical University), Shigeyuki Murono (Fukushima Medical University), Satoshi Kubota (Fukushima Medical University)

1262: Diagnosis Of Takotsubo Syndrome By Robust Feature Selection From The Complex Latent Space Of DL-based Segmentation Network*

Fahim Ahmed Zaman (University of Iowa), Wahidul Alam (University of Iowa), Tarun Kanti Roy (University of Iowa), Amanda Chang (University of Iowa), Kan Liu (University of Iowa), Xiaodong Wu (University of Iowa)

452: Location-based Radiology Report-Guided Semi-supervised Learning for Prostate Cancer Detection*

Alex H Chen (National Cancer Institute), Nathan Lay (NIH), Stephanie Anne Harmon (National Cancer Institute), Kutsev B Ozyoruk (NIH), Enis Yilmaz (National Cancer Institute), Bradford J Wood (National Institutes of Health), Peter Pinto (National Cancer Institute), Peter Choyke (National Institutes of Health), Baris Turkbey (National Cancer Institute)

1496: Face3DBiomark: A low-cost solution to compute 3D facial biomarkers for diagnosing conditions with associated facial dysmorphologies

Álvaro Heredia-Lidón (La Salle - Universitat Ramon Llull), Alejandro Moñux Bernal (LaSalle Barcelona Universitat Ramon Llull), Luis M Echeverry Quiceno (Universitat de Barcelona), Neus Martínez Abadias (Universitat de Barcelona), Xavier Sevillano (La Salle - Universitat Ramon Llull)

1264: Cell-level GNN-based prediction of Tumor Regression Grade in colorectal liver metastases from histopathology images*

Mohamed El Amine Elfouaici (Polytechnique Montréal), Feryel Azzi (Université de Montréal), Dominique Trudel (Université de Montréal), Bich Nguyen (Université de Montréal), Emmanuel Montagnon (Centre de recherche du CHUM), An Tang (Université de Montréal), Simon Turcotte (Université de Montréal), Samuel Kadoury (Polytechnique Montréal)

938: AUTOMATED SMALL KIDNEY CANCER DETECTION IN NON-CONTRAST COMPUTED TOMOGRAPHY*

William Clenshaw McGough (University of Cambridge), Mireia Crispin-Ortuzar (University of Cambridge), Zeyu Gao (University of Cambridge), Thomas Buddenkotte (University Medical Center Hamburg-Eppendorf), Stephan Ursprung (University of Tuebingen), Grant Stewart (University of Cambridge)

700: Weakly-supervised end-to-end framework for pixel-wise description of micro-calcifications in full-resolution mammograms*

Paul Terrassin (Hera-MI), Mickael A Tardy (Hera-MI), Nathan Lauzeral (Hera-MI), Nicolas Normand (LS2N)

464: SIFT-DBT: Self-supervised Initialization and Fine-Tuning for Imbalanced Digital Breast Tomosynthesis Image Classification*

Yuxi Du (Yale University), Regina Hooley (Yale University), John Lewin (Yale University), Nicha Dvornek (Yale University)

495: "Small-data" Patch-wise Multi-dimensional Output Deep-learning for Rare Cancer Diagnosis in MRI under Limited Sample-size Situation*

Yuqiao Yang (Tokyo Institute of Technology), Ze Jin (Institute of Innovative Research (IIR), Tokyo Institute of Technology), Fumihiro Nakatani (National Cancer Center Hospital), Mototaka Miyake (National Cancer Center Hospital), Kenji Suzuki (Tokyo Institute of Technology)

148: DBA-PMC: A Mutually Enhancing Dual-branch Architecture for Pathologic Myopia And Myopic Maculopathy Classification*

Chucheng Chen (Tsinghua University Shenzhen International Graduate School), Zheng Gong (Tsinghua University Shenzhen International Graduate School), Zhuo Deng (Tsinghua University Shenzhen International Graduate School), Weihao Gao (Tsinghua Shenzhen International Graduate School), Fang Li (Tsinghua University Shenzhen International Graduate School), Lan Ma (Tsinghua University Shenzhen International Graduate School), Lei Shao (Beijing Tongren Hospital, Capital Medical University; Medical Artificial Intelligence Research and Verification Key Laboratory of the Ministry of Industry and Information Technology), Ruiheng Zhang (Beijing Tongren Hospital, Capital Medical University, Medical Artificial Intelligence Research and Verification Key Laboratory of the Ministry of Industry and Information Technology), Wen Bin Wei (Beijing Tongren Hospital, Capital Medical University; Medical Artificial Intelligence Research and Verification Key Laboratory of the Ministry of Industry and Information Technology)

871: Contrastive Learning: an efficient Domain Adaptation strategy for 2D Mammography Image Classification*

Gonzalo Iñaki Quintana (GE Healthcare), Vincent Jugnon (GE Healthcare), Laurence Vancamberg (GE Healthcare), Agnès Desolneux (CMLA ENS Paris Saclay), Mathilde Mougeot (CMLA ENS Paris Saclay)

646: Multi-Stage Transformer Fusion for Efficient Intracranial Hemorrhage Subtype Classification*

Yunze Wang (Xi'an Jiaotong - Liverpool University), Angelos Stefanidis (Xi'an Jiaotong - Liverpool University), Jingxin Liu (Xi'an Jiaotong-Liverpool University)

662: EFFECT OF POST-TRAINING PRUNING AND QUANTIZATION ON ENDOSCOPIC COMPUTER-AIDED DIAGNOSIS MODELS*

Willem Menu (Technical University of Eindhoven), Nikoo Dehghani (Eindhoven University of Technology), P. H. N. de With (Eindhoven University of Technology), Fons van der Sommen (Dept. Electrical Engineering, Eindhoven University of Technology)

269: Enhancing Nasopharyngeal Carcinoma Classification Based on Multi-View Cross-Modal Knowledge Distillation*

Zhengjie Zhang (Shanghai Jiao Tong University), Sijia Du (Shanghai Jiao Tong University), Crystal Cai (Shanghai Jiao Tong University), Dahong Qian (Shanghai Jiao Tong University), Suncheng Xiang (Shanghai Jiao Tong University)

929: Multi-Modality Transrectal Ultrasound Video Classification for Identification of Clinically Significant Prostate Cancer*

Hong Wu (Shenzhen University), Juan Fu (Sun Yat-sen University Cancer Center), Hongsheng Ye (The Department of Ultrasound, State Key Laboratory of Oncology in South China, Guangdong Provincial Clinical Research Center for Cancer, Sun Yat-sen University Cancer Center), Yuming Zhong (Shenzhen University), Xuebin Zou (Sun Yat-sen University Cancer Center), Jianhua Zhou (The Department of Ultrasound, State Key Laboratory of Oncology in South China, Guangdong Provincial Clinical Research Center for Cancer, Sun Yat-sen University Cancer Center), Yi Wang (Shenzhen University)

1193: TwoViewDensity-PVT: A Vision Transformer System for Accurate BI-RADS Classification in Breast Cancer Grading from Mammogram Images*

Ibrahim Abdelhalim (University of Louisville), Ayyad Abbas (University of Louisville), Yassir Almaliki (Najran University), Mohamed Elsharkawy (University of Louisville), Rasha Karam (Mansoura University), Sharifa Alduraibi (Qassim University), Mohammed Ghazal (Abu Dhabi University), Ali Mahmoud (University of Louisville), Sohail Contractor (University of Louisville), Ayman S El-Baz (University of Louisville)

1439: UNDERSTANDING THE MACHINE LEARNING CLASSIFICATION OF NEOPLASTIC INTRACEREBRAL HEMORRHAGE FROM NON-CONTRAST CT

Sophia Schulze-Weddig (Charité Berlin), Jawed Nawabi (Charité Berlin), Tobias Orth (Charité Berlin), Georg L Baumgärtner (Charite), Helge Kniep (University Medical Center Hamburg-Eppendorf), Uta Hanning (University Medical Center Hamburg-Eppendorf), Jens Fiehler (University Medical Center Hamburg-Eppendorf), Tobias Penzkofer (Charite)

1072: DUAL-VIEW CONNECTIVITY ANALYSIS VIA DYNAMIC GRAPH TRANSFORMER NETWORK FOR ASD DIAGNOSIS*

Zhao Guan (Fujian Agriculture and Forestry University), Jiaming Yu (Fujian Agriculture and Forestry University), Zhenshan Shi (the First Affiliated Hospital of Fujian Medical University), Xiumei Liu (Fujian Medical University), Changcai Yang (Fujian Agriculture and Forestry University), Riqing Chen (Fujian Agriculture and Forestry University), Lifang Wei (Fujian Agriculture and Forestry University)

1129: GRAY MATTER-GUIDED ATTENTION NETWORK FOR AD DIAGNOSIS USING STRUCTURAL MRI*

Yanteng Zhang, Hongshun Cai (Bodhibrain (Suzhou) Intelligent Technology Co Ltd), Yiming Du (National University of Singapore), Xu BingChao, Yang Liu (King's College London)

1578: RIB FRACTURE DETECTION USING DEEP LEARNING ON CHEST X-RAY IMAGES

Sarah Bargamian (University of Pennsylvania), George Asrian (University of Pennsylvania)

1314: CCMT: Cross Collaboration Multi-Task Network For Neonatal Hip Bone Intelligent Diagnosis*

Liangni Hu (Tsinghua), Yuxuan Li (Tsinghua University), Yonghao Wang (Tsinghua University), Xinjie Zeng (Guiyang Maternal and Child Health Hospital), Lei Yu (Guiyang Maternal and Child Health Hospital), Wenkai Lu (Tsinghua University)

712: Automated Measurement of Pericoronary Adipose Tissue Attenuation and Volume in CT Angiography*

Andrew Nguyen (NIH), Tejas Sudharshan Mathai (National Institutes of Health (NIH)), Liangchen Liu (National Institutes of Health), Jianfei Liu (National Institutes of Health Clinical Center), Ronald Summers (NIH)

604: Automated Surgical Urethral Length Estimation for Robot-Assisted Radical Prostatectomy*

Joris V. de Nijs (Eindhoven University of Technology), Tim J.M. Jaspers (Eindhoven University of Technology), Aron Bakker (University Medical Center Utrecht), Willem Brinkman (University Medical Center Utrecht), P. H. N. de With (Eindhoven University of Technology), Fons van der Sommen (Dept. Electrical Engineering, Eindhoven University of Technology)

1267: Anatomical Conditioning for Contrastive Unpaired Image-to-Image Translation of Optical Coherence Tomography Images*

Marc S Seibel (University of Lübeck), Hristina Uzunova (DFKI), Timo Kepp (German Research Center for Artificial Intelligence), Heinz Handels (University of Lübeck)

210: Optimized Hard Exudate Detection with Supervised Contrastive Learning*

Wei Tang (City University of Hong Kong), Kangning Cui (City University of Hong Kong), Raymond H Chan (City University of Hong Kong)

822: Automatic Detection and Quantification of Carotid Atherosclerotic Plaque Parameters from B-mode Ultrasound Images Using Deep Learning*

Nahid Babazadeh Khameneh (McGill University, Vascular Health Unit, Department of Medicine, Research Institute of McGill University Health Centre), Robert A. Brown (ShadowLab Research), Ioannis Psaromiligkos (McGill University), Stella S. Daskalopoulou (McGill University, Vascular Health Unit, Department of Medicine, Research Institute of McGill University Health Centre)

242: Triplet-constraint Transformer with Multi-scale Refinement for Dose Prediction in Radiotherapy*

Lu Wen (Sichuan University), Qihui Zhang (Sichuan University), Zhenghao Feng (Sichuan University), Yuanyuan Xu (Sichuan University), Xiao Chen (Sichuan University), Jiliu Zhou (Sichuan University), Yan Wang (Sichuan University)

618: ACCURATE SUBTYPING OF LUNG CANCERS BY MODELLING CLASS DEPENDENCIES*

George Batchkala (IBME/BDI, Department of Engineering Science, University of Oxford), Bin Li (University of Oxford), Mengran Fan (University of Oxford), Mark McCole (Department of Cellular Pathology, Oxford University Hospitals NHS Trust), Cecilia Brambilla (Department of Histopathology, Royal Brompton and Harefield Hospitals, Guy's and St Thomas' NHS Foundation Trust), Fergus V. Gleeson (University of Oxford), Jens Rittscher (University of Oxford)

683: Improving Normative Modeling for Multi-modal Neuroimaging Data using mixture-of-product-of-experts variational autoencoders*

Sayantan Kumar (Department of Computer Science and Engineering, Washington University in St. Louis), Philip R Payne (Washington University in St. Louis), Aristeidis Sotiras (Washington University in St. Louis)

845: Pediatric TSC-related epilepsy classification from clinical MR images using Quantum Neural Network*

Ling Lin (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Yihang Zhou (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Zhanqi Hu (Department of Neurology, Shenzhen Children's Hospital), Dian Jiang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Congcong Liu (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Shuo Zhou (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Yanjie Zhu (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Jianxiang Liao (Department of Neurology, Shenzhen Children's Hospital), Dong Liang (Chinese Academy of Sciences), Hairong Zheng (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Haifeng Wang (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences)

429: Informed Machine Learning for Cardiomegaly Detection in Chest X-Rays: A Comparative Study*

Felix Hasse (Karlsruhe Institute of Technology), Florian Leiser (Karlsruher Institut für Technologie), Ali Sunyaev (Karlsruhe Institute of Technology)

616: Multimodal Self-supervised Learning for Lesion Localization*

Hao Yang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Hong-Yu Zhou (Harvard University), Cheng Li (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Weijian Huang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Jiarun Liu (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Yong Liang (Peng Cheng Laboratory), Guangming Shi (Xidian University), Hairong Zheng (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Qiegen Liu (Nanchang University), Shanshan Wang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences)

1415: SWIN TRANSFORMER FOR BREAST CANCER DETECTION IN DIGITAL BREAST TOMOSYNTHESIS

Idan Kassis (Ben Gurion University of the Negev), Dror Lederman (Holon Institute of Technology), Gal Ben-Arie (Ben-Gurion University), Maya Rosenthal-Giladi (Soroka Medical Center), Ilan Shelef (Ben Gurion University of the Negev), Yaniv Zigel (Ben-Gurion University of the Negev)

553: Brain MRI Screening Tool with Federated Learning*

Roman Stoklasa (Centre for Biomedical Image Analysis, Faculty of Informatics, Masaryk University), Ioannis Stathopoulos (2nd Dept of Radiology, Medical School, National & Kapodistrian University of Athens), Efstratios Karavasilis (Medical Physics Laboratory, School of Medicine, Democritus University of Thrace), Efstrathios Efstrathopoulos (2nd Dept of Radiology, Medical School, National & Kapodistrian University of Athens), Marek Dostál (Dept of Radiology and Nuclear Medicine, Faculty of Medicine, Masaryk University and University Hospital Brno), Miloš Keřkovský (Dept of Radiology and Nuclear Medicine, Faculty of Medicine, Masaryk University and University Hospital Brno), Michal Kozubek (Masaryk University), Luigi Serio (Technology Department, CERN)

1441: BrainSTEAM: A Practical Pipeline for Connectome-based fMRI Analysis towards Subject Classification

Alexis Li (Hamilton High School), Yi Yang (Duke University), Hejje Cui (Emory University), Carl Yang (Emory University)

170: Segmentation of Tiny Intracranial Hemorrhage via Learning-to-Rank Local Feature Enhancement*

Shizhan Gong (The Chinese University of Hong Kong), Yuan Zhong (The Chinese University of Hong Kong), Yuqi Gong (The Chinese University of Hong Kong), Nga Yan Chan (The Chinese University of Hong Kong), Wenao Ma (The Chinese University of Hong Kong), Calvin Hoi-Kwan Mak (Queen Elizabeth Hospital), Jill Abrigo (The Chinese University of Hong Kong), Dou Qi (The Chinese University of Hong Kong)

684: CAAT-CLASS ATTENTION AUGMENTED TRANSFORMERS FOR QUANTIFICATION OF POST-OPERATIVE GLIOBLASTOMA WITH FOLLOW-UP*

Swagata Kundu (National Institute of Technology Durgapur), Dimitrios Toumpanakis (Uppsala University), Johan Wikström (Uppsala University), Robin Strand (Uppsala University), Ashis Kumar Dhara (National Institute of Technology Durgapur)

1042: A Novel Machine Learning-Based Classification Framework for Age-Related Macular Degeneration (AMD) Diagnosis from Fundus Images*

Aya A. Abd El-Khalek (Nile Higher Institute for Engineering and Technology), Hossam Magdy Balaha (University of Louisville), Ali Mahmoud (University of Louisville), Norah Saleh Alghamdi (Princess Nourah bint Abdulrahman University), Mohammed Ghazal (Abu Dhabi University), Abeer T. Khalil (Mansoura University), Mohy Eldin A. Abo-Elsoud (Mansoura University), Ayman S El-Baz (University of Louisville)

1537: Automated Diagnosis of Cholangiocarcinoma Using Contrastive Learning in CT Images

Jae Min Kang (Pusan National University), Heechang Lee (Pusan National University), Dong Uk Kim (Pusan National University), Giltae Song (Pusan National University), Jin Kyu Gahm (Pusan National University)

261: sqFibrosis: A Robust Liver Fibrosis Scoring System for Telepathology*

Yang Yu (Institute for Infocomm Research (I2R), Agency for Science, Technology and Research (ASTAR)), Jiahao Wang (Mechanobiology Institute, National University of Singapore), Hanry Yu (Department of Physiology, The Institute for Digital Medicine (WiSDM), Yong Loo Lin School of Medicine, National University of Singapore)

1572: Integrated Search Framework for Histopathology: From H&E to Multiplexed Immunofluorescence

Amir Hajighasemi (University of Texas Arlington), Jillur Rahman Saurav (The University of Texas at Arlington), Aarti Darji (The University of Texas at Arlington), Jai Prakash Veerla (University of Texas at Arlington), Mohammad Sadegh Nasr (University of Texas at Arlington), Parisa Boodaghi Malidarreh (/university of Texas at Arlington), Michael Robben (UIUC), Helen Shang (University of California Los Angeles), Jacob M Luber (The University of Texas at Arlington)

8: Leveraging Spatial Relationships in Microscope for Patient Cancer Diagnosis*

Jongwoo Kim (Kaist), MinKyu Jeong (KAIST), HyeongMin Park (Kaist), Young Sin Ko (Pathology Center, Seegene Medical Foundation), Mun Y Yi (KAIST)

1533: Automated Framework for Cardiac MRI Segmentation and Disease Diagnosis

Min su Kim (Pusan National University), Hong Bin Jeong (Pusan National University), Hye Won Lee (Pusan National University), Ji Won Lee (Pusan National University), Giltae Song (Pusan National University), Jin Kyu Gahm (Pusan National University)

808: UNCERTAINTY-DRIVEN RHEUMATIC HEART DISEASE DETECTION THROUGH ACTIVE LEARNING*

Pooneh Roshanitabrizi (Children's National Hospital), Vishwesh Nath (NVIDIA), Kelsey Brown (Childrens National), Alison Tompsett (Children's National Hospital), Joselyn Rwebembera (Uganda Heart Institute), Emmy Okello (Uganda Heart Institute), Andrea Beaton (Cincinnati Children's Hospital Medical Center), Holger R Roth (NVIDIA), Craig Sable (Children's National Hospital), Marius George Linguraru (Children's National Hospital)

548: Performance assessment of malignant masses detection from diagnostic mammography*

Guanghao Sun (Shandong Agriculture University), Lifang Si (Beijing Chaoyang Hospital, Capital Medical University), Jialin Hou (Shandong Agriculture University), Qi Yang (Xuanwu Hospital, Capital Medical University), Yong Liu (BUPT), Rui Hou (Beijing University of Posts and Telecommunications)

763: A Multi-modal and Multi-view Fusion Network for BI-RADS Five-classification of Breast Tumors*

Huiru Ming (Zhengzhou University), Lei Yang (Zhengzhou University), Minghui Chen (Zhengzhou University), Suya Han (Zhengzhou University), Hongwei Xu (The Fifth Affiliated Hospital of Zhengzhou University), Ling Ma (Zhengzhou University), Xin Zhao (The Third Affiliated Hospital of Zhengzhou University), Huiqin Jiang (Zhengzhou University)

1001: Feature Tokenizer-Transformers with self-training for the prediction of PD-L1 expression of non-small cell lung cancer from CT*

Ralph Saber (Polytechnique Montréal), Marion Tonneau (Centre de recherche du CHUM), Sami Bahig (Centre de recherche du CHUM), Julie Malo (Centre de recherche du CHUM), Wiam Belkaid (Centre de recherche du CHUM), Meriem Messaoudene (Centre de recherche du CHUM), Nicole Bouchard (Centre Hospitalier Universitaire de Sherbrooke), François Coulombe (Institut Universitaire de Cardiologie et de Pneumologie de Québec), Philippe Joubert (Institut Universitaire de Cardiologie et de Pneumologie de Québec), Houda Bahig (Centre de recherche du CHUM), Simon Turcotte (Centre de recherche du CHUM), Bertrand Routy (Centre de recherche du CHUM), Samuel Kadoury (Polytechnique Montréal)

110: Adaptive Multi-Scale Strategy for Deep Reinforcement Learning based 3D Ear Fenestra Vestibuli Landmark Localization in U-HRCT Images*

Zhiwei Qu (Beijing University Of Technology), Li Zhuo (Beijing University of Technology), Xiaoguang Li (Beijing University of Technology), Hongxia Yin (Beijing Friendship Hospital, Capital Medical University), Zhenchang Wang (Beijing Friendship Hospital, Capital Medical University)

1450: TEMPORAL SUBTRACTION IN DIGITAL MAMMOGRAPHY: IMPROVING MALIGNANT MASS DETECTION AND CLASSIFICATION IN BREAST IMAGING

Kosmia Loizidou (KIOS Research and Innovation Center of Excellence, University of Cyprus), Galateia Skouroumouni (German Oncology Center), Gabriella Savvidou (Medical School University of Cyprus, Bank of Cyprus Oncology Centre), Anastasia Constantinidou (Medical School University of Cyprus, Bank of Cyprus Oncology Centre), Eleni Orphanidou (EIMC Clinic Strovolos), Anneza Yiallourou (Medical School University of Cyprus, Breast Unit, Nicosia General Hospital, State Health Services Organisation), Christos Nikolaou (Limassol General Hospital), Costas Pitrakis (KIOS Research and Innovation Center of Excellence, University of Cyprus)

1522: Pediatric Brain Tumor Classification using MR-images with Age Fusion

Iulian E Tampu (Linkoping University), Tamara Bianchessi (Linkoping University), Anders Eklund (Department of Biomedical Engineering, Department of Computer and Information Science, Linköping University), Neda Haj-Hosseini (Linköping University)

543: Unsupervised Registration Network for Fundus Image Mosaicking*

Ding Shen (Nanjing Tech University), Yuhua Zhang (The Chinese University of Hong Kong), Menglin Wu (Nanjing Tech University), Shiping Zhang (Carbon Medical Device Ltd)

Poster Session 1: Tuesday, May 28

Topics: Emerging topics: Challenging frontiers in AI for medical imaging: interpretability, domain shifts and adaptation, trustworthiness, the role of medical imaging in in silico modelling, precision medicine and clinical applications, virtual twins and medical imaging, Integration of imaging and non-imaging biomarkers

10:00 - 11:30

Banqueting Hall Foyer

Chair: Maria Athanasiou (National Technical University of Athens), Lorenza Brusini (University of Verona)

Note: * Denotes 4-Page Paper Submission

980: Integrating kNN with Foundation Models for Adaptable and Privacy-Aware Image Classification*

Sebastian Doerrich (University of Bamberg), Tobias Archut (University of Bamberg), Francesco Di Salvo (University of Bamberg), Christian Ledig (University of Bamberg)

74: Improving Test-Time adaptation for Histopathology Image Segmentation: Gradient-to-Parameter Ratio Guided Feature Alignment*

Evgenia Chroni (Rutgers University), Konstantinos M. Rafail Dafnis (Rutgers University), Georgios GC Chantzialexiou (Rutgers University), Eric Cosatto (NEC Labs), Dimitris N. Metaxas (Rutgers)

280: Leveraging graph neural network for explainable EEG classification in epileptic patients*

Szymon Mazurek (Sano Centre for Computational Medicine), Rosmary Blanco (Sano Centre for Computational Medicine), Joan Falco-Roget (Sano - Centre for Computational Personalised Medicine), Alessandro Crimi (Sano Centre for Computational Medicine)

134: RPL-SFDA: Reliable Pseudo Label-Guided Source-Free Cross-Modality Adaptation for NPC GTV Segmentation*

Xinya Liu (University of Electronic Science and Technology of China), Jianghao Wu (University of Electronic Science and Technology of China), Xiangde Luo (University of Electronic Science and Technology of China), Wenjun Liao (Sichuan University), Shichuan Zhang (Sichuan Cancer Hospital & Institute), Shaoting Zhang (Shanghai AI Lab), Guotai Wang (University of Electronic Science and Technology of China)

754: Enhanced Structure Preservation and Multi-View Approach in Unsupervised Domain Adaptation for Optic Disc and Cup Segmentation*

Sanghyeon Cho (Korea University), Bogyeong Kang (Korea University), Keun-Soo Heo (Korea University), Eunjung Jo (Korea University), Tae-Eui Kam (Korea University)

653: Self-Supervised Modality-Agnostic Pre-Training of Swin Transformers*

Abhiroop Talasila (IIIT Hyderabad), Maitreya Maity (International Institute of Information Technology Hyderabad), Deva Priyakumar (IIIT Hyderabad)

795: Self-supervised learning for genetically relevant domain identification in morphological images*

Eduard Chelebian (Department of Information Technology and SciLifeLab, Uppsala University), Christophe Avenel (Department of Information Technology and SciLifeLab, Uppsala University), Carolina Wählby (Uppsala University)

1517: Measuring domain shift in deep learning for carotid atherosclerosis assessment from B-mode ultrasound

Theofanis Ganitidis (National Technical University of Athens), Maria Athanasiou (National Technical University of Athens), Konstantia Zarkogianni (Maastricht University), Konstantina S. Nikita (National Technical University of Athens)

833: PARAMETER-EFFICIENT FINE-TUNING OF DINOV2 VISION TRANSFORMERS FOR LUNG NODULE CLASSIFICATION*

Benjamin Veasey (University of Louisville), Amir Amini (University of Louisville)

168: EndoOOD: Uncertainty-Aware Out-of-Distribution Detection in Capsule Endoscopy Diagnosis*

Qiaozhi Tan (Beijing Institute of Technology), Long Bai (The Chinese University of Hong Kong), Guankun Wang (The Chinese University of Hong Kong), Mobarakol Islam (University College London), Hongliang Ren (Chinese University of Hong Kong)

1538: Transseptal Puncture Phase Classification: A GAN-Based Approach to Transesophageal Echocardiography Ultrasound Data Enhancement For Improved Classification

Aya Mutaz Zeidan (King's College London), Durva Sankhe (King's College London), Zhouyang Xu (King's College London), Tanay Suri (King's College London), Steven Williams (King's College London), Ronak Rajani (King's College London), Jonathan Behar (King's College London), Aruna Arujuna (King's College London), Kawal Rhode (King's College London), James Housden (King's College London)

354: HARMONIZING RADIOMICS AND INTERPRETABLE AI: PRECISION AND TRANSPARENCY IN ONCOLOGICAL PROGNOSTICATION*

Sotiris Raptis (University of Thessaly), Ioannis Tsougos (University of Thessaly), Kiki Theodorou (University of Thessaly), Christos Ilioudis (International Hellenic University)

1090: QUANTITATIVE METRICS FOR BENCHMARKING MEDICAL IMAGE HARMONIZATION*

Abhijeet Parida (Childrens National), Zhifan Jiang (Children's National Hospital), Roger J Packer (Children's National Hospital), Robert Avery (Childrens Hospital of Philadelphia), Syed Muhammad Anwar (Children National Hospital, Washington DC), Marius George Linguraru (Children's National Hospital)

1134: On the local geometry of the PET reconstruction problem*

Ramy Merabet (ENS Paris-Saclay), Florent C Sureau (Universite Paris-Saclay, CEA), Alain Trouvé (ENS Paris-Saclay)

293: Unveiling the Temporal Patterns of a 4D CTP Stroke Lesion Outcome Prediction Model through Attention Analysis*

Kimberly Amador (University of Calgary), Anthony Winder (University of Calgary), Noah Pinel (University of Calgary), Jens Fiehler (University Medical Center Hamburg-Eppendorf), Matthias Wilms (University of Calgary), Nils Daniel Forkert (University of Calgary)

320: Domain Generalization by Learning from Privileged Medical Imaging Information*

Steven W Korevaar (RMIT University), Ruwan Tennakoon (RMIT University), Ricky OBrien (RMIT University), Dwarikanath Mahapatra (Inception Institute of Artificial Intelligence), Alireza Bab-Hadiashar (RMIT University)

556: Multi-source-free Domain Adaptation via Uncertainty-aware Adaptive Distillation*

Yaxuan Song (University of Sydney), Jianan Fan (University of Sydney), Dongnan Liu (University of Sydney), Weidong Cai (University of Sydney)

740: CROSS-DOMAIN EXEMPLARS FOR CELL COUNTING*

Veena Dodballapur (University of Sydney), Dongnan Liu (University of Sydney), Yang Song (University of New South Wales), Weidong Cai (University of Sydney)

1141: On the Suitability of B-cos Networks for the Medical Domain*

Isabel Rio-Torto (INESC TEC and FCUP), Tiago FS Gonçalves (FEUP and INESC TEC), Jaime S. Cardoso (FEUP/INESC-TEC), Luis F Teixeira (INESC TEC and University of Porto)

1463: OUT-OF-DISTRIBUTION DETECTION IN POINT-OF-CARE ULTRASOUND BREAST IMAGING

Jennie Karlsson (Lund University), Marisa Wodrich (Lund University), Niels Chr Overgaard (Lund University), Freja Sahlin (Lund University), Kristina Lång (Lund University), Anders Heyden (Lund University), Ida Arvidsson (Lund University)

275: Robust Quantification of Percent Emphysema on CT via Domain Attention: the Multi-Ethnic Study of Atherosclerosis (MESA) Lung Study*

Xuzhe Zhang (Columbia University), Elsa Angelini (Télécom Paris), Eric Hoffman (University of Iowa), Karol Watson (University of California, Los Angeles), Benjamin Smith (Columbia University Medical Center), R. Graham Barr (Columbia University Medical Center), Andrew Laine (Columbia University)

982: UNSUPERVISED DOMAIN ADAPTATION FOR SEMANTIC SEGMENTATION UNDER TARGET DATA SCARCITY*

Tushar Kataria (University of Utah), Beatrice Knudsen (University of Utah), Shireen Y. Elhabian (Scientific Computing and Imaging Institute, University of Utah)

831: TTA-FM: PATIENT-SPECIFIC TEST-TIME ADAPTATION USING FOUNDATION MODELS FOR IMPROVED PROSTATE SEGMENTATION IN MAGNETIC RESONANCE IMAGES*

Hariharan Ravishankar (Indian Institute of Science), Phaneendra Yalavarthy (Indian Institute of Science), Prasad Sudhakar (GE HealthCare)

199: Few-shot Adaptation for Morphology-independent Cell Instance Segmentation *

Ram J Zaveri (West Virginia University), Voke Rotimi Brume (West Virginia University), Gianfranco Doretto (West Virginia University)

1095: ARACHNET: INTERPRETABLE SUB-ARACHNOID SPACE SEGMENTATION USING AN ADDITIVE CONVOLUTIONAL NEURAL NETWORK*

George Dimas (Department of Computer Science and Biomedical Informatics, University of Thessaly), Panagiotis Kalozoumis (Department of Computer Science and Biomedical Informatics, University of Thessaly), Panagiotis Vartholomeos (Department of Computer Science and Biomedical Informatics, University of Thessaly), Dimitris K Iakovidis (Department of Computer Science and Biomedical Informatics, University of Thessaly)

21: Uncertainty Estimation in Contrast-Enhanced MR Image Translation with Multi-Axis Fusion*

Ivo Matteo Baltruschat (Bayer AG), Parvaneh Janbakhshi (Bayer AG), Melanie Dohmen (Bayer AG), Matthias Lenga (Bayer AG)

157: Exploring Backdoor Attacks in Off-the-Shelf Unsupervised Domain Adaptation for Securing Cardiac MRI-Based Diagnosis*

Xiaofeng Liu (Yale University), Fangxu Xing (Massachusetts General Hospital / Harvard Medical School), Hanna Gaggin (MGH and Harvard Medical School), C.-C. Jay Kuo (USC), Georges El Fakhri (Yale), Jonghye Woo (Massachusetts General Hospital / Harvard Medical School)

344: Deep Tooth Duo: Multi-task Age-Sex Estimation and Understanding via Panoramic Radiograph *

Natthanich Hirunchavaro (Khon Kaen University), Pornnakanok Phuphattham (Khon Kaen University), Natnicha Sributsayakarn (Mahidol University), Narawit Prathansap (Khon Kaen University), Suchaya Pornprasertsuk-Damrongsri (Mahidol University), Varangkanar Jirattanasopha (Mahidol University), Thanapong Intharah (Khon Kaen University)

177: Monte-Carlo Frequency Dropout for Predictive Uncertainty Estimation in Deep Learning*

Tal Zeevi (Yale University), Rajesh Venkataraman (Eigen Health Services LLC), Lawrence H Staib (Yale University), John A Onofrey (Yale University)

136: EVALUATING THE IMPACT OF SKIN TONE REPRESENTATION ON OUT-OF-DISTRIBUTION DETECTION PERFORMANCE IN DERMATOLOGY*

Assala Benmalek (IGEE), Celia Cintas (IBM Research Africa), Girmaw Abebe Tadesse (Microsoft AI for Good Research Lab), Roxana Daneshjou (Stanford University), Kush R Varshney (IBM Research), Cherifi Dalila (University of Boumerdes)

207: A joint training and confidence calibration procedure that is robust to label noise*

Coby Penso (Bar Ilan University), Jacob Goldberger (Bar-Ilan University)

388: A conformalized Learning of a Prediction Set with Applications to Medical Imaging Classification *

Roy Hirsch (Bar-Ilan University), Jacob Goldberger (Bar-Ilan University)

14: Source-Free Semi-Supervised Domain Adaptation for Tuberculosis Recognition*

Jie Ma (Sun Yat-Sen University), Zhijun Xu (Sun Yat-sen University), Xinyu Xiong (Sun Yat-sen University), MaYiDiLi NiJiaTi (Department of Radiology, The First People's Hospital of Kashi Prefecture), Dongyu Zhang (Sun Yat-sen University), Weijun Sun (Guangdong University of Technology), Feng Gao (the Sixth Affiliated Hospital, Sun Yat-sen University), Guanbin Li (Sun Yat-sen University)

268: LANGUAGE GUIDED DOMAIN GENERALIZED MEDICAL IMAGE SEGMENTATION*

Shahina Kunhimon (Mohamed bin Zayed University of Artificial Intelligence), Muzammal Naseer (MBZUAI), Salman Khan (MBZUAI), Fahad Shahbaz (MBZUAI)

769: E-DM: EVALUATING DIFFUSION MODEL BY CONFORMAL PREDICTION*

Chunjiang Wang (University of Science and Technology of China), Yunjie Gu (University of Science and Technology of China), Pengbo Liu (USTC), Shang Zhao (University of Science and Technology of China), S. Kevin Zhou (USTC)

303: Unsupervised Domain Adaptation for Human and Animal Chest X-ray Bone Suppression*

Tomohiro Hashimoto (Ridge-i Inc.), Ayaka Maruo (Graduate School of Biomedical Science and Engineering, Hokkaido University), Shoichiro Sekiguchi (Ridge-i), Yoshitaka Ushiku (Ridge-i Inc.), Genya Shimbo (Veterinary Teaching Hospital, Graduate school of Veterinary Medicine, Hokkaido University)

743: Visual Explanations of Deep Convolutional Neural Network for EEG Brain Fingerprint*

Shihao Zhang (Beijing Normal University), Zhaodi Pei (Beijing Normal University), Haonan Mou (Beijing Normal University), Wenting Yang (Beijing Normal University), Qing Li (Beijing Institute of Technology), Xia Wu (Beijing Institute of Technology)

1337: Demonstration of an Adversarial Attack Against a Multimodal Vision Language Model for Pathology Imaging*

Poojitha Thota (The University of Texas at Arlington), Jai Prakash Veerla (University of Texas at Arlington), Patha Guttikonda (The University of Texas at Arlington), Mohammad Sadegh Nasr (University of Texas at Arlington), Shirin Nilizadeh (University of Texas at Arlington), Jacob M Luber (The University of Texas at Arlington)

1456: OPG-SHAP: A Dental AI Tool for Explaining Learned Orthopantomogram Image Recognition

Natthanich Hirunchavaro (Khon Kaen University), Pornnakanok Phuphattham (Khon Kaen University), Narawit Prathansap (Khon Kaen University), Natnicha Sributsayakarn (Mahidol University), Suchaya Pornprasertsuk-Damrongsri (Mahidol University), Varangkanar Jirattanasopha (Mahidol University), Thanapong Intharah (Khon Kaen University)

1485: Detecting Adversarial Attacks in Medical Deep Learning Systems

Ayushi Mehrotra (Troy High School)

875: ConvLoRA and AdaBN based Domain Adaptation via Self-Training*

Sidra Aleem (Dublin City University), Julia Dietlmeier (Insight SFI Research Centre for Data Analytics), Eric Arazo (CeADAR Ireland), Suzanne Little (Dublin City University)

442: Envisioning MedCLIP: A Deep Dive into Explainability for Medical Vision-Language Models*

Anees Ur Rehman Hashmi (Mohamed Bin Zayed University of Artificial Intelligence), Dwarikanath Mahapatra (Inception Institute of Artificial Intelligence), Mohammad Yaqub (Mohamed Bin Zayed University of Artificial Intelligence)

839: Unveiling the Power of High-Quality OCT: An Effective Fundus-Based Modality Fusion Network for Fovea Localization*

Huaqing He (Southern University of Science and Technology), Li Lin (Southern University of Science and Technology, The University of Hong Kong), Zhiyuan Cai (Southern University of Science and Technology), Pujin Cheng (Southern University of Science and Technology), Xiaoying Tang (Southern University of Science and Technology)

1416: Advancing Genomics and Spatial Transcriptomics Data Analysis through Integration of Imaging Physics and Deep Learning

Lei Xing (Stanford University)

205: Automatic Segment-level Assessment of Regional Wall Motion Abnormality from Echocardiography Images*

Kaikai Liu (Northwest A&F University), Yiyu Shi (University of Notre Dame), Jian Zhuang (Guangdong Provincial People's Hospital), Meiping Huang (Guangdong Provincial People's Hospital), Hongwen Fei (Guangdong Provincial People's Hospital), Qing Lu (University of Notre Dame), Erlei Zhang (Northwest A&F University), Xiaoshan Li (Guangdong Provincial People's Hospital), Xiaowei Xu (Guangdong Provincial People's Hospital)

251: Syn3DWound: A Synthetic Dataset for 3D Wound Bed Analysis*

Leo Lebrat (CSIRO), Rodrigo Santa Cruz (CSIRO), Remi Chierchia (CSIRO), Yulia Arzhaeva (CSIRO), Mohammad Ali Armin (CSIRO(Data61)), Joshua Goldsmith (CSIRO), Jeremy Oorloff (CSIRO), Prithvi Reddy (CSIRO), Chuong Nguyen (Data61), Lars Petersson (Data61/CSIRO), Michelle Barakat-Johnson (University of Sydney), Georgina M Luscombe (The University of Sydney), Clinton Fookes (Queensland University of Technology), Olivier Salvado (CSIRO), David Ahmedt-Aristizabal (CSIRO(Data61))

1531: Evaluating myocardial tissue ischemia using hyperspectral imaging

Jens De Winne (imec - UGent)

221: Comparing STEAM and PGSE diffusion MRI signal of rat lymph nodes using in-silico simulations

Rémy MM Gardier (EPFL), Arnaud Savoy (EPFL), Juan Luis Villarreal Haro (EPFL), Gabriel Girard (EPFL), Erick Canales-Rodriguez (EPFL), Elda Fisch-Gomez (École Polytechnique Fédérale de Lausanne), Andreea Hertanu (CHUV), Ileana O. Jelescu (CHUV); Jonathan Rafael-Patino (École Polytechnique Fédérale de Lausanne), Jean-Philippe Thiran (École Polytechnique Fédérale de Lausanne)

Poster Session 1: Tuesday, May 28

Topics: Quality Issues

10:00 - 11:30

Banqueting Hall Foyer

Chair: Maria Athanasiou (National Technical University of Athens), Lorenza Brusini (University of Verona)

*Note: * Denotes 4-Page Paper Submission*

731: PAIRED DIFFUSION: GENERATION OF RELATED, SYNTHETIC PET-CT-SEGMENTATION SCANS USING LINKED DENOISING DIFFUSION PROBABILISTIC MODELS*

Rowan Bradbury (University of Oxford), Katherine A Vallis (Oxford University), Bartlomiej W Papiez (University of Oxford)

Poster Session 2: Wednesday, May 29

Poster Session 2: Wednesday, May 29

Topics: Imaging modalities 1 - Computed tomography (CT), Nuclear imaging (e.g., PET, SPECT), Electrical impedance tomography, X-ray imaging, Optoacoustic/photoacoustic imaging, Optical coherence tomography, Retinal imaging, Perfusion imaging, Infrared imaging, Endoscopy

10:00 - 11:00

Banqueting Hall Foyer

Chairs: Marlena Duda (Georgia State University), George Dimas (University of Thessaly)

Note: * Denotes 4-Page Paper Submission

911: Masked Deep Embeddings of Patches for Teeth Segmentation in Cone Beam CT Images*

Amani H Almalki (Temple University), Longin Jan Latecki (Temple University)

823: Structured Noise Reduction with Texture Preservation in Low-Dose X-Ray Computed Tomography *

Rajesh Langoj (GE HealthCare), Utkarsh Agrawal (GE HealthCare), Bipul Das (GE HealthCare)

611: BACK PROJECTION TENSOR DOMAIN FUSION IMPROVES CROSS-DOMAIN DEEP RECONSTRUCTION FOR SPARSE-VIEW CT*

Zhe Wang (ShanghaiTech University), Huamin Wang (ShanghaiTech University), Jiayi Wu (ShanghaiTech University), Shuo Yang (ShanghaiTech University), Xiao Bai (ShanghaiTech University), Guohua Cao (ShanghaiTech University)

617: A FEATURE-GUIDED DUAL-DOMAIN NETWORK FOR CT METAL ARTIFACT REDUCTION*

Huamin Wang (ShanghaiTech University), Zhe Wang (ShanghaiTech University), Shuo Yang (ShanghaiTech University), Xiao Bai (ShanghaiTech University), Jiayi Wu (ShanghaiTech University), Yang Lv (United Imaging Healthcare), Guohua Cao (ShanghaiTech University)

362: ACCELERATION: SEQUENTIALLY-SCANNING DUAL-ENERGY COMPUTED TOMOGRAPHY IMAGING USING HIGH TEMPORAL RESOLUTION IMAGE RECONSTRUCTION AND TEMPORAL EXTRAPOLATION*

Li Qiaoxin (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Dong Liang (Chinese Academy of Sciences), Li Yinsheng (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences)

1582: Designing a 3D Printed Breast Phantom for Photon Counting CT Imaging

Kyriaki Katsikari (Khalifa University), Nabil Maalej (Khalifa University), Charalampos Pitsalidis (Khalifa University), Aamir Younis Raja (Khalifa University)

299: Full-length-body CBCT imaging in upright position with robotic-arm system: a simulation study*

Tong Lin (Southeast University), Tianling Lyu (Zhejiang Lab), Zhan Wu (Southeast University), Yan Xi (First-Imaging Tech.), Wentao Zhu (Zhejiang Lab), Yang Chen (Southeast University)

1429: DEEP LEARNING SEGMENTATION OF CELL LACUNAE AT THE CARTILAGE BONE INTERFACE FROM 3D SYNCHROTRON PHASE NANO-CT IMAGES

Francoise Peyrin (INSERM), Hao Xu (Shenyang University), Cecile Olivier (INSERM), Christine Chappard (INSERM)

1475: Multi-Modal Analysis of Total Airway Count

Rodrigo Nava (Astrazeneca), François-Xavier Blé (Astrazeneca), Adnan Azim (Astrazeneca), Kristoffer Ostridge (Astrazeneca)

357: A robust deep-learning model for fully automatic segmentation of lymphoma lesions on whole-body [18F]FDG PET/CT images*

Cláudia S. Constantino (Champalimaud Foundation), Francisco Oliveira (Champalimaud Foundation), Sónia Leocádio (Champalimaud Foundation), Mariana Silva (Champalimaud Foundation), Carla Oliveira (Champalimaud Foundation), Joana Castanheira (Champalimaud Foundation), Ângelo Silva (Champalimaud Foundation), Sofia Vaz (Champalimaud Foundation), Ricardo Teixeira (Champalimaud Foundation), Manuel Neves (Champalimaud Foundation), Paulo Lúcio (Champalimaud Foundation), Cristina João (Champalimaud Foundation), Susana Vinga (Instituto Superior Técnico), Durval Costa (Champalimaud Foundation)

482: LOW-DOSE PET IMAGE RECONSTRUCTION USING SELF-SUPERVISED DEEP KERNEL REPRESENTATIONS LEARNED FROM MR*

Cameron D Pain (Monash Biomedical Imaging), Gary Egan (Monash Biomedical Imaging, Monash University), Zhaolin Chen (Monash University)

1220: DECODING RADIOLOGISTS' INTENTIONS: A NOVEL SYSTEM FOR ACCURATE REGION IDENTIFICATION IN CHEST X-RAY IMAGE ANALYSIS

Akash Awasthi (University of Houston), Safwan Ahmad (University of Houston), Bryant Le (University of Houston), Hien V Nguyen (University of Houston)

1523: USING TRIPLE COINCIDENCES TO IMPROVE POSITRON EMISSION TOMOGRAPHY

Dimitrios Thanasis (Medical School, National and Kapodistrian University of Athens), Dhimitri Calamani (Medical School, National and Kapodistrian University of Athens), Charalampos Tsoumpas (University of Groningen)

1474: Anatomically-aware automatic quantification of DaTSCAN images

Adrià Casamitjana (Universitat de Girona), Xavier Lladó (University of Girona), Arnau Oliver (Universitat de Girona)

853: A moment-based weighted block sparse Bayesian learning approach for simultaneous dual-layer lung electrical impedance tomography*

Christos Dimas (National Technical University of Athens), Vassilis Alimisis (National Technical University of Athens), Nikolaos Uzunoglu (National Technical University of Athens), Paul P. Sotiriadis (National Technical University of Athens)

1351: M2Net: Two-stage Multi-label Breast Cancer Detection Networks*

Hien Quang Kha (Taipei Medical University), Dinh Tan Nguyen (University of Technology Sydney), Thinh Ba Lam (HCMUS-VNUHCM), Huy Thanh Nguyen (Ho Chi Minh City University of Education), Truong Tran Cao (Le Quy Don Technical University), Manh Vu Duc (SAIGONMEC), Lan Ho Pham (SAIGONMEC), Liem Pham (SAIGONMEC), Khanh Le Nguyen Quoc (Taipei Medical University)

585: Explainable Transformer Prototypes for Medical Diagnoses*

Ugur Demir (Northwestern University), Debesh Jha (Northwestern University), Zheyuan Zhang (Northwestern University), Elif Keles (Northwestern University), Bradley Allen (Northwestern University), Aggelos Katsaggelos (Northwestern University), Ulas Bagci (Northwestern University)

777: Enhancing Sparse Photoacoustic Tomography Reconstruction with Score-based Generative Models*

Shangqing Tong (ShanghaiTech University), Hengrong Lan (Tsinghua University), Daohuai Jiang (Fujian Normal University), Liming Nie (Guangdong Academy of Medical Sciences), Jianwen Luo (Tsinghua University), Fei Gao (ShanghaiTech University)

248: CROSS-DOMAIN SELF-SUPERVISED RECONSTRUCTION FOR PHOTOACOUSTIC COMPUTED TOMOGRAPHY*

Hengrong Lan (Tsinghua University), Lijie Huang (Tsinghua University), Zhiqiang Li (Tsinghua University), Xingyue Wei (Tsinghua University), Jing Lv (Guangdong Provincial People's Hospital), Jianwen Luo (Tsinghua University)

709: Can Complex-Valued Neural Networks Improve Force Sensing with Optical Coherence Tomography?*

Robin Mieling (Hamburg University of Technology), Sarah Latus (Hamburg University of Technology), Finn Behrendt (Hamburg University of Technology), Debayan Bhattacharya (Hamburg University of Technology), Maximilian Neidhardt (Hamburg University of Technology), Alexander Schlaefer (Hamburg University of Technology)

1409: OCT-based Measurement of Cerebral Blood Vessel Structure, Blood Flow Velocity, and Blood Transit Time

Jianbo Tang (Southern University of Science and Technology), Junxiong Zhou (Southern University of Science and Technology)

933: Bilateral Cross-modal Fusion Network for Multimodal Whole-body Tumor Segmentation*

Tao Yu (Nanjing University of Science and Technology), Xinrui Zhan (Subtle Medical), Lei Xiang (subtle Medical, Inc), Xin Gao (Shanghai Universal Medical Imaging Diagnostic Center), Tao Zhou (Nanjing University of Science and Technology)

864: Leveraging Multimodal Fusion for Enhanced Diagnosis of Multiple Retinal Diseases in Ultra-wide OCTA*

Peilun Shi (The Chinese University of Hong Kong), Hao Wei (The Chinese University of Hong Kong)

693: Improving DCE-MRI through unfolded low-rank + sparse optimisation*

Ondřej Mokrý (Brno University of Technology), Jiří Vitouš (Institute of Scientific Instruments of the CAS), Pavel Rajmic (Brno University of Technology), Radovan Jiřík (Institute of Scientific Instruments of the CAS)

264: AN ENSEMBLE OF WELL-TRAINED STUDENTS CAN PERFORM ALMOST AS GOOD AS A TEACHER FOR CHEST X-RAY DIAGNOSIS*

Shilajit Banerjee (Indian Institute of Technology Jodhpur), Angshuman Paul (Indian Institute of Technology Jodhpur)

1261: Self-supervised micro-baseline binocular endoscope depth estimation method with domain adaptation*

Xueling Wei (Tsinghua University), Tianqi Huang (Tsinghua University), Guochen Ning (Tsinghua University), Shipeng Zhang (Tsinghua University), Longfei Ma (Tsinghua University), Hongen Liao (Tsinghua University)

650: Advancing Optical Chromoendoscopy: Augmented Pseudo-Color Fusion Leveraging Feature Disparities for Superior Image Contrast*

Shipeng Zhang (Tsinghua University), Jiayuan Liu (Tsinghua University), Yuchao Zheng (Tsinghua University), Guochen Ning (Tsinghua University), Zhe Zhao (Tsinghua University), Hongen Liao (Tsinghua University)

13: Annotation-Efficient Polyp Segmentation via Active Learning*

Duojun Huang (Sun Yat-sen University), Xinyu Xiong (Sun Yat-sen University), De-Jun Fan (Sun Yat-sen University), Feng Gao (the Sixth Affiliated Hospital, Sun Yat-sen University), Xiao-Jian Wu (the Sixth Affiliated Hospital, Sun Yat-sen University), Guanbin Li (Sun Yat-sen University)

1179: RECONSTRUCTING THE NORMAL AND SHAPE AT SPECULARITIES IN ENDOSCOPY*

Karim Makki (UCA), Adrien Bartoli (Université Clermont Auvergne)

1547: INFRARED SPECTROSCOPIC IMAGING TO DIAGNOSE AND UNDERSTAND CARDIAC DISEASES

Blake Mathisen (University of Wisconsin - Eau Claire), Vidyani Suryadevara (Stanford), Monte Willis (Allegheny Health Network), Michael J Walsh (New York Institute of Technology)

1548: USING LABEL FREE INFRARED SPECTROSCOPIC IMAGING TO EXAMINE KIDNEY CANCER BIOCHEMISTRY IN NORMAL AND DIABETIC PATIENTS

Mikayla Hady (University of Wisconsin - Eau Claire), Blake Mathisen (University of Wisconsin-Eau Claire), Zach Caterer (University of Wisconsin-Eau Claire), Suman Setty (University of Illinois at Chicago), Michael J Walsh (New York Institute of Technologyyy)

1427: SHUNT VESSEL VISUALIZATION FOR DIAGNOSIS OF STENOSIS IN ARTERIOVENOUS FISTULA

Kiyoshi Naemura (Tokyo University of Technology), Masahiro Kuraishi (Yokohama Daiichi Hospital), Shinichi Masai (Yokohama Daiichi Hospital), Yasuyuki Kaneoka (Zenjinkai Group)

Poster Session 2: Wednesday, May 29

Topics: Imaging modalities 2 - Magnetic resonance imaging (MRI), Diffusion weighted imaging, Magnetic resonance spectroscopy, Functional imaging (e.g., fMRI), EEG & MEG

10:00 - 11:00

Banqueting Hall Foyer

Chairs: Marlena Duda (Georgia State University), George Dimas (University of Thessaly)

*Note: * Denotes 4-Page Paper Submission*

1305: PRECISION DIAGNOSIS OF AUTISM THROUGH RESTING FMRI AND MACHINE LEARNING*

Mohamed Khudri (University of Louisville), Mostafa Abdelrahim (University of Louisville), Mohamed T. Ali (Clinical Informatics Center UTSW Medical Center), Yaser A. Elnakib (Clinical Informatics Center UTSW Medical Center), Ahmed Shalaby (Lyda Hill Department of Bioinformatics,UTSW Medical Center), Ali Mahmoud (University of Louisville), Sohail Contractor (University of Louisville), Gregory Barnes (University of Louisville), Ayman S El-Baz (University of Louisville)

1292: Simultaneous Phase Denoising and Unwrapping of MR Images using A New Deep Learning Method*

Vengala Krishna Sumanth (IIT Tirupati), Gorthi Rama Krishna Sai Subrahmanyam (IIT Tirupati), Subrahmanyam VRMS Gorthi (Indian Institute of Technology - Tirupati)

775: Motion Correction and Super-Resolution for Multi-slice Cardiac Magnetic Resonance Imaging via a Multi-stage Deep Learning Approach*

Zhennong Chen (Massachusetts General Hospital and Harvard Medical School), Hui Ren (HMS/MGH), Quanzheng Li (Massachusetts General Hospital and Harvard Medical School), Xiang Li (Massachusetts General Hospital and Harvard Medical School)

174: Enhancing Undersampled MRI Reconstruction Performance via Denoising Diffusion Models*

Chen Zhou (Harbin Institute of Technology), Yinghao Zhang (Harbin Institute of Technology), Yue Hu (Harbin Institute of Technology)

180: Unpaired MRI Super Resolution with Contrastive Learning*

Hao Li (University Hospital Heidelberg), Quanwei Liu (James Cook University), Jianan Liu (Vitalent Consulting), Xiling Liu (Shenzhen People's Hospital), Yanni Dong (China University of Geosciences), Tao Huang (James Cook University), Zhihan Lyu (Uppsala University)

899: TOWARDS FAST HARD-CONSTRAINED PARALLEL TRANSMIT DESIGN IN ULTRAHIGH FIELD MRI WITH PHYSICS-DRIVEN NEURAL NETWORKS*

Toygan Kilic (University of Minnesota), Jürgen Herrler (Siemens Healthineers), Patrick Liebig (Siemens Healthineers), Omer B Demirel (University of Minnesota), Armin Nagel (Friedrich-Alexander-Universität Erlangen-Nürnberg), Mingyi Hong (University of Minnesota), Georgios B. Giannakis (University of Minnesota), Kamil Ugurbil (Center for Magnetic Resonance Research), Mehmet Akcakaya (University of Minnesota)

736: CRLB-BASED OPTIMIZATION FOR COMBINED FISP AND PSIF MR FINGERPRINTING*

Shi Zhuo Li (Zhejiang University), Huihui Ye (Zhejiang University)

1539: Synthetic DIR/PSIR contrasts computed with clinical sequences for cortical lesion assessment

Colin Vanden Bulcke (UCLouvain), Serena Borrelli (UCLouvain), Anna Stölting (UCLouvain), Renaud Du Pasquier (CHUV), Benoit Macq (UCLouvain), Pietro Maggi (UCLouvain)

1480: Improving DW-MRI Motion Correction Using Overlapping Binning

Michelle Su (Boston Children's Hospital), Serge Vasylechko (Boston Children's Hospital and Harvard Medical School), Cemre Ariyurek (Boston Children's Hospital and Harvard Medical School), Onur Afacan (Boston Children's Hospital and Harvard Medical School), Sila Kurugol (Boston Children's Hospital and Harvard Medical School)

1543: CARDIAC MRI DISPERSION T1_RHO MAPPING

Ed DiBella (University of Utah), Jason Mendes (University of Utah), Kanokwan Bunsawat (University of Utah), Monique Cho (University of Utah)

1249: Reduction of Medical Device Heating During MRI at 1.5T and 3T: Design and Experimental Validation of a New Lead Construct*

Tayeb Zaidi (Northwestern University), Francesca Marturano (Martinos Center for Biomedical Imaging), Giorgio Bonmassar (Martinos Center for Biomedical Imaging), Laleh G Golestani Rad (Northwestern University)

1560: DEEP LEARNING FOR IMPROVED 3D LGE MRI RECONSTRUCTION OF THE ATRIUM

Md Hasibul Husain Hisham (University of Utah), Ed DiBella (University of Utah)

801: Higher Order Gauge Equivariant Convolutions for Neurodegenerative Disorder Classification*

Gianfranco Cortes (University of Florida), Yue Yu (University of Florida), Robin Chen (University of Florida), Melissa J Armstrong (University of Florida), David Vaillancourt (University of Florida), Baba Vemuri (University of Florida)

108: BRAIN CORTICAL SURFACE CAN PREDICT FIBER TRAJECTORIES*

Tianle Han (Shaanxi Normal University), Yifan Lv (Shaanxi Normal University), Mengshen He (Central South University), Yiheng Liu (Shaanxi Normal University), Tianming Liu (University of Georgia), Bao Ge (Shaanxi Normal University)

1009: SELF-SUPERVISED LEARNING WITH UNSUPERVISED MOTION CORRECTION FOR FITTING IVIM MODEL*

Feilin Deng (School of Medical Information Engineering, Guangzhou University of Chinese Medicine), Shangxuan Li (School of Medical Information Engineering, Guangzhou University of Chinese Medicine), Baoer Liu (Department of Medical Imaging Center, Nanfang Hospital, Southern Medical University), Yikai Xu (Department of Medical Imaging Center, Nanfang Hospital, Southern Medical University), Wu Zhou (Guangzhou University of Chinese Medicine)

1494: Advanced Motion Correction in Diffusion MRI Acquisition with Gradient Cycling

Quentin Dessain (UCLouvain), Mathieu Cyrille Simon (Université Catholique de Louvain), Laurence Dricot (UCLouvain), Benoit Macq (UCLouvain)

1097: BAYESIAN SPARSE MODEL FOR COMPLEX-VALUED MAGNETIC RESONANCE SPECTROSCOPY RESTORATION*

Wafae Labrijji (IRIT), Lotfi Chaari (Toulouse INP), Soleakhena Ken (Institut Universitaire du Cancer de Toulouse), Jean-Yves Tourneret, Elisabeth Moyal (Institut Universitaire du Cancer de Toulouse), Gaelle Dormio (Inserm)

1411: Effects of Transcranial Direct Current Stimulation on Thalamic Network Activity and Cognitive Function After Prolonged Sleep Deprivation

Tingting Cui (Air Force Medical Center), Zhen Tian (Air Force Medical Center), Yubin Zhou (Air Force Medical Center)

1244: Joint subject-identification and task-decoding from inferred functional brain graphs via a multi-task neural network*

Elif Sema Balcioglu (EPFL), Berkay Döner (Ecole Polytechnique Fédérale de Lausanne), Ekansh Sareen (Ecole Polytechnique Fédérale de Lausanne), Dimitri Van De Ville (Ecole polytechnique fédérale de Lausanne (EPFL) and University of Geneva), Hamid Behjat (Ecole Polytechnique Fédérale de Lausanne)

1182: AN INTERPRETABLE GRAPH BASED MODEL FOR CLASSIFICATION OF EEG USING DIRECTIONAL FUNCTIONAL CONNECTIVITY*

Mohamed Radwan (Oslo Metropolitan University), Pedro Lind (Oslo Metropolitan University), Anis Yazidi (Oslo Metropolitan University)

678: A SELF-ADAPTIVE SUBGRAPH GENERATION ALGORITHM FOR EEG CHANNEL SELECTION*

Shu Zhang (Northwestern Polytechnical University), Kui Zhao (Northwestern Polytechnical University), Yanqing Kang (Northwestern Polytechnical University), Jinru Wu (Northwestern Polytechnical University), Enze Shi (Northwestern Polytechnical University), Di Zhu (Northwestern Polytechnical University)

772: Cross-Sampling Rate Transfer Learning for Enhanced Raw EEG Deep Learning Classifier Performance in Major Depressive Disorder Diagnosis*

Charles A Ellis (TReNDS), Robyn Miller (TReNDS), Vince Calhoun (TReNDS)

350: MSTI-Former: A Multi-Scale Spatial-Temporal Information Enhanced Transformer for Attentive State Classification*

Qianru Sun (Nanjing University of Aeronautics and Astronautics), Lianyu Wang (Nanjing University of Aeronautics and Astronautics), Liying Zhang (Nanjing University of Aeronautics and Astronautics), Gong Peiliang (Nanjing University of Aeronautics and Astronautics), Yueying Zhou (Nanjing University of Aeronautics and Astronautics), Daoqiang Zhang (Nanjing University of Aeronautics and Astronautics)

73: Time CNN and Graph Convolution Network for Epileptic Spike Detection in MEG Data*

Pauline Mouches (Lyon Neuroscience Research center, INSERM U1028), Thibaut Dejean (Lyon Neuroscience Research center, INSERM U1028), Julien Jung (Lyon Neuroscience Research Center), Romain Bouet (Lyon Neuroscience Research center, INSERM U1028), Carole Lartizien (CREATIS), Romain Quentin (Lyon Neuroscience Research center, INSERM U1028)

1019: SIMULTANEOUS DETECTION AND CONVERSION AMONG ENDOSCOPIC ENHANCEMENT MODALITIES *

Ujwala Chaudhari (London South Bank University), Bisi Bode Kolawole (London South Bank University), Giovanni Santacroce (University College of Cork), Irene Zammarchi (University College of Cork), Rocio del Amor (Universitat Politècnica de València), Pablo Meseguer (Universitat Politècnica de València, València), Andrea Buda (Santa Maria del Prato Hospital, Feltre), Raf Bisschops (University Hospitals Leuven, Leuven), Valery Naranjo (Universitat Politècnica de València), Subrata Ghosh (University College of Cork), Marietta Iacucci (University College of Cork), Enrico Grisan (London South Bank University / University of Padova)

1407: Journal Paper: Convex Combination of Images from Dual-Layer Detectors for High Detective Quantum Efficiencies

Dong Sik Kim (Hankuk University of Foreign Studies), Dayeon Lee (Hankuk University of Foreign Studies)

1562: ENIGMA CONSORTIUM: A SCIENTIFIC NETWORK FOR GLOBAL RESEARCH

Sophia Thomopoulos (Imaging Genetics Center, University of Southern California), Christopher Ching (Imaging Genetics Center, University of Southern California), Neda Jahanshad (Imaging Genetics Center, University of Southern California), Paul Thompson (Imaging Genetics Center)

Poster Session 2: Wednesday, May 29

Topics: Imaging modalities 3 - Microscopy – Light, Confocal, Fluorescence, Microscopy – Super- resolution, Histopathology imaging (e.g., whole slide imaging), Microarrays, Ultrasound

10:00 - 11:00

Banqueting Hall Foyer

Chairs: Marlena Duda (Georgia State University), George Dimas (University of Thessaly)

*Note: * Denotes 4-Page Paper Submission*

1425: DETECTION OF POSSIBLE CELL DIVISIONS FROM PHASE CONTRAST MICROSCOPY WITH DEEP LEARNING

Stathis Hadjidemetriou (University of Limassol), Adonis Hadjigeorgiou (University of Cyprus), Luca Ferrarini (University of Limassol), Rania Hadjisavva (University of Cyprus), Ioanna Panayiotou (University of Limassol), Paris Skourides (University of Cyprus)

94: Robust Graph Pruning for Efficient Segmentation and Cluster Splitting of Cell Nuclei using Deformable Shape Models*

Leonid Kostrykin (Heidelberg University), Karl Rohr (University of Heidelberg, DKFZ)

896: Topological Analysis of Mouse Brain Vasculature via 3D Light-sheet Microscopy Images*

Jiachen Yao (Stony Brook University), Nina Hagemann (University Hospital Essen), Qiaojie Xiong (Stony Brook University), JianXu Chen (Leibniz-Institut für Analytische Wissenschaften), Dirk Hermann (University Hospital Essen), Chao Chen (Stony Brook University)

1007: Physics-inspired generative adversarial modelling for fluctuation-based super-resolution microscopy*

Hamza Mentagui (CNRS, UCA, Inria), Luca Calatroni (CNRS, UCA, INRIA), Sébastien Schaub (Sorbonne Université, CNRS, LBDV), Laure Blanc-Féraud (CNRS, UCA, Inria)

155: Path-CT Registration with Self-Supervised Vision Transformer for Lung Cancer*

Yaying Shi (University of North Carolina at Charlotte), Anshuk Gottipati (University of North Carolina at Charlotte), Yonghong Yan (UNC Charlotte)

433: Weakly Supervised IDH-status glioma classification from H&E-Stained Whole Slide Images*

Shubham Innani (Indiana University), Bhakti Baheti (Indiana University), MacLean Nasrallah (UPenn), Spyridon Bakas (Indiana University)

500: In silico optimization of tissue microarray design for machine learning analysis*

Addie C Woicik (Insitro, University of Washington), Zachary McCaw (Insitro), Santiago Akle (Insitro), Benjamin Dulken (Insitro, Stanford University), Sanjana Narayanan (Insitro), Chris Probert (Insitro)

1198: BENCHMARKING HIERARCHICAL IMAGE PYRAMID TRANSFORMER FOR THE CLASSIFICATION OF COLON BIOPSIES AND POLYPS HISTOPATHOLOGY IMAGES*

Nohemi Sofia Leon Contreras (Radboud University Medical Center), Francesco Ciompi (Radboud University Medical Center), Marina D'Amato (Radboudumc)

695: Integrating multiscale topology in digital pathology with pyramidal graph convolutional networks*

Alvaro Gomariz (Roche), Victor Ibañez (Roche), Przemyslaw Szostak (Roche), Quincy Wong (Roche), Konstanty Korski (Roche), Samaneh Abbasi Sureshjani (Roche)

1113: Diffusion models for nuclei segmentation in low data regimes*

Konstantinos Alexis (IMSI/Athena Research Center), Stergios Christodoulidis (CentraleSupelec), Dimitrios Gunopoulos (University of Athens), Maria Vakalopoulou (CentraleSupelec)

1406: NON-MONOTONIC AUGMENTATION FOR DEEP LEARNING IN HISTOLOGY IMAGING

Arijit Patra (UCB)

1064: A transductive few-shot learning approach for classification of digital histopathological slides from liver cancer*

Aymen Sadraoui (CentraleSupelec), Ségolène Martin (CentraleSupelec), Elliott Barbot (CentraleSupelec), Astrid Laurent-Bellue (Kremlin-Bicêtre), Jean-Christophe Pesquet (CentraleSupelec), Catherine Guettier (Kremlin-Bicêtre), Ismail Ben Ayed (ETS Montreal)

1327: Human-in-the-loop (HITL) learning for identifying glioblastoma hallmarks on H&E slides*

Alvaro A Sandino (IDiALab), Olivia Krebs (Case Western Reserve University), David Becerra (Universidad Nacional de Colombia), Nelly Sandino (Universidad Nacional de Colombia), Jeffrey Helgager (University of Wisconsin-Madison), Eduardo Romero (Universidad Nacional de Colombia), Pallavi Tiwari (University of Wisconsin-Madison)

1521: Automated Anomaly Detection for Neuroimaging: Improving Performance with Simulated Lesions

Ramanujam Narayanan (Indian Institute of Science), Vaanathi Sundaresan (IISc Bangalore)

721: Deep Learning-Based Displacement Tracking for Post-Stroke Myofascial Shear Strain Quantification*

Md Ashikuzzaman (Johns Hopkins University), Jonny Huang (Johns Hopkins Medicine), Steve Bonwit (Johns Hopkins Medicine), Azin Etemadimanesh (Johns Hopkins Medicine), Preeti Raghavan (Johns Hopkins Medicine), Muyinatu Bell (Johns Hopkins University)

1346: ACCURATE MOTION PLAN OF ULTRASONIC LINEAR ARRAY TRANSDUCER FOR NON-INVASIVE 3D ENDOSCOPY OF BRAIN*

Georgios Karagiannis (ORMYLIA Foundation), Stamatios Amanatiadis (ORMYLIA Foundation), Theodoros Karagiannis (Diagnosis Multisystems)

201: Using Segment-level Attention to Guide Breast Ultrasound Video Classification*

Yudong Zhang (University of Chinese Academy of Sciences), Deguang Kong (Renmin Hospital of Wuhan University), Juanjuan Li (Renmin Hospital of Wuhan University), Tao Yang (LSII Technology LLC), Feng Yao (Renmin Hospital of Wuhan University), Ge Yang (National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences)

1331: ENHANCING PULMONARY TUMOR DIAGNOSIS BASED ON ENDOBRONCHIAL ULTRASOUND IMAGES THROUGH CROSS-DOMAIN FEATURES VIA SUPERVISED CONTRASTIVE LEARNING*

Zhe Chen (Tsinghua University), Jiaxin Feng (Guangzhou Medical University), Xingyue Wei (Tsinghua University), Qiong He (Tsinghua University), Shiyue Li (Guangzhou Medical University), Changhao Zhong (Guangzhou Medical University), Jianwen Luo (Tsinghua University)

352: Super resolution ultrasound imaging biomarkers in prostate cancer*

Andrew Mobberley (Heriot Watt University), Georgios Papageorgiou (Heriot-Watt University), Mairead Butler (Heriot Watt), Julian Keanie (Western General Hospital), Daniel Good (Western General Hospital), Kevin Gallagher (Western General Hospital), Alan McNeill (Western General Hospital), Vassilis Sboros (Heriot Watt University), Weiping Lu (Heriot Watt University)

289: Understanding the contribution of Adaptive Beamforming combined with Ultrasound Localisation Microscopy for super-resolved microvessel mapping*

Vassilis Sboros (Heriot Watt University), Vasiliki Voulgaridou (University of Edinburgh), Barbara Nicolas (Université Claude Bernard Lyon and CNRS), Steven McDougall (Heriot-Watt University), Lachlan JMB Arthur (Heriot-Watt University), Georgios Papageorgiou (Heriot-Watt University), Mairead Butler (Heriot Watt), Evangelos Kanoulas (Janssen Pharmaceuticals), Konstantinos Diamantis (University of Edinburgh), Weiping Lu (Heriot Watt University)

349: FEASIBILITY OF A VASCULAR-SPECIFIC SUPER RESOLUTION ULTRASOUND ALGORITHM FOR PROSTATE CANCER IMAGING*

Mairead Butler (Heriot Watt), Georgios Papageorgiou (Heriot-Watt University), Andrew Mobberley (Heriot Watt University), Evangelos Kanoulas (Janssen Pharmaceuticals), Nicholas Leslie (Heriot-Watt University), Julian Keanie (Western General Hospital), Kevin Gallagher (Western General Hospital), Daniel Good (Western General Hospital), Alan McNeill (Western General Hospital), Weiping Lu (Heriot Watt University), Vassilis Sboros (Heriot Watt University)

372: Ultrasound volume reconstruction from 2D freehand acquisitions using neural implicit representations*

François Gaits (Institut de Recherche en Informatique de Toulouse - IRIT), Nicolas Mellado (CNRS - IRIT), Adrian Basarab (CREATIS-LRMN)

1092: ULTRASOUND REBEAMFORMING BASED PHASE ABERRATION CORRECTION*

Wenkai Lu (Tsinghua University), Yonghao Wang (Tsinghua University), Yu Mao (Tsinghua University), Liangni Hu (Tsinghua)

129: Quantitative Ultrasound Imaging using Conventional Multi-Scanline Beamforming*

Young-Min Kim (KAIST), Myeong-Gee Kim (Barreleye), SeokHwan Oh (KAIST), Guil Jung (KAIST), Hyeonjik Lee (KAIST), Hyuksool Kwon (Seoul National University Bundang Hospital), Hyeon-Min Bae (KAIST)

1555: Lesion Size Assessment on Multi-frequency Single Transducer Harmonic Motion Imaging and B-mode Images Using Multi-Modality Segmentation Network

Shiqi Hu (Columbia University), Murad Hossain (University of Hawaii), Elisa Konofagou (Columbia)

1431: TOMOGRAPHIC STIFFNESS RECONSTRUCTION IN 3D CELL CULTURE MODELS USING REFLECTED SHEAR WAVES

Ting-Wei Chen (National Taiwan University), You-Chuan Chen (National Taiwan University), Pai-Chi Li (National Taiwan University)

1446: Ultrasound Speckle Decorrelation Analysis-Based Velocimetry for 3D-Velocity Components Measurement Using a 1D Transducer Array

Jianbo Tang (Southern University of Science and Technology)

1170: ATHEROSCLEROTIC CAROTID PLAQUE AM-FM TEXTURE FEATURE VARIABILITY IN ULTRASOUND VIDEO*

Kyriacos P. Constantinou (University of Cyprus), Ioannis Constantinou (Istognosis Ltd), Christos P Loizou (Cyprus University of Technology), Eythyououlos Kyriacou (Cyprus University of Technology), Andreas Panayides (CYENS Center of Excellence), Andrew Nicolaides (Cyprus Cardiovascular Disease Educational Research Trust), Constantinos Pattichis (University of Cyprus), Marios S Pattichis (The University of New Mexico)

1408: Automated Path Planning for Robotic Ultrasound System

David Liu (Athens Academy), Jerome Charton (Massachusetts General Hospital / Harvard Medical School), Xiang Li (Massachusetts General Hospital and Harvard Medical School), Quanzheng Li (Massachusetts General Hospital and Harvard Medical School)

1455: ASSESSMENT OF ANISOTROPIC PROPERTIES IN LEVATOR ANI MUSCLE PHANTOM USING ULTRASONIC ROTATIONAL SHEAR WAVE ELASTOGRAPHY

Estelle Pitti (KTH Royal Institute of Technology), Matilda Larsson (KTH Royal Institute of Technology), Eline Veldhuijen (KTH Royal Institute of Technology), Emilia Rotstein (Karolinska Institutet)

1287: TOWARDS MULTI-PERSPECTIVE PANORAMIC ULTRASOUND IMAGING USING LOW-COST 3D PRINTED TRACK AND 1D LINEAR PROBE

Joel Joy (Indian Institute of Technology Palakkad), Madhavanunni A N (Indian Institute of Technology Palakkad), Gayathri Malamal (Indian Institute of Technology), Mahesh Raveendranatha Panicker (Singapore Institute of Technology)

Poster Session 2: Wednesday, May 29

Topics: Advanced analysis: Optimization method, Motion compensation and analysis, Shape analysis, Tracking (time series analysis), Probabilistic and statistical models & methods, Quantification and estimation, Validation, Imaging informatics, Tractography, Atlases, Inverse methods, Multi-modality fusion, Multi- and Hyper-spectral imaging

10:00 - 11:00

Banqueting Hall Foyer

Chairs: Marlena Duda (Georgia State University), George Dimas (University of Thessaly)

Note: * Denotes 4-Page Paper Submission

1435: Network inpainting via Optimal Transport

Enrico Facca (University of Bergen), Jan Martin Nordbotten (University of Bergen), Erik Andreas Hanson (Western Norway University of Applied Sciences)

955: FESS Loss: Feature-Enhanced Spatial Segmentation Loss for Optimizing Medical Image Analysis*

Charulkumar J Chodvadiya (Pandit Deendayal Energy University), Navyansh Mahla (Indian Institute of Technology Bombay), Kinshuk Gaurav Singh (Pandit Deendayal Energy University), Kshitij S Jadhav (Indian Institute of Technology, Bombay)

1157: Unifying Local and Global Shape Descriptors to Grade Soft-Tissue Sarcomas using Graph Convolutional Networks*

Johannes Kiechle (Technical University of Munich), Stefan Michael Fischer (Technical University Munich), Daniel Lang (Helmholtz Munich), Maxime Di Folco (Helmholtz Munich), Julia A Schnabel (Technical University of Munich / Helmholtz Center Munich), Jan C. Peeken (Department of Radiation Oncology, Klinikum rechts der Isar, Technical University of Munich (TUM)), Sarah C Foreman (TUM), Verena Rösner (Technical University of Munich), Ann-Kathrin Lohse (University Hospital Munich LMU), Carolin Mogler (Technical University of Munich), Carolin Knebel (Technical University of Munich), Marcus Makowski (Technische Universität München), Klaus Woertler (Technische Universität München), Stephanie Combs (Department of Radiation Oncology, Klinikum rechts der Isar, Technical University of Munich (TUM)), Alexandra Gersing (Technical University of Munich)

951: Quantifying Hippocampal Shape Asymmetry in Alzheimer's Disease using Optimal Shape Correspondences*

Shen Zhu (University of Virginia), Ifrah Zawar (University of Virginia), Jaideep Kapur (University of Virginia), P. Thomas Fletcher (University of Virginia)

1312: Cell Tracking based on Integer Linear Programming and Probability Scores*

Filip Lux (Masaryk University), Petr Matula (Masaryk University Brno)

1066: Gravitational cell detection and tracking in fluorescence microscopy data*

Nikomidisz J. Eftimiu (Masaryk University), Michal Kozubek (Masaryk University)

685: Particle Tracking in Biological Images with Optical-Flow Enhanced Kalman Filtering*

Raphael Reme (Institut Pasteur), Alasdair Newson (Télécom Paris), Elsa Angelini (Télécom Paris), Jean-Christophe Olivo-Marin (Institut Pasteur Olivo-Marin), Thibault Lagache (Institut Pasteur, Paris)

1176: LEFT ATRIAL GEOMETRY AND HEMODYNAMICS QUANTIFIED FROM 4D FLOW MRI IN PRIMARY MITRAL REGURGITATION*

Perrine Marsac (Laboratoire d'Imagerie Biomédicale), Thomas Wallet (APHP), Alban Redheuil (APHP), Moussa Gueda (Laboratoire d'Imagerie Biomédicale), Vincent Nguyen (Laboratoire d'Imagerie Biomédicale), Etienne Charpentier (APHP), Nadjib Hammoudi (APHP), Emilie Bollache (Sorbonne Université), Nadjia Kachenoura

690: A VARIATIONAL INFERENCE SUPER-RESOLUTION METHOD WITH BELTRAMI REGULARIZATION FOR IN-VIVO MR PLACENTA IMAGES*

Mbaimou Auxence Ngremmadji (IADI, Université de Lorraine)

1272: Multiscale estimation of morphometricity for revealing neuorananatomical basis of cognitive traits*

Zixuan Wen (University of Pennsylvania), Jingxuan Bao (University of Pennsylvania), Shu Yang (University of Pennsylvania), Junhao Wen (University of Pennsylvania), Qipeng Zhan (University of Pennsylvania), Yuhua Cui (University of Pennsylvania), Guray Erus (University of Pennsylvania), Zhijian Yang (University of Pennsylvania), Paul Thompson (Imaging Genetics Center), Yize Zhao (Yale University), Christos Davatzikos (University of Pennsylvania), Li Shen (University of Pennsylvania)

632: VASCULAR SKELETON DEFORMATION EVALUATION BASED ON THE METRIC OF SINKHORN DISTANCE*

Xi Lin (University of Electronic Science and Technology of China), Xinxu Wei (Department of Electrical and Computer Engineering, Lehigh University), Shixuan Zhao (Department of Neurosurgery, Sichuan Provincial People's Hospital; University of Electronic Science and Technology of China), Yongjie Li (Univ of Electronic Science and Technology of China)

581: A Deep Learning Normalization Method for Robust Ultrasound Attenuation Coefficient Estimation*

Yonghao Wang (Tsinghua University), Cheng Jin (Tsinghua University), Liangni Hu (Tsinghua), Wenkai Lu (Tsinghua University)

688: COMPYDA: An online tool for verifying the similarity of image datasets*

Tereza Nečasová (Masaryk University), Daniel Múčka (Masaryk University), David Svoboda (Masaryk University)

760: Assessing Test-time Variability with Diverse Point Prompts for Interactive 3D Medical Image Segmentation*

Hao Li (Vanderbilt University), Han Liu (Vanderbilt University), Dewei Hu (Vanderbilt University), Jiacheng Wang (Vanderbilt University), Ipek Oguz (Vanderbilt University)

1008: Measuring Impact of Radiologist-AI Collaboration: Efficiency, Accuracy, and Clinical Impact*

Saptarshi Purkayastha (Indiana University Purdue University Indianapolis), Rohan Isaac (Indiana University), Amulya Veldandi (Indiana University Indianapolis), Rijul Saxena (Indiana University), Pallavi Singh (Indiana University), Pallavi Vaswani (Indiana University), Elizabeth Krupinski (Emory University), Joshua Danish (Indiana University), Judy Wawira (Emory Radiology)

1222: Learning Spatially-Continuous Fiber Orientation Functions*

Tyler A Spears (University of Virginia), P. Thomas Fletcher (University of Virginia)

247: LOCALISATION OF RACIAL INFORMATION IN CHEST X-RAY FOR DEEP LEARNING DIAGNOSIS*

Olivier Salvado (CSIRO), Salamata Konate (QUT), Rodrigo Santa Cruz (CSIRO), Judy Wawira (Emory Radiology), Brandon Price (FSU), Laleh Seyyed-Kalantari (University of Toronto, Vector Institute), Andrew Bradley (Queensland University of Technology), Clinton Fookes (Queensland University of Technology), Leo Lebrat (CSIRO)

244: INDIVIDUALIZED BRAIN PARCELLATION USING MULTIMODAL FUSION AND GRAPH CONVOLUTION NETWORKS*

Jing Zhang (Zhejiang Lab), Jingguo Dai (Zhejiang Lab), Zhichao Wang (Zhejiang Lab), Shengfeng Liu (Zhejiang Lab), Haotian Qian (Zhejiang Lab), Botao Zhao (Ping An Technology (Shenzhen) Co., Ltd.), Yu Zhang (Zhejiang Lab)

728: Structural-connectivity-based individual parcellations improve regional cortical thickness heritability study*

Clément Langlet (Neurospin, Université Paris-Saclay), Denis Rivière (Neurospin, CEA Saclay), Antoine Grigis (Neurospin, CEA, Université Paris-Saclay), Vincent Frouin (UNATI, Neurospin, CEA, Université Paris-Saclay), Jean-François Mangin (Neurospin, CEA Saclay)

713: DUBLINE: A Deep Unfolding Network for B-line Detection in Lung Ultrasound Images*

Tianqi Yang (University of Bristol), Nantheera Anantrasirichai (University of Bristol), Oktay Karakus (Cardiff University), Marco Allinovi (Meyer Childrens Hospital), Hatice Ceylan Koydemir (Texas A&M University), Alin Achim (University of Bristol)

190: Deep Structure-Preserved Graph Embedding for Improved MRF Reconstruction*

Peng Li (Harbin Institute of Technology), Yuping Ji (Harbin Institute of Technology), Yue Hu (Harbin Institute of Technology)

283: Localization of Spatially Extended Brain Sources by Flexible Alternating Projection (FLEX-AP)*

Lukas Hecker (Braude College of Engineering), Amita Giri (McGovern Institute for Brain Research, MIT), Dimitrios Pantazis (Massachusetts Institute of Technology), Amir Adler (Braude College of Engineering & MIT, McGovern Institute)

835: TSRNet: Simple Framework for Real-time ECG Anomaly Detection with Multimodal Time and Spectrogram Restoration Network*

Nhat-Tan Bui (University of Arkansas), Dinh-Hieu Hoang (University of Science, VNU-HCM), Thinh Phan (University of Arkansas), Minh-Triet Tran (University of Science, VNU-HCM), Brijesh Patel (West Virginia University), Donald Adjerooh (West Virginia University), Ngan Le (University of Arkansas)

1233: VOXELWISE INTENSITY PROJECTION FOR THE SPATIAL REPRESENTATION OF RESTING STATE FUNCTIONAL MRI NETWORKS AND MULTIMODAL DEEP LEARNING*

Vaibhavi S Itkyal (Emory University), Anees Abrol (TReNDS), Theodore LaGrow (Georgia Institute of Technology), Vince Calhoun (TReNDS)

1559: COPULA LINKED PARALLEL ICA EXTRACTS STABLE LINKED COMPONENTS

Oktay Agcaoglu (TReNDS), Rogers F. Silva (TReNDS), Deniz Alacam (Trends), Vince Calhoun (TReNDS)

968: Locate-then-Delineate: A Free-Text Report Guided Approach for Pneumothorax Segmentation in Chest Radiographs*

Samruddhi Shastri (International Institute of Information Technology, Hyderabad), Naren Akash R J (International Institute of Information Technology Hyderabad), Lokesh Gautham B M (International Institute of Information Technology, Hyderabad), Jayanthi Sivaswamy (International Institute of Information Technology Hyderabad)

385: MM-SURVNET: DEEP LEARNING-BASED SURVIVAL RISK STRATIFICATION IN BREAST CANCER THROUGH MULTIMODAL DATA FUSION*

Erik Meijering (UNSW), Arcot Sowmya (UNSW), Ewan K.A. Millar (NSW Health Pathology), Raktim Kumar Mondol (UNSW)

1323: MV-Swin-T: MAMMOGRAM CLASSIFICATION WITH MULTI-VIEW SWIN TRANSFORMER*

Sushmita Sarker (University of Nevada, Reno), Prithul Sarker (University of Nevada, Reno), George Bebis (University of Nevada Reno), Alireza Tavakkoli (University of Nevada, Reno)

1417: A DATA-DRIVEN APPROACH TO SPECTRAL-SPATIAL FEATURE-BASED CLASSIFICATION OF ATOPIC DERMATITIS

Eun Bin Kim (Soonchunhyang University), Yoo Sang Baek (Korea University Colledge of Medicine), Onseok Lee (Soonchunhyang University)

1556: Hyperspectral Imaging and Machine Learning Integration for Skin Lesion Classification in Head and Neck Cancers

Doruntina Hoxha (University of Ljubljana)

Poster Session 2: Wednesday, May 29

Topics: Biomedical applications

10:00 - 11:00

Banqueting Hall Foyer

Chairs: Marlena Duda (Georgia State University), George Dimas (University of Thessaly)

1426: MEDICAL IMAGING USING TERAHERTZ SPECTROSCOPY FOR CANCER DIAGNOSIS

Heather Song (University of Colorado Colorado Springs), Jacob Jost (University of Colorado Colorado Springs)

Poster Session 3: Wednesday, May 29

Poster Session 3: Wednesday, May 29

Topics: Quality Issues: Image enhancement/restoration (noise and artifact reduction), Image filtering (e.g., mathematical morphology, wavelets), Image quality assessment, Image compression, Image synthesis

14:30 - 16:00

Banqueting Hall Foyer

Chairs: Simona di Meo (Università degli Studi di Pavia), Olivier Salvado (CSIRO)

Note: * Denotes 4-Page Paper Submission

305: Self-supervised Denoising under Variations between Adjacent Slices for Fluorescence Microscopy Image Stacks*

Qinxuan Luo (Institute of Automation, Chinese Academy of Sciences), Ge Yang (National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences)

63: Restoration of Whole-Body MRI for Intensity Nonuniformities with Discontinuities*

Stathis Hadjidemetriou (University of Limassol), Ansgar Malich (Suedharz Hospital Nordhausen, Jena University Hospital), Lorenz Damian Rossknecht (Suedharz Hospital Nordhausen, Jena University Hospital), Ismini Papageorgiou (Suedharz Hospital Nordhausen, Jena University Hospital)

707: ADAPTIVE JOINT DATA SELECTION FOR SPARSITY BASED ARTERIAL SPIN LABELING MRI DENOISING*

Hangfan Liu (University of Maryland School of Medicine), Bo Li (University of Maryland School of Medicine), Yiran Li (University of Maryland School of Medicine), John Detre (University of Pennsylvania), Ze Wang (University of Maryland School of Medicine)

624: Brain MRI Contrast Enhancement Based on the Schrödinger Spectrum*

Juan Manuel Vargas Garcia (Universite Paris Saclay), Taous Meriem Laleg (INRIA)

1535: PHYSICS-BASED INVERSE PROBLEM FOR ABBERATION CORRECTION IN 3D TRANSCRANIAL CONTRAST-ENHANCED ULTRASOUND IMAGING OF THE BRAIN

Paul Xing (Polytechnique Montreal), Jonathan JP Poree (Polytechnique Montreal), Jean Provost (Polytechnique Montreal, Montreal Heart Institute)

992: Learning diffusion functions for image restoration*

Joel Valdivia Ortega (University of Bonn), Manuel Haas (University of Bonn), Alexander Effland (University of Bonn)

542: Addressing artefacts in anatomical MR images: A k-Space-Based Approach*

Selma Boudissa (Luxembourg Institute of Health), Georgia Kanli (Luxembourg Institute of Health), Daniele Perlo (Luxembourg Institute of Health), Thomas Jaquet (Luxembourg Institute of Health), Olivier Keunen (Luxembourg Institute of Health)

481: Attention-Aware Laparoscopic Image Desmoking Network with Lightness Embedding and Hybrid Guided Embedding*

Ziteng Liu (Harbin Institute of Technology), Jiahua Zhu (Harbin Institute of Technology), Bainan Liu (Harbin Institute of Technology), Hao Liu (Shenyang Institute of Automation, Chinese Academy of Sciences), Wengpeng Gao (Harbin Institute of Technology), Yili Prof. Fu (HIT)

405: Improving Temporal Resolution in Clinical Cardiac-gated SPECT Studies via Surrogate Training in Deep Learning Denoising *

Xirang Zhang (Illinois Institute of Technology), Yongyi Yang (Illinois Institute of Technology), Jovan Brankov (Illinois Institute of Technology), Hendrik Pretorius (Radiology Dept, UMass Medical School), Michael King (Radiology Dept, UMass Medical School)

374: Inter-slice Super-resolution of Magnetic Resonance Images by Pre-training and Self-supervised Fine-tuning*

Xin Wang (Shanghai Jiao Tong University), Zhiyun Song (Shanghai Jiao Tong University), Yitao Zhu (ShanghaiTech University), Sheng Wang (Shanghai Jiao Tong University), Lichi Zhang (Shanghai Jiao Tong University), Dinggang Shen (ShanghaiTech University), Qian Wang (ShanghaiTech University)

253: Perceptual transformer loss for the neural denoising of ultra-low dose CT*

Michael Green (Sheba Medical Center), Edith M. Marom (Sheba Medical Center), Arnaldo Mayer (Sheba Medical Center)

335: ENHANCING LOW-DOSE PET IMAGING: A NOVEL CONTRASTIVE LEARNING METHOD FOR PERCEPTUAL LOSS AND AN ORGAN-AWARE LOSS*

Xinrui Zhan (Subtle Medical), Jian He (Affiliated Drum Tower Hospital, Nanjing University), Aimei Li (Affiliated Drum Tower Hospital, Nanjing University), Lei Xiang (Subtle Medical, Inc)

799: Self-supervised OCT Image Denoising with Slice-to-Slice Registration and Reconstruction*

Shijie Li (NYU Tandon School of Engineering), Palaiologos Alexopoulos (Department of Ophthalmology, New York University Grossman School of Medicine), Anse Vellappally (Department of Ophthalmology, New York University Grossman School of Medicine), Ronald Zambrano (NYU Langone Health, Department of Ophthalmology), Wollstein Gadi (NYU Langone Health, NYU Eye Center), Guido Gerig (NYU)

1075: Surface Coil Intensity Correction for MRI*

Xuan Lei (Ohio State University), Phillip Schniter (The Ohio State University), Chong Chen (The Ohio State University), Muhammad Ahmad Sultan (The Ohio State University), Rizwan Ahmad (The Ohio State University)

614: Multi-Artifact Detection and Filtering in Digital Pathology Using Intrinsic Image Properties*

Varun Kanwar (Insitro), Addie C Woicik (Insitro, University of Washington), Benjamin Dulken (Stanford University), Chris Probert (Insitro), Zachary Ryan McCaw (Insitro)

691: Real-time video enhancement for the removal of surgical lighting artifacts in Computer-Assisted Orthopedic Surgery*

Gianni Allebosch (imec - Ghent University), Matthias Van Hees (Monica Hospital - Antwerp University Hospital), Hiep Q Luong (IMEC-UGent-IPI), Peter Veelaert (UGent), Brian G. Booth (imec - Ghent University)

735: Enriching Degradation Features for Fundus Image Enhancement via Multi-colour Dynamic Filter Network*

Ruoyu Guo (University Of New South Wales), Maurice Pagnucco (UNSW), Yang Song (University of New South Wales)

999: Mitigating over saturated fluorescence image through semi-supervised generative adversarial network*

Shunxing Bao (Vanderbilt University), Junlin Guo (Vanderbilt University), Ho Hin Lee (Vanderbilt University), Ruining Deng (Vanderbilt University), Can Cui (Vanderbilt University), Lucas W Remedios (Vanderbilt University), Quan Liu (Vanderbilt University), Qi Yang (Vanderbilt University), Kaiwen Xu (Vanderbilt University), Xin Yu (Vanderbilt University), Jia Li (VUMC), Yike Li (Vanderbilt University Medical Center), Joseph Roland (Vanderbilt University Medical Center), Qi Liu (Vanderbilt University Medical Center), Ken Lau (Vanderbilt University), Keith Wilson (Vanderbilt University Medical Center), Lori Coburn (Vanderbilt University Medical Center), Bennett A Landman (Vanderbilt University), Yuankai Huo (Vanderbilt University)

1231: Radiation Dose Reduction in Computed Tomography Perfusion of Acute Ischemic Stroke Patients Using A Denoising Autoencoder*

Pattarawut Charatpangoon (University of Calgary), Pauline Delannoy (Université Paris Est Créteil), Connor McDougall (University of Calgary), Fernando Vega (University of Calgary), Aashka D Mohite (University of Calgary), Philip Barber (University of Calgary), Bijoy K. Menon (University of Calgary), Aravind Ganesh (University of Calgary), M. Ethan MacDonald (University of Calgary)

438: A Quantum Denoising-Based RED Framework for 250-MHz & 500-MHz Quantitative Acoustic-Microscopy Resolution Enhancement*

Sayantan Dutta (Department of Radiology, Weill Cornell Medicine), Jonathan Mamou (Department of Radiology, Weill Cornell Medicine)

1238: Multi-Scale Component Trees for Enhanced Representation in Multiplex Immunohistochemistry Imaging*

Romain B Perrin (ICube, CNRS, University of Strasbourg), Aurélie Leborgne (ICube), Nicolas Passat (Université Reims Champagne-Ardenne), Benoit Naegel (ICube, CNRS, University of Strasbourg), Cédric Wemmert (ICube, CNRS, University of Strasbourg)

1561: WAVELETS AND COLON CANCER : AN INSIDE LOOK

Ritish Raghav Maram (George Washington University), Elliot Levy (Clinical Center, National Institutes of Health), Murray H Loew (George Washington University)

1269: DCI-FQA:Dual-Branch Cross Interaction Network for fundus quality assessment*

Cai Xiangwen (Shenzhen University), Haijun Lei (Shenzhen University), Hai Xie (Shenzhen University), Tianfu Wang (Shenzhen University), Guoming Zhang (Shenzhen Eye Hospital), Baiying Lei (Shenzhen University)

1039: Assessment of deep-learning methods for the enhancement of experimental low dose dental CBCT volumes*

Louise Friot Giroux (CREATIS), Francoise Peyrin (INSERM), Voichita Maxim (INSA Lyon)

1436: Improving 3D Lesion Segmentation Robustness Against Image Compression in Multiple Sclerosis

Karim El Khoury (UCLouvain), Maxence Wynen (UCLouvain, ICTEAM, ELEN, PiLab), Pietro Maggi (UCLouvain), Meritxell Bach Cuadra (Universtiuy of Lausanne), Benoit Macq (UCLouvain)

950: REPRODUCING ASYMMETRIES CAUSED BY BREAST CANCER TREATMENT IN PRE-OPERATIVE BREAST IMAGES*

Nuno Freitas (FEUP - Faculdade de Engenharia da Universidade do Porto), Helena Montenegro (INESC TEC, Faculty of Engineering of the University of Porto), Maria Cardoso (Champalimaud Foundation and Faculty of Medicine of the University of Lisbon), Jaime S. Cardoso (INESC TEC)

628: DEEP LEARNING FOR AUTOMATED DETECTION OF BREAST CANCER IN DEEP ULTRAVIOLET FLUORESCENCE IMAGES WITH DIFFUSION PROBABILISTIC MODEL*

Sepehr Salem Ghahfarokhi (Georgia State University), Tyrell To (Marquette University), Julie Jorns (Medical College of Wisconsin), Tina Yen (Medical College of Wisconsin), Bing Yu (Marquette University), Dong Hye Ye (Georgia State University)

1004: DISC: Latent Diffusion Models with Self-Distillation from Separated Conditions for Prostate Cancer Grading*

Man M. Ho (University of Utah), Elham Ghelichkhan (University of Utah), Yosep Chong (The Catholic University of Korea College of Medicine), Yufei Zhou (Case Western Reserve University), Beatrice Knudsen (University of Utah), Tolga Tasdizen (University of Utah)

1152: One-sided unsupervised medical image synthesis with normalized edge consistency*

Vincent Jaouen (IMT Atlantique, LaTIM, INSERM), Pierre-Henri Conze (IMT Atlantique), Dimitris Visvikis (LaTIM, INSERM)

940: ENHANCING TRANSCRANIAL FOCUSED ULTRASOUND TREATMENT PLANNING WITH SYNTHETIC CT FROM ULTRA-SHORT ECHO TIME (UTE) MRI: A MULTI-TASK DEEP LEARNING APPROACH *

Dong Liu (Columbia University), Zhuoyao Xin (The Kennedy Krieger Institute), Robin Ji (Columbia University), Fotis Tsitsos (Columbia University), Sergio Jiménez-Gambín (Columbia University), Elisa Konofagou (Columbia), Vincent Ferrera (Columbia University), Jia Guo (Columbia University)

287: 3D MRI Synthesis with Slice-Based Latent Diffusion Models: Improving Tumor Segmentation Tasks in Data-Scarce Regimes*

Aghiles Kebaili (Université de Rouen), Jérôme Lapuyade-Lahorgue (LITIS-Quantif), Pierre Vera (CHB), Su o Ruan (Laboratoire LITIS)

393: On the use of perceptual loss for fine structure generation: Illustration on lung MR to CT synthesis*

Arthur Longuefosse (LaBRI), Baudouin Denis de Senneville (Team MONC, Inria Sud-Ouest), Gael Dournes (CHU Bordeaux), Ilyes Benlala (CHU Bordeaux), Pascal Desbarats (University of Bordeaux/LaBRI), Fabien Baldacci (University of Bordeaux)

1172: Incorporating 3D Information in 2.5D Networks: Strategies for MR to CT Synthesis*

Arthur Longuefosse (LaBRI), Baudouin Denis de Senneville (Team MONC, Inria Sud-Ouest), Gael Dournes (CHU Bordeaux), Ilyes Benlala (CHU Bordeaux), Pascal Desbarats (University of Bordeaux/LaBRI), Fabien Baldacci (University of Bordeaux)

1063: 3D-HLDM: Human-guided Latent Diffusion Model to improve Microvascular Invasion Prediction in Hepatocellular Carcinoma*

Hyunho Shin (Seoul National University), Nam-Joon Kim (Seoul National University), Ji Hye Min (Samsung Medical Center, Sungkyunkwan University School of Medicine), Seol Eui Lee (Samsung Medical Center, Sungkyunkwan University School of Medicine), Ken Ying-Kai Liao (NVIDIA AI Technology Center), Hyuk-Jae Lee (SNU)

152: Generalize Polyp Segmentation via Inpainting across Diverse Backgrounds and Pseudo-Mask Refinement*

Jiajian Ma (The Chinese University of Hong Kong, Shenzhen), Fangqi Lu (Department of Gastroenterology, South China Hospital, Medical School, Shenzhen University), Silin Huang (Department of Gastroenterology, South China Hospital, Medical School, Shenzhen University), Song Wu (Shenzhen University), Zhen Li (The Chinese University of Hong Kong, Shenzhen)

304: OCT IMAGE GENERATION FOR SUBRETINAL FLUID SEGMENTATION WITH FINITE ELEMENT STRUCTURE MODELING*

Baoye Xie (Nanjing University of Science and Technology), Xiao Zhang (Nanjing University of Science and Technology), Kun Huang (Nanjing University of Science and Technology), Xiao Ma (Nanjing University of Science and Technology), Zetian Zhang (Nanjing University of Science and Technology), Qiang Chen (Nanjing University of Science and Technology)

474: MR TO CT SYNTHESIS USING 3D LATENT DIFFUSION*

Austin Tapp (Children's National Hospital), Abhijeet Parida (Children's National), Can Zhao (Nvidia), Van Lam (Children's National Medical Center), Syed Muhammad Anwar (Children's National Hospital), Natasha Lepore (University of Southern California), Marius George Linguraru (Children's National Hospital)

284: OCT2Confocal: 3D CycleGAN based Translation of Retinal OCT Images to Confocal Microscopy*

Xin Tian (University of Bristol), Nantheera Anantrasirichai (University of Bristol), Lindsay Nicholson (University of Bristol), Alin Achim (University of Bristol)

1505: Adversarial Semantic Image Synthesis for Image-to-Image Translation

Mingzhu Tao (Shanghai Jiao Tong University)

591: Chest-Diffusion: A Light-Weight Text-to-Image Model for Report-to-CXR Generation*

Peng Huang (Fudan University), Xue Gao (Fudan University), Lihong Huang (Fudan University), Jing Jiao (Fudan University), Xiaokang Li (Fudan University), Yuanyuan Wang (Department of Electronic Engineering, Fudan University), Yi Guo (Fudan University)

765: Synthesising 3D cardiac cine-MR images and corresponding segmentation masks using a latent diffusion model*

Nina Cheng (University of Leeds), Zhengji LIU (The Hong Kong Polytechnic University), Yash Deo (University of Leeds), NING BI (University of Leeds), Haoran Dou (University of Leeds), Kun Wu (University of Leeds), Fengming Lin (University of Leeds), Zeike Taylor (University of Leeds), Alejandro Federico Frangi (University of Manchester), Nishant Ravikumar (University of Leeds)

1069: Few-Shot Learning in Diffusion Models for Generating Cerebral Aneurysm Geometries*

Yash Deo (University of Leeds), Haoran Dou (University of Leeds), Nina Cheng (University of Leeds), Toni Lassila (University of Leeds), Nishant Ravikumar (University of Leeds), Fengming Lin (University of Leeds), Alejandro Federico Frangi (University of Manchester)

59: Self-Supervised Denoising of Diffusion MRI Data via Spatio-Angular Noise2Noise

Haotian Jiang (Heilongjiang University), Shu Zhang (Northwestern Polytechnical University), Xuyun Wen (Nanjing University of Aeronautics and Astronautics), Hui Cui (La Trobe University), Jun Lu (College of Computer Science and Technology, Heilongjiang University; Jiaxiang Industrial Technology Research Institute of HLJU), Islem Rekik (Imperial College London), Jiquan Ma (Heilongjiang University), Geng Chen (Northwestern Polytechnical University)

Poster Session 3: Wednesday, May 29

Topics: Image formation, reconstruction, registration

14:30 - 16:00

Banqueting Hall Foyer

Chairs: Simona di Meo (Università degli Studi di Pavia), Olivier Salvado (CSIRO)

Note: * Denotes 4-Page Paper Submission

91: Structure-Preserved Graph Embedding for Improved MRF Reconstruction*

Peng Li (Harbin Institute of Technology), Ji Yuping (Harbin Institute of Technology), Yue Hu (Harbin Institute of Technology)

912: Dual domain self-supervised learning framework for limited view reconstruction in projection magnetic particle imaging*

Xiangjun Wu (Beihang University), Hui Hui (Institute of Automation, Chinese Academy of Sciences), Jingying Jiang (Beihang University), Jie Tian

567: Reconstructing Knee CT volumes from Biplanar X-rays via Self-supervised Neural Field*

Shuyang Lai (ShanghaiTech), Xuanyu Tian (ShanghaiTech University), Qing Wu (ShanghaiTech University), Chenhe Du (ShanghaiTech University), Xiaojun Guan (Zhejiang University School of Medicine), Xiaojun Xu (Zhejiang University School of Medicine), Hongjiang Wei (Shanghai Jiao Tong University), Yuyao Zhang (ShanghaiTech University)

852: Non-Cartesian Self-Supervised Physics-Driven Deep Learning Reconstruction for Highly-Accelerated Multi-Echo Spiral fMRI*

Hongyi Gu (University of Minnesota), Chi Zhang (University of Minnesota), Zidan Yu (University of Hawaii), Christoph Rettenmeier (University of Hawaii), V. Andrew Stenger (University of Hawaii), Mehmet Akcakaya (University of Minnesota)

203: SMNet: A Spherical Mean Network for Probing Tissue Microarchitecture from Single-shell dMRI*

Ye Wu (Nanjing University of Science and Technology), Yue Ding (Nanjing University of Science and Technology), Xiaoming Liu (Department of Radiology, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology), Jiaolong Qin (Nanjing University of Science and Technology), Yizhe Zhang (Nanjing University of Science and Technology), Yoonmi Hong (UNC), Tao Zhou (Nanjing University of Science and Technology)

189: Deep image-pass filter for accelerating dynamic MRI*

Yinghao Zhang (Harbin Institute of Technology), Chen Zhou (Harbin Institute of Technology), Yingjiao Hu (Harbin Institute of Technology), Yue Hu (Harbin Institute of Technology)

193: ADLER-MRI: ADAPTIVE DEEP LEARNING FOR ENHANCED MRI RECONSTRUCTION WITH NOISE-RESILIENT MODELS*

Shahzad Ahmed (Beijing University of Technology), Jinchao Feng (Beijing University of Technology), Malik Abdul Manan (Beijing University of Technology), Muhammad Yaqub (Beijing University of Technology), Kebin Jia (Beijing University of Technology), Zhonghua Sun (Beijing University of Technology)

900: A CONVEX COMPRESSIBILITY-INSPIRED UNSUPERVISED LOSS FUNCTION FOR PHYSICS-DRIVEN DEEP LEARNING RECONSTRUCTION

Yasar U Alcalar (University of Minnesota), Merve Gulle (University of Minnesota), Mehmet Akcakaya (University of Minnesota)

1074: AUTOMATED FETAL BRAIN VOLUME RECONSTRUCTION FROM MOTION-CORRUPTED STACKS WITH DEEP LEARNING

Laifa Ma (University of North Carolina at Chapel Hill), Weili Lin (UNC Chapel Hill), He Zhang (Department of Radiology, Obstetrics and Gynecology Hospital, Fudan University), Gang Li (University of North Carolina at Chapel Hill)

1317: PADMR: PATCH-BASED DENOISING DIFFUSION PROBABILISTIC MODEL FOR MAGNETIC RESONANCE IMAGING RECONSTRUCTION

Mengting Huang (Monash University), Thanh Nguyen-Duc (Monash University), Martin Soellradl (Monash Health), Daniel F Schmidt (Monash University), Roland Bammer (Monash University)

737: Simultaneous q-Space Sampling Optimization and Reconstruction for Fast and High-Fidelity Diffusion Magnetic Resonance Imaging*

Jing Yang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Jian Cheng (Beihang University), Cheng Li (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Wenxin Fan (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Zou Juan (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Ruoyou Wu (The Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Qiegen Liu (Nanchang University), Hairong Zheng (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Shanshan Wang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences)

1247: 2D/3D RECONSTRUCTION OF THE DISTAL TIBIOFIBULAR JOINT FROM BIPLANAR RADIOGRAPHS USING DEEP LEARNING REGISTRATION AND STATISTICAL SHAPE AND INTENSITY MODEL*

Pejman Hashemibakhsh (École de Technologie Supérieure (ÉTS)), Thierry Cresson (École de Technologie Supérieure (ÉTS)), Marie-Lyne Nault (Université de Montréal, Department of Surgery), Jacques de Guise (École de Technologie Supérieure (ÉTS)), Carlos Vazquez (ETS)

1553: Multi-Encoder Deep Learning Improves Computed Tomography

Isha Munjal (Indian Institute of Science, Bengaluru), Jaya Prakash (IISc)

1274: 3D Volumetric Super-Resolution in Radiology Using 3D RRDB-GAN*

Juhung Ha (Indiana University Bloomington), Nian Wang (Indiana University), Surendra Maharjan (Indiana University), Xuhong Zhang (Indiana University)

50: Accelerating DWI Data Acquisition: Reconstruction using Graph-Driven Denoising Diffusion Probabilistic Model*

Zhongrui Huang (ShanghaiTech University), Caiwen Jiang (ShanghaiTech University), Jinchen Gu (ShanghaiTech University), Xinyi Cai (ShanghaiTech University), Han Zhang (ShanghaiTech University), Feihong Liu (Northwest University), Dinggang Shen (ShanghaiTech University)

546: Improving Deep Learning MRI Reconstruction with Contrastive Learning Pretraining*

Mewan Ekanayake (Monash University), Zhifeng Chen (Monash University), Mehrtash Harandi (Monash University), Gary Egan (Monash Biomedical Imaging, Monash University), Zhaolin Chen (Monash University)

77: Alternating unrolling network of jointly low-rank and sparse tensor for accelerating dynamic MRI*

Yinghao Zhang (Harbin Institute of Technology), Yingjiao Hu (Harbin Institute of Technology), Chen Zhou (Harbin Institute of Technology), Yue Hu (Harbin Institute of Technology)

1192: Deep-learning uncertainty estimation for data-consistent breast tomosynthesis reconstruction*

Arnaud Quillent (Télécom Paris), Vincent Bismuth (GE HealthCare), Isabelle Bloch (Télécom Paris), Christophe Kervazo (Télécom Paris), Said Ladjal (Télécom Paris)

612: Accelerated 4D Flow MRI using Deep Low-Rank plus Sparse Neural Network and Complex Difference*

Yuyang Ren (ShanghaiTech University), Wenjian Liu (ShanghaiTech University), Zijian Zhou (ShanghaiTech University), Haikun Qi (ShanghaiTech University), Peng Hu (ShanghaiTech University)

406: Learning with Fixed Point Condition for Convergent PnP PET Reconstruction*

Marion Savanier (BioMaps, Université Paris-Saclay, CEA, CNRS, Inserm, SHFJ), Florent C Sureau (BioMaps, Université Paris-Saclay, CEA, CNRS, Inserm, SHFJ), Claude Comtat (BioMaps, Université Paris-Saclay, CEA, CNRS, Inserm, SHFJ)

171: TFDT-Net: Improving Photoacoustic Imaging Reconstruction with Learnable Filter Transformer*

Jialuo He (Chongqing University), Hengrong Lan (Tsinghua University), Shangqing Tong (ShanghaiTech University), Fei Gao (ShanghaiTech University)

764: Unified Deep Learning For Simultaneous Cardiac Cine MRI Reconstruction, Motion Estimation And Segmentation*

Pengfang Qian (ShanghaiTech University), Zijian Zhou (School of Biomedical Engineering, ShanghaiTech University), Peng Hu (School of Biomedical Engineering, ShanghaiTech University), Haikun Qi (ShanghaiTech University)

1334: Dynamic Representation Learning With Spatial-Frequency Features for Motion Compensated 4D Cone-beam Reconstruction*

Nuo Tong (Xidian University), He Gong (Shaanxi Normal University), Shuiping Gou (Xidian University), Wenwei Shi (Xidian University), Tianhuan Li (Beihang University), Jisheng Li (ljs)

1497: VOLUME OF INTEREST GUIDED SOURCE-DETECTOR TRAJECTORY FOR DENTAL CBCT FIELD OF VIEW EXPANSION

S M Ragib Shahriar Islam (Austrian Center for Medical Innovation and Technology (ACMIT))

187: Inference Stage Denoising for Undersampled MRI Reconstruction*

Yuyang Xue (University of Edinburgh), Chen Qin (Imperial College London), Sotirios Tsaftaris (The University of Edinburgh)

506: Cycle-consistent self-supervised learning for improved highly-accelerated MRI reconstruction*

Chi Zhang (University of Minnesota), Omer B Demirel (University of Minnesota), Mehmet Akcakaya (University of Minnesota)

475: TWO-PHASE MULTI-DOSE-LEVEL PET IMAGE RECONSTRUCTION WITH DOSE LEVEL AWARENESS*

Yuchen Fei (Sichuan University), Yanmei Luo (Sichuan University), Yan Wang (Sichuan University), Jiaqi Cui (Sichuan University), Yuanyuan Xu (Sichuan University), Jiliu Zhou (Sichuan University), Dinggang Shen (United Imaging Intelligence)

1461: Utilizing Deep Learning for Image Reconstruction of a Shift Variant Magnetic Particle Imaging Scanner

Chris McDonough (Oakland University), Chris Bastajian (Oakland University), Alycen Wiacek (Oakland University), Alexey Tonyushkin (Oakland University)

1107: Fourier Diffraction Theorem for 3D Ultrasound Imaging With a Row-Column Array*

Paul Hagemeyer (Ruhr-Universität Bochum), Thomas Lisson (Ruhr-Universität Bochum), Stefanie Dencks (Ruhr-Universität Bochum), Georg Schmitz (Ruhr-Universität Bochum)

963: SPARSE KACZMARZ FOR CONVERGENCE SPEED-UP IN MULTI-CONTRAST MAGNETIC PARTICLE IMAGING*

Lina Nawwas (University Medical Center Hamburg-Eppendorf), Tobias Knoop (University Medical Center Hamburg-Eppendorf), Martin Möddel (University Medical Center Hamburg-Eppendorf)

123: Total Variation Based 2D Image Registration of Post-Mortem Mouse Brain Images*

Juan Antonio K Chong Chie (Purdue University Indianapolis), Scott Persohn (Stark Neuroscience Research Institute), Ethan Miner (Stark Neuroscience Research Institute), Charles Burton (Stark Neuroscience Research Institute), Paul Salama (Indiana University-Purdue University), Paul Territo (Stark Neuroscience Research Institute)

415: A PYRAMIDAL OPTICAL FLOW METHOD BASED ON DENSE SIFT FEATURE MAPS FOR MOTION CORRECTION IN ULTRAFAST POWER DOPPLER IMAGING*

Xingyue Wei (Tsinghua University), Lijie Huang (Tsinghua University), Hengrong Lan (Tsinghua University), Jianwen Luo (Tsinghua University)

761: A Real-Time Image Stitching Framework for Fetoscopic Field-of-View Expansion*

Rowan J Honeywell (Medical Computer Vision and Robotics Lab, University of Toronto), Radian Gondokaryono (Medical Computer Vision and Robotics Lab, University of Toronto), Rory Windrim (Ontario Fetal Centre, Mount Sinai Hospital), Lueder A. Kahrs (University of Toronto)

547: MrRegNet: Multi-resolution Mask Guided Convolutional Neural Network for Medical Image Registration with Large Deformation*

Ruizhe Li (University of Nottingham), Graziela Figueiredo (University of Nottingham), Dorothee Auer (University of Nottingham), Christian Wagner (University of Nottingham), Xin Chen (University of Nottingham)

1003: Pyramid Attention Network for Medical Image Registration*

Zhuoyuan Wang (Shenzhen University), Haiqiao Wang (Shenzhen University), Yi Wang (Shenzhen University)

57: Fully differentiable correlation-driven 2D/3D registration for X-Ray to CT Image Fusion*

Minheng Chen (Southeast University), Zhirun Zhang (Southeast University), Shuheng Gu (Southeast University), Zhangyang Ge (Southeast University), Youyong Kong (Southeast University)

476: High-Precision Alignments for Dual-Layer Detectors Based on a Slant-Edge Phantom*

Dayeon Lee (Hankuk University of Foreign Studies), Dong Sik Kim (Hankuk University of Foreign Studies)

1419: Keypoint Extraction from Segmentations for Image Registration

Saskia Neuber (University of Luebeck (MIC)), Pia F Schulz (University of Lübeck (MIC)), Jan Modersitzki (Luebeck)

1504: A Patient-Specific Pose Regressor for X-Ray to CT Registration

Jiping Zhang (Shanghai Jiao Tong University), Mingzhu Tao (Shanghai Jiao Tong University), Sijia Guo (Shanghai Jiao Tong University), Degang Yu (Shanghai Jiao Tong University), Cheng-Kung Cheng (Shanghai Jiao Tong University)

537: 3D-GUIDED BACKWARD ITERATIVE STRUCTURAL REFINEMENT FOR HISTOLOGY-TO-MRI REGISTRATION*

Qitai Sun (Northwest University), Xiao Li (Northwest University), Tuo Zhang (Northwestern Polytechnical University), Xiaowei He (Northwest University), Yudan Ren (Northwest University), Zhang Han (NorthWest University), Jia Chenjie (northwestern universityty)

609: A Physiological Variability inspired Spatial Regularization for joint Rigid-Deformable Abdominal MR Image Registration*

Isabella Poles (Politecnico di Milano), Eleonora D'Arnese (Politecnico di Milano), Darvin Yi (University of Illinois at Chicago), Marco Domenico Santambrogio (Politecnico di Milano)

583: Multi-Modal Image Registration Pipeline Combining Near-Infrared Fluorescence Optical Imaging and MRI*

Lukas Benjamin Zerweck (Fraunhofer ITMP), Tim Alexander Bergmann (Fraunhofer IGD), Stefan Wesarg (Fraunhofer IGD), Jörn Kohlhammer (Fraunhofer IGD), Michaela Köhm (Fraunhofer ITMP)

1449: Generalized Div-curl Based Regularization for Physically Constrained Deformable Image Registration

Paris P.T. Tzitzimpasis (UMC Utrecht)

1130: From Registration Uncertainty to Segmentation Uncertainty*

Junyu Chen (Johns Hopkins University), Yihao Liu (Johns Hopkins University), Shuwen Wei (Johns Hopkins University), Zhangxing Bian (Johns Hopkins University), Aaron Carass (Johns Hopkins University), Yong Du (Johns Hopkins University)

677: Deformable Image Registration with Stochastically Regularized Biomechanical Equilibrium*

Pablo A Alvarez (Inria), Stephane Cotin (Inria)

463: DART: Deformable Anatomy-Aware Registration Toolkit For Lung CT Registration with Keypoints Supervision*

Yunzheng Zhu (UCLA), Luoting Zhuang (Medical Imaging and Informatics), Yannan Lin (UCLA), Tengyue Zhang (UCLA), Hossein Tabatabaei (UCLA), Denise Aberle (UCLA), Ashley E Prosper (UCLA), Aichi Chien (UCLA), William Hsu (UCLA)

1502: JOURNAL: COMPLEX VALUED LONG SHORT TERM MEMORY BASED ARCHITECTURE FOR FREQUENCY DOMAIN

PHOTOACOUSTIC IMAGING

Jaya Prakash (IISc), Hemanth Nakshatri (Indian Institute of Science)

Poster Session 3: Wednesday, May 29

Topics: Image segmentation

14:30 - 16:00

Banqueting Hall Foyer

Chairs: Simona di Meo (Università degli Studi di Pavia), Olivier Salvado (CSIRO)

Note: * Denotes 4-Page Paper Submission

1469: STRIATUM SEGMENTATION DEEP LEARNING MODEL IN F-18 FP-CIT PET/CT IMAGES

Bong Il Song (Keimyung University Dongsan Hospital)

451: PrinCut-Auto: An Unsupervised 3D Cell Detection Tool for Embryonic Data*

Wei Zheng (Virginia Tech), Boyu Lyu (Virginia Tech), Xuelong Mi (Virginia Tech), James Cheng Peng (Virginia Polytechnic Institute & State University (Virginia Tech)), Yizhi Wang (Virginia Tech), Mengfan Wang (Virginia Tech), Zuolin Cheng (Virginia Tech), Shuoxuan Qiao (Virginia Polytechnic Institute and State University), Zeyuan Hou (Virginia Tech), Guoqiang Yu (Virginia Tech)

781: ASLSEG: ADAPTING SAM IN THE LOOP FOR SEMI-SUPERVISED LIVER TUMOR SEGMENTATION*

Shiyun Chen (Southern University of Science and Technology), Li Lin (Southern University of Science and Technology, The University of Hong Kong), Pujin Cheng (Southern University of Science and Technology), Xiaoying Tang (Southern University of Science and Technology)

815: Unlocking the Potential of Vision-Language Models for Mammography Analysis*

Luis V Moura (Pontifical Catholic University of Rio Grande do Sul), Rafaela Ravazio (Pontifical Catholic University of Rio Grande do Sul), Christian Mattjie (Pontifical Catholic University of Rio Grande do Sul), Lucas Kupssiskü (Pontifical Catholic University of Rio Grande do Sul), Carla Dal Sasso Freitas (Federal University of Rio Grande do Sul), Rodrigo C. Barros (Pontifical Catholic University of Rio Grande do Sul)

142: Gated Multi-scale Attention Transformer for Few-shot Medical Image Segmentation*

Zhenghao Zhao (Illinois Institute of Technology), Hao Ding (Illinois Institute of Technology), Dawen Cai (University of Michigan), Yan Yan (Illinois Institute of Technology)

1051: DEEP LEARNING-BASED SEGMENTATION OF RETINAL VESSELS IN ADAPTATIVE OPTICS OPHTHALMOSCOPY IMAGES*

Abir Aissa (ISEP), Florence Rossant (Institut Supérieur d'Électronique de Paris (ISEP)), Hélène Urien (Institut Supérieur d'Électronique de Paris (ISEP)), Michel Paques (XV-XX-Hospital)

701: UTNETPARA: A HYBRID CNN-TRANSFORMER ARCHITECTURE WITH MULTI-SCALE FUSION FOR WHOLE-SLIDE IMAGE SEGMENTATION*

Boqiang Huang (University of Regensburg), Jiayu Ying (RWTH Aachen University), Ruizhi Lyu (RWTH Aachen University), Nadine Sarah Schaadt (Hannover Medical School), Barbara Mara Klinkhammer (RWTH Aachen University), Peter Boor (RWTH Aachen University), Johannes Lotz (Fraunhofer Institute for Digital Medicine MEVIS), Friedrich Feuerhake (Hannover Medical School), Dorit Merhof (University of Regensburg)

675: ARIA APP | LITTLEONE EDITION, AN ALL-IN-ONE APPLICATION FOR PROCESSING MEDICAL IMAGES AND DEVELOPING U-NET MODELS*

Ntaniel Rez (Department of Biomedical Engineering, University of West Attica), Pantelis Asvestas (University of West Attica)

105: CenterSAM: Fully Automatic Prompt for Dense Nucleus Segmentation*

Yiming Li (Swansea University), Hanchi Ren (Swansea University), Jingjing Deng (Durham University), Xiaoke Ma (Xidian University), Xianghua Xie (Swansea University)

58: S3-TTA: Scale-Style Selection for Test-Time Augmentation in Biomedical Image Segmentation*

Kangxian Xie (Boston University), Siyu Huang (Clemson University), Sebastian Andres A. Cajas Ordonez (Harvard University), Hanspeter Pfister (Harvard University), Donglai Wei (Boston College)

1158: Medical Image Segmentation Using the Equivariance under Diffeomorphisms Framework*

Ming Ma (Winona State University), Jisui Huang (Capital Normal University), Wei Chen (Capital Normal University), Na Lei (Dalian University of Technology), Xianfeng Gu (Stony Brook University)

195: SAM3D: Segment Anything Model in Volumetric Medical Images*

Nhat-Tan Bui (University of Arkansas), Dinh-Hieu Hoang (University of Science, VNU-HCM (Vietnam)), Minh-Triet Tran (University of Science, VNU-HCM), Gianfranco Doretto (West Virginia University), Donald Adjeroh (West Virginia University), Brijesh Patel (West Virginia University), Arabinda k Choudhary (UAMS), Ngan Le (University of Arkansas)

1319: Automated MR Lumbar Vertebrae Analysis: 3D U-Net and Finite Element Analysis for Precise Segmentation and Robust Bone Strength Assessment*

Albi Domi (University of Pennsylvania), David Barreto (University of Pennsylvania), Enrie Gan (University of Pennsylvania), Lihini Ranaweera (University of Pennsylvania), Austin Vu (University of Pennsylvania), Jianna Kim (University of Pennsylvania), Carlos Mendez-Cruz (University of Pennsylvania), Cindy Li (University of Pennsylvania), Makayla Clark (University of Pennsylvania), Frank Pham (University of Pennsylvania), Thamarie Pinnaduwage (University of Pennsylvania), Vachan Patel (University of Pennsylvania), Yuanyuan Chen (University of Pennsylvania), Dev Gupta (University of Pennsylvania), Amber Lan (University of Pennsylvania), Nilan Nandish (University of Pennsylvania), Christiana Cottrell (University of Pennsylvania), Lily Tang (University of Pennsylvania), Ethan Truong (University of Pennsylvania), Victoria Seo (University of Pennsylvania), Amaan Kazi (University of Pennsylvania), Eva Gonzalez-Whitehouse (University of Pennsylvania), Rasleen Grewal (University of Pennsylvania), Elaina Truong (University of Pennsylvania), Carmela Jenckes (University of Pennsylvania), Sarem Khan (University of Pennsylvania), Harry Shi (University of Pennsylvania), Anika Basu (University of Pennsylvania), Aarush Sahni (University of Pennsylvania), Sandhya Konar (University of Pennsylvania), Justin Lin (University of Pennsylvania), Chamith Rajapakse (University of Pennsylvania)

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629: ``HoVer-UNet": Accelerating HoVerNet with UNet-based multi-class nuclei segmentation via knowledge distillation*

Cristian Tommasino (University of Naples Federico II), Cristiano Russo (University of Naples Federico II), Antonio Maria Rinaldi (University of Naples Federico II), Francesco Ciompi (Radboud University Medical Center)

1210: A Hybrid Approach Incorporating Superpixels for Diabetic Foot Lesion Segmentation Using YOLOv5 and SAM*

Lucas Taipe (Universidad Nacional de Ingenieria), Jordi Bardales (Universidad Nacional de Ingenieria), Karelia D Pena (University of Delaware), German Comina (Universidad Nacional de Ingenieria), Margarita Segovia (Universidad Nacional de Ingenieria)

752: FPGA Oriented Lightweight Deep Learning Inference for Liver Cancer Segmentation*

Yingying Xu (Zhejiang Lab), Yinjie Wang (Zhejiang Lab), Qingqing Chen (Department of Radiology, Sir Run Run Shaw Hospital), Hongjie Hu (Department of Radiology, Sir Run Run Shaw Hospital), Huimin Huang (Zhejiang University), Lanfen Lin (Zhejiang University), Yen-Wei Chen (Ritsumeikan University), Jingsong Li (Zhejiang University), Hongxiang Lin (Zhejiang Lab);

784: FTSegNet: A Novel Transformer-Based Fundus Tumor Segmentation Model Guided by Pre-trained Classification Results*

Zhuo Deng (Tsinghua University Shenzhen International Graduate School), Zheng Gong (Tsinghua University Shenzhen International Graduate School), Weihao Gao (Tsinghua Shenzhen International Graduate School), Jingyan Yang (Beijing Tongren Hospital, Capital Medical University; Medical Artificial Intelligence Research and Verification Key Laboratory of the Ministry of Industry and Information Technology), Lei Shao (Beijing Tongren Hospital, Capital Medical University; Medical Artificial Intelligence Research and Verification Key Laboratory of the Ministry of Industry and Information Technology), Fang Li (Tsinghua University Shenzhen International Graduate School), Wen Bin Wei (Beijing Tongren Hospital, Capital Medical University; Medical Artificial Intelligence Research and Verification Key Laboratory of the Ministry of Industry and Information Technology), Lan Ma (Tsinghua University Shenzhen International Graduate School)

156: Runtime Freezing: Dynamic Class Loss for multi-organ 3D Segmentation*

James F W Willoughby (Oxford University), Irina D Voiculescu (University of Oxford)

513: SAM-Correction: Fully Adaptive Label Noise Reduction for Medical Image Segmentation*

Takuro Shimaya (NEC corporation), Masahiro Saiko (NEC)

719: Region-based U-net for accelerated training and enhanced precision in deep brain segmentation*

Mengyu Li (University of Iceland), Lotta M Ellingsen (University of Iceland), Magnús Magnússon (University of Iceland), Thilo van Eimeren (University of Cologne)

762: Meta-transfer learning for few-shot meningioma segmentation*

Shenghui Yan (University of New South Wales), Sidong Liu (Australian Institute of Health Innovation, Macquarie University), Antonio Di Ieva (Macquarie University), Maurice Pagnucco (University of New South Wales), Yang Song (University of New South Wales)

237: AISA-DG: Automatic Implicit Style-Augmented Domain Generalization on Optic Disc/Cup Segmentation*

Lianyu Wang (Nanjing University of Aeronautics and Astronautics), Dingwei Fan (Nanjing University of Aeronautics and Astronautics), Meng Wang (Institute of High Performance Computing, ASTAR), Daoqiang Zhang (Nanjing University of Aeronautics and Astronautics)

224: Automated Prediction of Breast Cancer Response to Neoadjuvant Chemotherapy from DWI Data*

Shir Nitzan (Reichman University), Maya Gilad (Technion - Israel Institute of Technology), Moti Freiman (Technion - Israel Institute of Technology)

1126: CT evaluation of 2D and 3D holistic deep learning methods for the volumetric segmentation of airway lesions*

Amel Imene Hadj Bouzid (University of Bordeaux), Gael Dournes (CHU Bordeaux), Baudouin Denis de Senneville (Team MONC, Inria Sud-Ouest), Fabien Baldacci (University of Bordeaux), Illyes Benlala (CHU de Bordeaux), Pascal Desbarats (University of Bordeaux/LaBRI), Patrick Berger (University of Bordeaux)

137: Semi-Supervised Medical Image Segmentation Based on Local Consistency and Volume Constancy*

Xiuzhen Guo (Capital Normal University), Ji Shi (Capital Normal University), Lianyuan Yu (Capital Normal University), Zezeng Li (Dalian University of Technology), Na Lei (Dalian University of Technology), Hongwei Li (Capital Normal University), Rongguo Zhang (Capital Normal University), Tao Hu (Capital Normal University)

167: Leveraging Unlabeled Data for 3D Medical Image Segmentation through Self-Supervised Contrastive Learning*

Sanaz Karimijafarbigloo (Regensburg University), Reza Azad (RWTH University), Yury Velichko (Northwestern University), Ulas Bagci (Northwestern University), Dorit Merhof (University of Regensburg)

200: WaveU3S: A lightweight wavelet dual-attention Unet for 3D medical image segmentation*

Tianzhao Zhong (Shenzhen Technology University), Huaishui Yang (Shenzhen Technology University), Jihao Li (Shenzhen Technology University), Mengye Lyu (Shenzhen Technology University), Shaojun Liu (Shenzhen Technology University)

363: Semi-Supervised Medical Image Segmentation via Dynamic Pseudo-Label Refinement*

Yayuan Lu (University of Science and Technology of China), Zheyu Zhang (University of Science and Technology of China), Yueyi Zhang (University of Science and Technology of China), Yunwei Ou (Capital Medical University), Xiaoyan Sun (University of Science and Technology of China)

589: FuseNet: Self-Supervised Dual-Path Network for Medical Image Segmentation*

Amirhossein Kazerouni (Iran University of Science and Technology), Sanaz Karimijafarbigloo (Regensburg University), Reza Azad (RWTH University), Yury Velichko (Northwestern University), Ulas Bagci (Northwestern University), Dorit Merhof (University of Regensburg)

1550: EVALUATION OF THE PERFORMANCE OF DEEP LEARNING BASED SEGMENTATION METHODS FOR NEONATAL BRAIN MRI

Elias Faro Gómez (Universidad Politécnica de Madrid), Juan José Gómez (UPM), Lucilio Cordero-Grande (King's College London)

1551: Propagating Uncertainty from Predictions to Clinical Parameters

Thierry Judge (Université de Sherbrooke), Olivier Bernard (Creatis), Woo-Jin Cho Kim (Ultromics Ltd), Alberto Gomez (Ultromics / King's College London), Agisilaos Chartsias (Ultromics Ltd), Pierre-Marc Jodoin (Université de Sherbrooke)

448: Learning transferability in deep segmentation of liver metastases*

Marwan Abbas (LaTIM UMR 1101, Inserm), Gustavo Andrade-Miranda (LaTIM UMR 1101, Inserm), Vincent Bourbonne (University Hospital of Brest), Dimitris Visvikis (LaTIM, Inserm), Bogdan Badic (University Hospital of Brest), Pierre-Henri Conze (IMT Atlantique)

592: Unsupervised Domain Adaptation for Medical Image Segmentation with Conditional Diffusion Model*

Yang Zhao (University of Chinese Academy of Sciences), Ke Lu (University of Chinese Academy of Sciences), Shuhua Wang (University of Chinese Academy of Sciences), Jian Lu (Peking University Third Hospital), Jian Xue (University of Chinese Academy of Sciences)

1059: UNCERTAINTY AWARE SEGMENTATION QUALITY ASSESSMENT IN MEDICAL IMAGES*

Sikha O K (University of Pompeu Fabra), Adrian Galdran (Universitat Pompeu Fabra), Meritxell Riera-Marín (Syca Medical), Javier García López (Syca Technologies SL), Júlia Rodríguez-Comas (Syca Medical), Gemma Piella (Pompeu Fabra University), Miguel Angel González Ballester (Universitat Pompeu Fabra)

531: Deep vessel segmentation based on a new combination of vesselness filters*

Guillaume Garret (Institut Pascal), Antoine Vacavant (Université Clermont Auvergne), Carole Frindel (University of Lyon)

1078: Direct Cardiac Segmentation from Undersampled K-space Using Transformers*

Yundi Zhang (Technical University of Munich), Nil Stolt-Ansó (Technical University of Munich), Jiazen Pan (Technical University of Munich), Wenqi Huang (Technical University of Munich), Kerstin Hammernik (Technical University of Munich), Daniel Rueckert (Technische Universität München)

964: DINOv2 based Self Supervised Learning For Few Shot Medical Image Segmentation*

Lev Ayzenberg (Tel Aviv University), Raja Giryes (Tel Aviv University), Hayit Greenspan (Tel Aviv University)

67: A Self-attention Network with Position-Prior Guided Feature Mapping and Clustering for 3D Pancreas Segmentation*

Kaiyang Fan (Northwest University), Min Zhang (Northwest University), Shouhai Xia (Northwest University), Juni Du (Northwest University), Pan Yang (Northwest University), Xiao Zhang (Northwest University), Jun Feng (Northwest University)

427: Overcoming Dimensional Collapse in Self-supervised Contrastive Learning for Medical Image Segmentation*

Jamshid Hassanpour (University of Strasbourg), Vinkle Kumar Srivastav (University of Strasbourg), Didier Mutter (University Hospital of Strasbourg, IRCCyN, Nantes), Nicolas Padoy (University of Strasbourg)

322: PixelFixmatch: A semi-supervised image segmentation method based on Fixmatch with pixel attention*

Yunxin Zhong (Canon Medical Systems (China) Co. LTD.), Fuyue Wang (Canon Medical Systems (China) Co. LTD.), Chunyao Wang (Canon Medical Systems (China) Co. LTD.), Bing Han (Canon Medical Systems (China) Co. LTD.)

439: Hierarchical loss and geometric mask refinement for multilabel ribs segmentation*

Aleksei Leonov (IRA Labs), Aleksei Zakharov (IRA Labs), Sergey Koshelev (IRA Labs), Maxim Pisov (Skoltech), Anvar Kurmukov (AUMI.AI), Mikhail Belyaev (AUMI AI)

540: Deep vessel segmentation with joint multi-prior encoding*

Amine Sadikine (LATIM UMR 1101), Bogdan Badic (University Hospital of Brest), Enzo Ferrante (CONICET / Universidad Nacional del Litoral), Vincent Noblet (ICube UMR 7357), Pascal Ballet (University of Western Brittany), Dimitris Visvikis (LaTIM, Inserm), Pierre-Henri Conze (IMT Atlantique)

498: PI Seg: Polyp Instance Segmentation with Texture Denoising and Adaptive Region*

Tan-Cong Nguyen (University of Science, VNU-HCM), Kim Anh Phung (PrimeLabs), Tien-Phat Nguyen (University of Science, VNU-HCM), Thao Thi Phuong Dao (University of Science, Vietnam National University, Ho Chi Minh City, Vietnam - Thong Nhat Hospital, Ho Chi Minh City, Vietnam), Cong Nhan Pham (Thong Nhat Hospital), Quang-Thuc Nguyen (University of Science, VNU-HCM), Trung-Nghia Le (University of Science, VNU-HCM), Ju Shen (Department of Computer Science, University of Dayton), Tam V. Nguyen (University of Dayton), Minh-Triet Tran (University of Science, VNU-HCM)

378: Surgical region of interest detection from laparoscopic images using boundary fuzziness*

Song Zhou (Huazhong University of Science and Technology), Jie Zhang (Huazhong University of Science and Technology), Yiwei Wang (Huazhong University of Science and Technology), Huan Zhao (Huazhong University of Science and Technology), Xiong Cai (Huazhong University of Science and Technology), Chidan Wan (Huazhong University of Science and Technology), Han Ding (Huazhong University of Science and Technology)

886: Semi-Supervised Segmentation with Topological Penalization for Quantifying Retinal Degeneration in Histological Sections*

Benjamin Dorra (Institut Pasteur), Giacomo Nardi (Institut Pasteur), Antoine A Habib (Institut Pasteur), Jean-Philippe Annereau (Medetia Pharmaceuticals), Jean-Christophe Olivo-Marin (Institut Pasteur Olivo-Marin), Luis Briseño-Roa (Medetia Pharmaceuticals), Vannary Meas-Yedid (Institut Pasteur)

881: DEEP LEARNING-BASED LEFT HEART CHAMBERS SEGMENTATION AND STRAIN ANALYSIS FROM DYNAMIC MRI IMAGES*

Jonas Leite (Sorbonne Université), Moussa Gueda (Sorbonne Université), Emilie Bollache (Sorbonne Université), Khaoula Bouazizi (Sorbonne Université / ICAN), Perrine Marsac (Laboratoire d'Imagerie Biomédicale), Thomas Wallet (Sorbonne Université), Mikael Prigent (Institute of Cardiometabolism and Nutrition), Vincent Nguyen (Sorbonne Université), Jerome Lamy (Sorbonne Université / HEGP), Antonio Gallo (Sorbonne Université), Elie Mousseaux, Alban Redheuil (Sorbonne Université / ICAN), Gilles Montalescot (AP-HP), Thomas Dietenbeck (Sorbonne Université), Nadjia Kachenoura

340: Style Transfer and Pseudo-label Filtering Improve Transferability in Cell Organelle Segmentation Scenarios*

Dmitrii Seletkov (Karlsruhe Institute of Technology), Simon Reiß (Karlsruhe Institute of Technology), Alexander Freytag (Carl Zeiss AG), Constantin Marc Seibold (University Clinic Essen), Rainer Stiefelhagen (Karlsruhe Institute of Technology)

703: Weakly supervised 3D image segmentation in fluorescence microscopy using maximum intensity projections*

Tijmen Hendrik de Wolf (Erasmus MC - University Medical Center Rotterdam), Daria Roman (Erasmus MC - University Medical Center Rotterdam), Julie Nonnekens (Erasmus MC), Ihor Smal (Utrecht University)

356: Edge-Aware Vessel Segmentation using Scribble Supervision*

Zhanqiang Guo (Department of Automation, Tsinghua University), Jianjiang Feng (Tsinghua University), Jie Zhou (Tsinghua University)

308: Semi-ECNet: Edge-Consistency based Semi-supervised Retinal Vessel Segmentation Network*

Yilun Qiu (Southern University of Science and Technology), Zhongxi Qiu (Research Institute of Trustworthy Autonomous Systems, Southern University of Science and Technology), Yan Hu (Southern University of Science and Technology), Mingyang Bi (Southern University of Science and Technology), Yubo Wang (Southern University of Science and Technology), Jianwen Chen (Southern University of Science and Technology Hospital), Yitian Zhao (Cixi Institute of Biomedical Engineering, Ningbo Institute of Industrial Technology, Chinese Academy of Sciences), Heng Li (Department of Computer Science and Engineering, Southern University of Science and Technology, Shenzhen), Jiang Liu (Southern University of Science and Technology)

748: MOTION-AWARE NEEDLE SEGMENTATION IN ULTRASOUND IMAGES*

Raghav Goel (Qualcomm AI Research), Cecilia G Morales (Carnegie Mellon University), Manpreet Singh (Carnegie Mellon University), Artur Dubrawski (Carnegie Mellon University), John Galeotti (Carnegie Mellon University), Howie Choset (Carnegie Mellon University)

1447: Learning Multi-Organ Foundation Model for Ultrasound Image Segmentation with Task Prompt and Anatomical Prior

Haobo Chen (Shanghai University), Yehua Cai (Fudan University), Changyan Wang (Shanghai University), Hong Ding (Fudan University), Qi Zhang (Shanghai University)

862: Is Two-shot All You Need? A Label-efficient Approach for Video Segmentation in Breast Ultrasound*

Jiajun Zeng (Shenzhen University), Dong Ni (Shenzhen University), Ruobing Huang (Shenzhen University)

1101: A MULTIMODAL FUSION MODEL FOR BREAST TUMOR SEGMENTATION IN ULTRASOUND IMAGES*

Hanlong Yin (Harbin Institute of Technology), Lin Tao (The Second Affiliated Hospital of Harbin Medical University), Yue Zhao (Harbin Institute of Technology)

1049: KEY POINT GUIDE NETWORK FOR INFANT ECHOCARDIOGRAPHIC SEGMENTATION*

Xupeng Wang (Ping An Technology), Zhuo Xiang (Shenzhen University), Weiling Chen (Department of Ultrasound Department, Shenzhen Children Hospital, Hospital of Shantou University), Chuan-Ming Liu (National Taipei University of Technology), Xiaoyu Tian (Shenzhen University), Cheng Zhao (Shenzhen University), Shumin Fan (Department of Ultrasound Department, Shenzhen Children Hospital, Hospital of Shantou University), Wei Yu (Department of Ultrasound Department, Shenzhen Children Hospital, Hospital of Shantou University), Xunyi Chen (Department of Ultrasound Department, Shenzhen Children Hospital, Hospital of Shantou University), Tianfu Wang (Shenzhen University), Bei Xia (Shenzhen Children Hospital), Baiying Lei (Shenzhen University)

622: TopoUT: Enhancing Cell Segmentation through Efficient Topological Regularization*

Shanru Lin (Duke Kunshan University), Temirlan Sabyrbayev (Duke Kunshan University), Zhexu Jin (University of Illinois), Gaoyang Li (Tongji University), Huansheng Cao (Duke Kunshan University), Dongmian Zou (Duke Kunshan University)

81: Dual-Perspective Label Smoothing For Accurate Tumor Segmentation*

Lilong Wang (Shanghai Artificial Intelligence Laboratory), Xuan Wang (Peking Union Medical College Hospital), Yali Xu (Peking Union Medical College Hospital), Xiangan Wu (Peking Union Medical College Hospital), Shunda Du (Peking Union Medical College Hospital), Shaoting Zhang (Shanghai Artificial Intelligence Laboratory), Qiang Sun (Peking Union Medical College Hospital), Xiaosong Wang (Shanghai AI Laboratory)

12: Semi- and Weakly-Supervised Learning for Mammogram Mass Segmentation with Limited Annotations*

Xinyu Xiong (Sun Yat-sen University), Chu-ran Wang (Center for Data Science, Peking University), Wenzhe Li (Tianjin University), Guanbin Li (Sun Yat-sen University)

1445: Journal Paper: CCT-Unet: A U-shaped Network based on Convolution Coupled Transformer for Segmentation of Peripheral and Transition Zones in Prostate MRI

Yifei Yan (Shanghai University), Rongzong Liu (Huashan Hospital, Fudan University), Haobo Chen (Shanghai University), Limin Zhang (Huashan Hospital, Fudan University), Qi Zhang (Shanghai University)

423: GLFNet: Global-Local (Frequency) Filter Networks for efficient Medical Image Segmentation*

Athanasis Tragakis (University of Glasgow), Qianying Liu (University of Glasgow), Chaitanya Kaul (University of Glasgow), Swalpa Kumar Roy (Alipurduar Government Engineering and Management College), Hang Dai (University of Glasgow), Fani Deligianni (University of Glasgow), Roderick Murray-Smith (University of Glasgow), Daniele Faccio (University of Glasgow)

9: Leveraging AI Predicted and Expert Revised Annotations in Interactive Segmentation: Continual Tuning or Full Training?*

Tiezheng Zhang (Johns Hopkins University), Xiaoxi Chen (Renji Hospital), Chongyu Qu (Johns Hopkins University), Alan Yuille (Johns Hopkins University), Zongwei Zhou (Johns Hopkins University)

702: Automated Visceral and Subcutaneous Fat Segmentation in Computed Tomography*

Rui Castro (FEUP), Inês Sousa (FMUP), Fábio Nunes (CHVNGE), Jennifer Mancio (FMUP), Ricardo Fontes-Carvalho (CHVNGE), Carlos Ferreira (INESC TEC), João Pedrosa (INESCTEC)

1460: Lung Segmentation of Cystic Fibrosis Patients using Gaussian Mixture Models and Delineation of Thoracic Structures

Juan Antonio K Chong Chie (Purdue University Indianapolis), Matthew Cooper (Indiana University Indianapolis), Scott Persohn (Indiana University Indianapolis), Charles Burton (Indiana University Indianapolis), Paul Salama (Purdue University), Paul Territo (Indiana University Indianapolis)

631: LESEN: Label-Efficient deep learning for Multi-parametric MRI-based Visual Pathway Segmentation*

Alou Diakite (Paul C Lauterbur Research Center for Biomedical Imaging, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Cheng Li (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Lei Xie (Zhejiang University of Technology), Hua Han (Shenzhen Institute of Advanced Technology, Chinese Academy of Science), Yuanjing Feng (Zhejiang University of Technology), Pei Dong (UBTECH Research, UBTECH Robotics, Shenzhen), Shanshan Wang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences)

307: CALN: CHANNEL ATTENTION LSTM NETWORK FOR PITUITARY SEGMENTATION IN DYNAMIC CONTRAST-ENHANCED MRI*

Jingyi Liu (Beijing Institute of Technology), Zhaoze Sun (Beijing Institute of Technology), Qing Guo (Beijing Institute of Technology), Bing Liu (Department of Radiology, China-Japan Friendship Hospital), Tianyu Fu (Beijing Institute of Technology), Guolin Ma (Department of Radiology, China-Japan Friendship Hospital), Hong Song (Beijing Institute of Technology), Jian Yang (Beijing Institute of Technology)

1108: Preoperative MRI Whole-vertebrae Segmentation in Patients with Severe Adolescent Idiopathic Scoliosis*

Antonin Tranchon (Polytechnique Montreal), Manuela Kunz (National Research Council Canada), Lama Seoud (Polytechnique Montreal)

1503: TWO- AND THREE-DIMENSIONAL NUCLEI AND CELL INSTANCE SEGMENTATION IN MICROSCOPY IMAGES

Tingwei He (The Chinese University of Hong Kong), KER Dai Fei Elmer (CUHK), Dan Wang (The Chinese University of Hong Kong)

1530: FINE TUNED MODELS FOR OOCYTE SEGMENTATION IN STAINED MOUSE OVARIAN SECTIONS

Alexandre Cunha (California Institute of Technology), Máté Borsos (California Institute of Technology), Sirisha Gudavalli (California Institute of Technology), Viviana Grdinaru (Caltech)

828: SLIDING WINDOW FASTEDIT: A FRAMEWORK FOR LESION ANNOTATION IN WHOLE-BODY PET IMAGES*

Matthias Hadlich (Karlsruhe Institute of Technology), Zdravko Marinov (Karlsruhe Institute of Technology), Moon Kim (Institute for AI in Medicine (IKIM), University Hospital Essen), Enrico Nasca (Institute for AI in Medicine (IKIM), University Hospital Essen), Jens Kleesiek (Institute for AI in Medicine (IKIM), University Hospital Essen), Rainer Stiefelhagen (Karlsruhe Institute of Technology)

1540: EVALUATION OF MASKED AUTOENCODER PRE-TRAINING FOR VISION TRANSFORMER-BASED RETINAL FLUID SEGMENTATION IN OCT

Alberto Jose Beltran Carrero (Polytechnic University of Madrid), María Jesús Aparicio Hernández-Lastras (Ophthalmology Provincial Institute, Madrid), Javier Torresano Rodríguez (Ophthalmology Provincial Institute, Madrid), Esther Santos Vicente (Ophthalmology Provincial Institute, Madrid), Maria J Ledesma-Carbayo (Universidad Politécnica de Madrid), Juan José Gómez (UPM)

826: IMPROVED PECTORAL MUSCLE SEGMENTATION IN MAMMOGRAMS THROUGH REGRESSION-BASED DEEP LEARNING AND KNOWLEDGE DISTILLATION*

Christian Huemmer (Siemens Healthineers AG), Ramyar Biniazan (Siemens Healthcare GmbH), Manasi Datar (Siemens Healthcare GmbH), Martin Kraus (Siemens Healthcare GmbH), Andreas Fieselmann (Siemens Healthcare GmbH), Steffen Kappler (Siemens Healthcare GmbH)

1105: PolyCL: Context-Aware Contrastive Learning for Image Segmentation*

Aaron Moseley (University of Kentucky), Abdullah Al Zubaer Imran (University of Kentucky)

184: SAC UW-Net: A self-attention-based network for multimodal medical image segmentation*

Debojyoti Pal (Jio Institute), Tanushree Meena (Jio Institute), Dwarikanath Mahapatra (Inception Institute of Artificial Intelligence), Sudipta Roy (Jio Institute)

257: SoSegFormer: A Cross-scale Feature Correlated Network for Small Medical Object Segmentation*

Wei Dai (City University of Hong Kong), Zixuan Wu (City University of Hong Kong), Rui Liu (City University of Hong Kong), Junxian Zhou (City University of Hong Kong), Min Wang (City University of Hong Kong), Tianyi Wu (City University of Hong Kong), Jun Liu (City University of Hong Kong)

106: Towards an accurate and generalizable multiple sclerosis lesion segmentation model using self-ensembled lesion fusion*

Jinwei Zhang (Johns Hopkins University), Lianrui Zuo (Vanderbilt University), Blake E Dewey (Johns Hopkins University), Samuel Remedios (Johns Hopkins University), Dzung Pham (Henry M. Jackson Foundation), Aaron Carass (Johns Hopkins University), Jerry L Prince (Johns Hopkins University)

800: GS-EMA: Integrating Gradient Surgery Exponential Moving Average with Boundary-Aware Contrastive Learning for Enhanced Domain Generalization in Aneurysm Segmentation*

Fengming Lin (University of Leeds), Yan Xia (University of Leeds), Michael MacRaile (University of Leeds), Yash Deo (University of Leeds), Haoran Dou (University of Leeds), Qiongyao Liu (University of Leeds), Nina Cheng (University of Leeds), Nishant Ravikumar (University of Leeds), Alejandro Federico Frangi (University of Manchester)

390: ENHANCING HYBRID CNN-TRANSFORMER VIA FREQUENCY-BASED BRIDGING FOR MEDICAL IMAGE SEGMENTATION*

Xinyi Zeng (Sichuan University), Tang Cheng (UCAS), Pinxian Zeng (Sichuan University), Jiaqi Cui (Sichuan University), Binyu Yan (Sichuan University), Peng Wang (Sichuan University), Yan Wang (Sichuan University)

1499: PITFALLS OF BRAIN TUMOR SEGMENTATION ON MRI WITH THE FOUNDATION MODEL

Jaeyoung Cho (Heidelberg University Hospital), Aditya Rastogi (Heidelberg University Hospital)

487: Scribble-based Medical Image Segmentation via Shape Perturbation Consistency and Boundary Enhancement Constraint*

Shaoxuan Wu (Northwest University), Xiao Zhang (Northwest University), Ying Huang (Northwestern Polytechnical University), Xia Sun (Northwest University), Jun Feng (Northwest University)

1184: Few-Shot Airway-Tree Modeling using Data-Driven Sparse Priors*

Ali Keshavarzi (Télécom Paris (Institut Polytechnique de Paris)), Elsa Angelini (Télécom Paris)

1421: GAN-BASED SEGMENTATION OF CEREBRAL BLOOD VESSELS FROM A CTA IMAGE

Tetsuya Yuasa (Yamagata University)

Poster Session 3: Wednesday, May 29

Topics: Modeling and Analysis: Modeling – Knowledge, fMRI analysis, Dynamic imaging, Multiplexed imaging, Modeling – Image formation, Integration of imaging and non-imaging biomarkers, Graphical models & methods, Modeling – Anatomical, physiological and pathological, Motion compensation and analysis, Image-guided treatment

14:30 - 16:00

Banqueting Hall Foyer

Chairs: Simona di Meo (Università degli Studi di Pavia), Olivier Salvado (CSIRO)

Note: * Denotes 4-Page Paper Submission

1281: ENHANCING 3T RETINOTOPIC MAPS USING DIFFEOMORPHIC REGISTRATION*

Negar Jalili Mallak (Arizona State University), Yanshuai Tu (Arizona State University), Zhong-Lin Lu (New York University), Yalin Wang (Arizona State University)

566: Localizing and Assessing Node Significance in Default Mode Network using Sub-Community Detection in Mild Cognitive Impairment*

Ameiy Acharya (Indian Institute of Science), Sai Pradeep Chakka (International Institute of Information Technology Bangalore), Neelam Sinha (CBR)

1568: FREQUENCY-BASED BRAIN CONNECTIVITY IN SCHIZOPHRENIA VIA CONNECTIVITY MATRIX INDEPENDENT COMPONENT ANALYSIS

Deniz Alacam (Trends), Robyn Miller (Georgia State University), Oktay Agcaoglu (TReNDS), Vince Calhoun (TReNDS)

841: HCA-Net: Hierarchical Context Attention Network for Intervertebral Disc Semantic Labeling

Afshin Bozorgpour (University of Regensburg), Bobby Azad (South Dakota University), Reza Azad (RWTH University), Yury Velichko (Northwestern University), Ulas Bagci (Northwestern University), Dorit Merhof (University of Regensburg))

126: fMRI Functional Connectivity Augmentation using Convolutional Generative Adversarial Networks for Brain Disorder Classification*

Yee Fan Tan (Monash University), Chee-Ming Ting (Monash University Malaysia), Fuad Noman (Monash University Malaysia), Raphael CW Phan (Monash University), Hernando Ombao (KAUST)

1181: DOUBLE FUNCTIONALLY INDEPENDENT PRIMITIVES PROVIDE DISORDER SPECIFIC FINGERPRINTS OF MENTAL ILLNESSES*

Najme Soleimani (TReNDS), Godfrey Pearson (Yale University), Armin Iraji (Georgia State University), Vince Calhoun (TReNDS)

1165: Introducing Edge-wise Graph Signal Processing: Application to Connectome Fingerprinting*

Thomas A. W. Bolton (CHUV), Mikkel Schöttner (CHUV), Jagruti Patel (ETH Zurich), Patric Hagmann (Lausanne University Hospital (CHUV))

509: IDENTIFYING INDIVIDUALIZED FUNCTIONAL BRAIN NETWORKS: AN UNSUPERVISED DEEP TEMPORAL ATTENTION BASED AUTOENCODER MODEL*

Kexin Wang (Northwest University), Yudan Ren (Northwest University), Zhengyang Liu (Northwest University), Song Yin (Northwest University), Zhenqing Ding (Northwest University), Xiao Li (Northwest University), Xiaowei He (Northwest University)

575: MCI DETECTION USING FMRI TIME SERIES EMBEDDINGS OF RECURRENCE PLOTS*

Ninad Aithal (Center for Brain Research, Indian Institute of Sciences), Sai Pradeep Chakka (International Institute of Information Technology Bangalore), Neelam Sinha (CBR)

1477: Multi-task Learning for Brain Connectome Analysis in the ABCD study

Xuan Kan (Emory University), Hejie Cui (Emory University), Keqi Han (Emory University), Ying Guo (Emory University), Carl Yang (Emory University)

1570: Relating Dynamic Functional Connectivity Complexity with Schizophrenia and Cognitive Scores

David S Blair (Georgia State University), Vince Calhoun (TReNDS), Robyn Miller (TReNDS)

1577: Forecasting Embryonic Development: A Spatial Transcriptomics Approach with High-Resolution Gene Expression Prediction

Parisa Boodaghi Malidarreh (University of Texas at Arlington), Biraaj Rout (UTA), Mohammad Sadegh Nasr (University of Texas at Arlington), Priyanshi Borad (UTA), Jillur Rahman Saurav (The University of Texas at Arlington), Jai Prakash Veerla (University of Texas at Arlington), Kelli Fenelon (UTA), Theodora Koromila (UTA), Jacob M Luber (The University of Texas at Arlington)

897: Semi-supervised variational autoencoder for cell feature extraction in multiplexed immunofluorescence images.*

Piumi Sandarenu (University of New South Wales, Sydney), Julia Chen (Garvan Institute of Medical Research, Darlinghurst), Iveta Slapetova (Cancer Care Centre, St George Hospital, Kogarah), Lois Browne (Cancer Care Centre, St George Hospital, Kogarah), Peter Graham (St George & Sutherland Clinical School, University of New South Wales, Sydney), Alexander Swarbrick (Garvan Institute of Medical Research, Darlinghurst), Ewan Millar (Dept. of Anatomical Pathology, NSW Health Pathology, St George Hospital, Kogarah), Yang Song (University of New South Wales), Erik Meijering (University of New South Wales)

920: MULTIPLEXED SERIAL IMAGING OF IMMUNOTHERAPY RESPONSE WITH SERRS NANOPROBES*

Naxhije Berisha (MSKCC), Konstantinos Plakas (University of Buffalo), Matthieu Gigoux (MSKCC), Taha Merghoub (Weill Cornell Medicine), Chrysafis Andreou (University of Cyprus)

1363: A Neuroimaging ML-Based Framework for Anosmia Grading in COVID-19*

Hossam Magdy Balaha (University of Louisville), Mayada Elgendi (Mansoura University), Ahmed Alksas (University of Louisville), Mohamed Shehata (Speed School of Engineering/University of Louisville), Norah Saleh Alghamdi (Princess Nourah bint Abdulrahman University), Fatma Taher (Zayed University), Mohammed Ghazal (Abu Dhabi University), Mahitab Ghoneim (Mansoura University), Eslam Hamed (Mansoura University), Fatma Sherif (Mansoura University), Ahmed Elgarayhi (Mansoura University), Mohammed Sallah (Mansoura University), Mohamed Abdelbadie Salem (Mansoura University), Elsharawy Kamal (Mansoura University), Harpal Sandhu (Department of Ophthalmology, School of Medicine, University of Louisville, KY), Ayman S El-Baz (University of Louisville)

574: A Framework on Imaging and Phenotype Information Hierarchical Graph Convolutional Networks for Identification of Autism Spectrum Disorder*

Xiaoke Hao (Hebei University of Technology), Mingming Ma (Hebei University of Technology), Yingchun Guo (Hebei University of Technology), Jiawang Li (Hebei University of Technology), Jing Qin (The Hong Kong Polytechnic University), Daoqiang Zhang (Nanjingg University of Aeronautics and Astronautics)

917: AI-DRIVEN INTEGRATION OF HISTOLOGICAL AND GENOMIC DATA FOR UNDERSTANDING BREAST CANCER SURVIVAL*

Laura Valeria Perez Herrera (Vicomtech), Aurora Maria Sucre Rodriguez (Vicomtech), Xabier Calle Sanchez (Vicomtech), Karen Lopez-Linares Roman (Vicomtech), Maria Jesús García González (Vicomtech, Basque Research and Technology Alliance), Alba Garin Muga (Vicomtech), Maria del Mar Vivanco Ruiz (CIC-bioGUNE), Guillermo de Celis (Rodriguez), Eduardo Alonso Monge (Vicomtech)

1167: OPTIMIZING LYMPHOCYTE DETECTION IN BREAST CANCER WHOLE SLIDE IMAGING THROUGH DATA-CENTRIC STRATEGIES*

Amine Marzouki (Université Paris Cité - LIPADE), Zhuxian Guo (Université Paris Cité), Qinghe Zeng (University of Paris), Camille Kurtz (Université Paris Cité), Nicolas Loménié (Université de Paris)

1290: Mapping Alzheimer's Disease Pseudo-Progression with Multimodal Biomarker Trajectory Embeddings*

Lina Takemaru (University of Pennsylvania), Shu Yang (University of Pennsylvania), Ruiming Wu (University of Pennsylvania), Bing He (Indiana University), Christos Davatzikos (University of Pennsylvania), Jingwen Yan (Indiana University), Li Shen (University of Pennsylvania)

1188: SACCADIC DETECTION IN VIRTUAL GAMING FOR DYSLEXIA CLASSIFICATION*

Yih-Choung Yu (Lafayette College), Haki Shyntassov (SEI), Padmanabh Kaushik (Lafayette College), Lisa Gabel (Lafayette College)

394: Identification of high-risk phenotypes through unsupervised clustering of clinical and CT-calcium score imaging features*

Preerna Singh (Case Western Reserve University), Ammar Hoori (Case Western Reserve University), Tao Hu (Case Western Reserve University), David L Wilson (Case Western Reserve University)

1563: Deep Learning-based Non-Invasive Molecular Profiling of Brain Metastases from MR Imaging

Shreyas Bhat Brahmavar (APPCAIR), Tiago Goncalves (A. A. Martinos Center for Biomedical Imaging), Tobias R Bodenmann (A. A. Martinos Center for Biomedical Imaging), Syed Rakin Ahmed (A. A. Martinos Center for Biomedical Imaging), Jay B Patel (A. A. Martinos Center for Biomedical Imaging), Praveer Singh (MGH / Harvard Medical School), Katharina V. Hoebel (A. A. Martinos Center for Biomedical Imaging), Mason C Cleveland (A. A. Martinos Center for Biomedical Imaging), Felix J Dorfner (A. A. Martinos Center for Biomedical Imaging), Dagoberto Pulido Arias (Massachusetts General Hospital), Bruce R Rosen (A. A. Martinos Center for Biomedical Imaging), Jaime S. Cardoso (INESC Porto, Universidade do Porto), Jayashree Kalpathy-Cramer (A. A. Martinos Center for Biomedical Imaging), Elizabeth Gerstner (A. A. Martinos Center for Biomedical Imaging), Albert E Kim (A. A. Martinos Center for Biomedical Imaging), Christopher P Bridge (Massachusetts General Hospital)

856: GEOMETRIC DEEP LEARNING FOR SULCAL GRAPHS*

Rohit Yadav (CNRS, INT), Francois-xavier Dupé (LIS), Sylvain Takerkart (CNRS - INT), Guillaume Auzias (CNRS, INT, Marseille)

888: Optimization-Driven Statistical Models of Anatomies using Radial Basis Function Shape Representation*

Hong Xu (Scientific Computing and Imaging Institute, University of Utah), Shireen Y. Elhabian (Scientific Computing and Imaging Institute, University of Utah)

225: Scale-controlled sulcal depth estimation*

Maxime Dieudonné (CNRS), Guillaume Auzias (CNRS, INT, Marseille), Julien Lefevre (Université Aix-Marseille)

1444: A MULTISCALE APPROACH FOR EVALUATING THE TRANSLATIONAL POTENTIAL OF ANTI-MIR-155 IN LUNG CANCER

Prashant Dogra (Houston Methodist Research Institute), Vittorio Cristini (Houston Methodist Research Institute), Zhihui Wang (Houston Methodist Research Institute)

1219: ROBUST CARDIAC T1 MAPPING IN THREE HEARTBEATS WITH ULTRAMAP: A SYNERGISTIC CNN-FC APPROACH*

Hongyu Li (UIH America Inc), Qiao Liu (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Xuhao Dong (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Zhongren Guo (China Three Gorges University, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Kunyang Wang (China Three Gorges University, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Shengping Liu (Chongqing University of Technology), Qi Liu (UIH America Inc), Yongquan Ye (UIH America Inc), Yichen Hu (UIH America Inc), Zheng Zhong (UIH America Inc), hui liu (UIH America Inc), Yanjie Zhu (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Haifeng Wang (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Dong Liang (Chinese Academy of Sciences), Jian Xu (UIH America Inc), Yihang Zhou (Shenzhen Institute of Advanced Technology)

1062: Intensity-based 3D motion correction for cardiac MR images*

Nil Stolt-Ansó (Technische Universität München), Vasiliki Sideri-Lampretsa (Technische Universität München), Maik Dannecker (Technische Universität München), Daniel Rueckert (Technische Universität München)

906: Automatic Intraoperative CT-CBCT Registration for Image-guided Pelvic Fracture Reduction*

Yanzhen Liu (Beihang University), Yudi Sang (Rossum Robot), Sutuke Yibulayimu (Beihang University), Gang Zhu (Rossum Robot), Chao Shi (Beihang University), Chendi Liang (Beihang University), Jixuan Liu (Beihang University), Qing Yang (Beihang University), Chunpeng Zhao (Beijing Jishuitan Hospital), Qiyong Cao (Beijing Jishuitan Hospital), Xinbao Wu (Beijing Jishuitan Hospital), Yu Wang (Beihang University)

1519: Beyond the established: Contrast-free Magnetic Resonance Imaging for Transcatheter Aortic Valve Replacement planning using a Computational Aorta Unfolding Method.

Enrique Almar-Munoz (Medical University of Innsbruck), Mathias Pamminger (Medical University of Innsbruck), Christian Kremser (Medical University of Innsbruck), Markus Haltmeier (University of Innsbruck), Agnes Mayr (Medical University of Innsbruck)

1542: Development of a Robust Algorithm for 3D-rendering of Multi-2D Echocardiography Views

Katerina Afentouli (National Technical University of Athens), Melina Tourni (Columbia University), Johanna Tonko (University College London), Elisa Konofagou (Columbia University)

605: FREQUENCY-BASED TEMPORAL ANALYSIS NETWORK FOR ACCURATE PHASE RECOGNITION FROM SURGICAL VIDEOS*

Sainan Zhang (Nanjing University of Aeronautics and Astronautics), Tianze Xu (Nanjing University of Aeronautics and Astronautics), Zhi Cao (Nanjing University of Aeronautics and Astronautics), Hongen Liao (Tsinghua University), Guochen Ning (Tsinghua University), Fang Chen (Shanghai Jiao Tong University), Nanjing University of Aeronautics and Astronautics)

866: UNSUPERVISED STRUCTURE-AWARE CASCADED RECURRENT NETWORK BASED NONRIGID MOTION CORRECTION FOR ULTRAFAST POWER DOPPLER IMAGING*

Xingyue Wei (Tsinghua University), Rui Wang (Tsinghua University), Lijie Huang (Tsinghua University), Jianwen Luo (Tsinghua University)

432: Study the Effect of the Personalized Lung Compliance on Lung Tumor Motion for Radiation Therapy*

Hamid Ladjal (LIRIS université Lyon 1), Elodie Desseree (LIRIS université Lyon 1), Behzad Shariat (LIRIS université Lyon 1)

Poster Session 4: Thursday, May 30

Poster Session 4: Thursday, May 30

Topic: Focus on Deep learning

09:30 – 11:00

Banqueting Hall Foyer

Chairs: Sotirios Goudos (Aristotle University of Thessaloniki), Emilie Chouzenoux (Inria Saclay)

*Note: * Denotes 4-Page Paper Submission*

670: HOW AND WHY DOES DEEP ENSEMBLE COUPLED WITH TRANSFER LEARNING INCREASE PERFORMANCE IN BIPOLAR DISORDER AND SCHIZOPHRENIA CLASSIFICATION?*

Sara Petiton (Neurospin, CEA), Antoine Grigis (Neurospin, CEA, Université Paris-Saclay), Benoit Dufumier (EPFL), Edouard Duchesnay (Paris-Saclay University)

832: Privacy-Preserving Federated Deep-Equilibrium Learning for Medical Image Classification*

Alexandros Gkillas (University of Patras), Dimitris Ampeliotis (Digital Media and Communication Department, Ionian University), Kostas Berberidis (University of Patras)

97: Myocardium Tissue Characteristics Quantification in Echocardiography*

Guil Jung (KAIST), Young-Min Kim (KAIST), Hyeonjik Lee (KAIST), SeokHwan Oh (KAIST), Myeong-Gee Kim (Barreleye), Hyuksool Kwon (Seoul National University Bundang Hospital), Hyeon-Min Bae (KAIST)

630: Enhancing Representation in Medical Vision-Language Foundation Models via Multi-Scale Information Extraction Techniques*

Weijian Huang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Cheng Li (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Hong-Yu Zhou (Harvard University), Jiarun Liu (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Hao Yang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Yong Liang (Peng Cheng Laboratory), Guangming Shi (Xidian University), Hairong Zheng (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Shanshan Wang (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences)

219: Context-Aware Representation Learning for Hepatocellular Carcinoma Prognosis in Whole Slide Images*

Tang Luyu (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences), Wenjian Qin (Shenzhen Institutes of Advanced Technology)

446: Supervised diagnosis prediction from cortical sulci: toward the discovery of neurodevelopmental biomarkers in mental disorders*

Pierre Auriau (Neurospin), Antoine Grigis (Neurospin, CEA, Université Paris-Saclay), Benoit Dufumier (EPFL), Robin Louiset (NeuroSpin), Pietro Gori (Télécom Paris), Jean-François Mangin (Neurospin, CEA Saclay), Edouard Duchesnay (Paris-Saclay University)

529: The Importance of Model Inspection for Better Understanding Performance Characteristics of Graph Neural Networks*

Nairouz Shehata (Imperial College London), Carolina Piçarra (Imperial College London), Anees B Kazi (MGH, Harvard Medical School), Ben Glocker (Imperial College London)

797: ARIA: On the Interaction between Architectures, Initialization and Aggregation Methods for Federated Visual Classification*

Vasilis Siomos (City, University of London), Sergio Naval Marimont (City, University of London), Jonathan Passerat-Palmbach (Imperial College London / Flashbots), Giacomo Tarroni (City, University of London)

757: CLASSIFICATION OF BACTERIAL KERATITIS ACTIVITY WITH PATCH-BASED DEEP LEARNING USING THREE ANTERIOR SEGMENT IMAGES *

Sungho Jung (Samsung Medical Center), Yeokyoung Won (Samsung Medical Center), Won Seok Song (Samsung Medical Center), Ju Hwan Lee (Samsung Medical Center), Hakje Yoo (Samsung Medical Center), Dong Hui Lim (Samsung Medical Center)

120: Multi-scale Clinical-guided Binocular Fusion Framework for Predicting New-onset Hypertension over a Four-Year Period*

Haoshen Li (Peking University), Zifan Chen (Peking University), Jie Zhao (Peking University), Heyun Chen (Peking University), Hexin Dong (Peking University), Mingze Yuan (Peking University), Bin Dong (Peking University), Li Zhang (Peking University)

1500: COMPARISON ON THE EFFICACY OF IMAGE-BASED METHODS FOR ARRHYTHMIA DETECTION USING PPG SIGNALS

Jaewon Lee (Kyungpook National University), Miyoung Shin (Kyungpook National University)

1501: A LIGHTWEIGHT APPROACH FOR ELECTROCARDIOGRAM-BASED ARRHYTHMIA CLASSIFICATION USING BEAT SCORE MAPS
 Kyeong Hwan Lee (Kyungpook National University), Jaewon Lee (Kyungpook National University), Miyoung Shin (Kyungpook National University)

1583: Diagnosis of Aortic Valve Disease using Seismocardiography-derived Chest Acceleration Energy and Deep Learning
 Charilaos Apostolidis (Northwestern University), Mahmoud Ebrahimkhani (Northwestern University), Ethan Johnson (Northwestern University), Joshua Robinson (Lurie Children's Hospital of Chicago), Cynthia Rigsby (Lurie Children's Hospital of Chicago), Aparna Sodhi (Lurie Children's Hospital of Chicago), Bradley Allen (Northwestern University), Aggelos Katsaggelos (Northwestern University), Michael Markl

422: Unsupervised Airway Tree Clustering with Deep Learning: The Multi-Ethnic Study of Atherosclerosis (MESA) Lung Study*
 Sneha Naik (Columbia University), Elsa Angelini (Télécom Paris), R. Graham Barr (Columbia University Medical Center), Norrina Allen (Northwestern University), Alain Bertoni (Wake Forest University), Eric Hoffman (University of Iowa), Ani Manichaikul (University of Virginia), Jim Pankow (University of Minnesota), Wendy Post (Johns Hopkins University), Yifei Sun (Columbia University), Karol Watson (University of California, Los Angeles), Benjamin Smith (Columbia University Medical Center), Andrew Laine (Columbia University)

1338: TOWARD A DEEP LEARNING PREDICTION OF THE BIODISTRIBUTION OF RADIOACTIVITY IN SELECTIVE INTERNAL RADIOTHERAPY*

Ewan Morel-Corlu (Therenva), Antoine Petit (Therenva), Yan Rolland (LTSI), Florent Lalys (Therenva), Pascal Haigron (LTSI), Mireille Garreau (LTSI)

1183: Deep Image Priors for Magnetic Resonance Fingerprinting with pretrained Bloch-consistent denoising autoencoders*

Perla Mayo (University of Bristol), Matteo Cencini (INFN Pisa division), Ketan Fatania (University of Bath), Carolin Pirk (GE HealthCare), Marion Irene Menzel (Technische Hochschule Ingolstadt), Bjoern Menze (UZH), Michela Tosetti (IRCCS Stella Maris), Mohammad Golbabaei (University of Bristol)

1161: Human Blastocyst Image Generation using Generative Adversarial Networks*

Evangelos Tikas (Aristotle University of Thessaloniki), Lazaros Iliadis (Aristotle University of Thessaloniki), Sotirios Sotiroudis (Aristotle University of Thessaloniki), Achilleas Boursianis (Aristotle University of Thessaloniki), Konstantinos Kokkinidis (University of Macedonia), Achilleas Papatheodorou (Embryolab Fertility Clinic), Sotirios K Goudos (Aristotle University of Thessaloniki)

76: UNCERTAINTY-AWARE SINGLE VIEW VOLUMETRIC RENDERING FOR MEDICAL NEURAL RADIANCE FIELDS*

Jing Hu (Chengdu University of Information Technology), Qinrui Fan (Chengdu University of Information Technology), Shu Hu (Purdue University), Siwei Lyu (University at Buffalo), Xi Wu (Chengdu University of Information Technology), Xin Wang (University at Albany, SUNY)

1257: MEDiXNet: A Robust Mixture of Expert Dermatological Imaging Networks for Skin Lesion Segmentation*

Mohamed Lamine Allaoui (University of Quebec in Outaouais), Mohand Said Allili (Universite du Quebec en Outaouais)

1520: Weakly Supervised Intracranial Hemorrhage Segmentation in Non-Contrast Computed Tomography Imaging

Shreyas HR (Indian Institute of Science), Vaanathi Sundaresan (IISc Bangalore)

146: Multi-modal Intermediate Feature Interaction AutoEncoder for Overall Survival Prediction of Esophageal Squamous Cell Cancer*

Chengyu Wu (Shandong University), Yatao Zhang (Shandong University), Yaqi Wang (Communication University of Zhejiang), Qifeng Wang (University of Electronic Science and Technology of China), Shuai Wang (Hangzhou Dianzi University)

655: HYPOXIC ISCHEMIC ENCEPHALOPATHY SEVERITY GRADING USING MULTIMODAL SWIN TRANSFORMER*

Thibaud Brochet (LITIS, University of Rouen), Su o Ruan (Laboratoire LITIS), Jérôme Lapuyade-Lahorgue (LITIS-Quantif), Kangfu Han (Southern Medical University), Jiale Cheng (University of North Carolina at Chapel Hill), Fengjiang Zhao (DAMO Academy, Alibaba Group), Yi-Fang Tu (National Cheng Kung University Hospital), sheng-Che Hung (University of North Carolina at Chapel Hill), Gang Li (University of North Carolina at Chapel Hill)

563: FST-Net: Facial Soft Tissue Landmark Localization on 3dMD Scans Using Feature Fusion and Local Coordinate Regression*

Zhidong He (Southeast University), Han Bao (Nanjing Medical University), Mingzhang Chen (Southeast University), Jiasong Wu (Southeast University), Luwei Liu (Nanjing Medical University), Lotfi Senhadji (Univ Rennes), Huazhong Shu (Southeast University), Bin Yan (Nanjing Medical University)

510: Differentiable VQ-VAE's for Robust White Matter Streamline Encodings*

Andrew Lizaraga (UCLA), Brandon Taraku (UCLA), Edouardo Honig (UCLA), Ying Nian Wu (University of California, Los Angeles), Shantanu H Joshi (UCLA)

407: Learning Cortical Anomaly through Masked Encoding for Unsupervised Heterogeneity Mapping*

Hao-Chun Yang (University of Tübingen), Ole Andreassen (Norwegian Centre for Mental Disorders Research, Division of Mental Health and Addiction), Lars Tjelta Westlye (Norwegian Centre for Mental Disorders Research, Division of Mental Health and Addiction), Andre F. Marquand (Donders Institute for Brain, Cognition, and Behaviour, Radboud University), Christian F. Beckmann (Donders Institute for Brain, Cognition, and Behaviour, Radboud University), Thomas Wolfers (University of Tübingen)

960: QUANTIFYING UNCERTAINTY IN KNEE OSTEOARTHRITIS DIAGNOSIS*

Mame Diarra Fall (University of Orleans)

756: JOINT OPTIMIZATION OF K-SPACE SAMPLING AND RECONSTRUCTION FOR MULTI-CONTRAST MRI*

Jianing Geng (ShanghaiTech University), Zijian Zhou (ShanghaiTech University), Haikun Qi (ShanghaiTech University), Peng Hu (ShanghaiTech University)

1454: Impact of CT Acquisition Parameters on the Performance of Radiomic Systems for Lung Cancer Diagnosis

Debora Gil (Computer Vision Center), Guillermo Eduardo Torres (Computer Vision Center, Universidad Autónoma de Barcelona), Antoni Rosell Gratacós (Germans Trias i Pujol Hospital (HUGTiP)), Sonia Baeza Mena (Germans Trias i Pujol Hospital (HUGTiP)), Carles Sanchez (Computer Vision Center)

552: SSL-ENSAM: Utilizing SAM for Semi-Supervised Retinal Vessel Segmentation with Quality-Aware Enhancement*

Mengxian He (The Johns Hopkins University), Minqing Zhang (The Chinese University of Hong Kong), Hing Lam CHANG (The Chinese University of Hong Kong), Xiaoyi Feng (CUHK), Mengdi Gao (CUHK), Shuai Jiang (Intelligent Vision Plus Technology Co., LTD.), Wu Yuan (The Chinese University of Hong Kong)

272: Learning Semantic Image Quality for Fetal Ultrasound from Noisy Ranking Annotation*

Manxi Lin (Technical University of Denmark), Jakob Ambsdorf (University of Copenhagen), Emilie Pi Fogtmann Sejer (Copenhagen Academy of Medical Education and Simulation (CAMES)), Zahra Bashir (Copenhagen Academy of Medical Education and Simulation (CAMES)), Chun Kit Wong (Technical University of Denmark), Paraskevas Pegios (Technical University of Denmark), Alberto Raheli (Technical University of Denmark), Morten Bo Søndergaard Svendsen (Copenhagen Academy of Medical Education and Simulation (CAMES)), Mads Nielsen (University of Copenhagen), Martin G Tolsgaard (CAMES RH), Anders N Christensen (Technical University of Denmark), Aasa Feragen (Technical University of Denmark)

80: LOCAL SPATIAL ATTENTION TRANSFORMER FOR SPARSE PHOTOACOUSTIC IMAGE RECONSTRUCTION WITH HIGH SPARSITY*

Chi Kwan Chan (Hong Kong University of Science and Technology), Lulin Shi (The Hong Kong University of Science and Technology), Bingxin Huang (The Hong Kong University of Science and Technology), Tszi Wai Wong (The Hong Kong University of Science and Technology)

995: FAST 3D SAM: CRAFTING LARGE VISION MODELS FOR 3D MEDICAL IMAGE SEGMENTATION VIA TOKEN CLUSTERING AND FINE-TUNING*

Zhongfei Qing (University of Chinese Academy of Sciences), Yan Liu (University of Chinese Academy of Sciences), Qian Xu (Huabei Petroleum General Hospital), Haiyan Li (Huabei Petroleum General Hospital)

512: BCFNet: Boundary-guided Semantic Cross Fusion for Polyp Segmentation*

Tianyu Hu (North China University of Technology), Yong Qi (North China University of Technology, NCUT), Huafeng Wang (North China University of Technology and Beijing University), Yanqing Wang (People's Hospital, Changzhi, Shanxi), Longzhen Wang (Second People's Hospital, Changzhi, Shanxi), Minghua Du (PLA General Hospital, Beijing), Xinyu Xiong (Sun Yat-Sen University)

528: GlomNet: A HoVer Deep Learning Model for Glomerulus Instance Segmentation*

Noémie Moreau (Center for Molecular Medicine Cologne, Faculty of Medicine and University Hospital Cologne, University of Cologne), Michelle Shabani (Institute of Surgical Pathology, Medical Center, Faculty of Medicine, University of Freiburg), Christoph Schell (Institute of Surgical Pathology, Medical Center, Faculty of Medicine, University of Freiburg), Katarzyna Bozek (University of Cologne)

132: Self-supervised pre-training based on Contrastive Complementary Masking for semi-supervised cardiac image segmentation*

Yubo Zhou (University of Electronic Science and Technology of China), Ran Gu (University of Electronic Science and Technology of China), Shaoting Zhang (Shanghai AI Lab), Guotai Wang (University of Electronic Science and Technology of China)

414: Deep Neural Networks Comparison for MRI Segmentation of the Brainstem*

Seoyoung Oh (Sorbonne Université), Mélanie Péligrini-Issac (Sorbonne Université, Inserm, CNRS, Laboratoire d'Imagerie Biomédicale, LIB), Hélène Urien (Institut Supérieur d'Électronique de Paris (ISEP)), Véronique Marchand-Pauvert (Sorbonne Université, Inserm, CNRS, Laboratoire d'Imagerie Biomédicale, LIB), Jérémie Sublime (ISEP)

1168: Mean Shift Clustering as a Loss Function for Accurate and Segmentation-Aware Localization of Macromolecules in Cryo-electron Tomography*

Lorenz Lamm (Helmholtz Munich), Ricardo D. Righetto (University of Basel), Tingying Peng (Helmholtz AI)

61: FDNet: Frequency Domain Denoising Network For Cell Segmentation in Astrocytes Derived From Induced Pluripotent Stem Cells*

Haoran Li (University of Wollongong), Jiahua Shi (The University of Queensland), Huaming Chen (The University of Sydney), Bo Du (Griffith University), Simon Maksour (University of Wollongong), Gabrielle Phillips (University of Wollongong), Mirella Dottori (University of Wollongong), Jun Shen (University of Wollongong)

634: Automatic Measurement of Joint Space Width from Hand Radiographs using Deep Learning Models*

Hetali Chavda (Pace University), Juan Shan (Pace University), Ming Zhang (Department of Computer Science & Networking), Raj Ponnusamy (Pace University), Yue Wang (Pace University), Carmine T Guida (Pace University)

990: Deep Learning Assisted Phase Recognition in Endoscopic Third Ventriculostomy Procedures*

Agastya Thoppur (IIIT Bangalore), Madhav Rao (International Institute of Information Technology, Bangalore), Pon Deepika P (International Institute of Information Technology Bangalore), Vikas Vazhayil (National Institute of Mental Health & Neuro Science), Madamanchi Prudhvi (National Institute of Mental Health & Neuro Science)

75: An Ordinal Diffusion Model for Generating Medical Images with Different Severity Levels*

Shumpei Takezaki (Kyushu University), Seiichi Uchida (Kyushu University)

235: ULTRA LOW-FIELD TO HIGH-FIELD MRI TRANSLATION USING ADVERSARIAL DIFFUSION*

Sanuwani U. Dayarathna (Monash University), Kh Tohidul Islam (Monash University), Zhaolin Chen (Monash University)

426: Unsupervised Physics-Inspired Deep Learning Network with Application to Dental Computed Tomography Image Restoration*

Sayantan Dutta (Department of Radiology, Weill Cornell Medicine), Bertrand Georgeot (Laboratoire de Physique Théorique, Université de Toulouse, CNRS, UPS), Jerome Michetti (Institut de Recherche en Informatique de Toulouse, UMR CNRS 5505, Université de Toulouse), Adrian Basarab (CREATIS-LRMN), Denis Kouame (IRIT)

1509: DEEP LEARNING-BASED MOTION PHASE CLASSIFICATION FOR MICRO-CT RESPIRATORY CORRECTION

Xuexue Zhang (School of Life Science and Technology, Xidian University & Engineering Research Center of Molecular and Neuro Imaging, Ministry of Education), Zujian Huang (School of Life Science and Technology, Xidian University & Engineering Research Center of Molecular and Neuro Imaging, Ministry of Education), Yali Zhang (National Resource Center for Non-Human Primates, Kunming Primate Research Center, and National Research Facility for Phenotypic & Genetic Analysis of Model Animals (Primate Facility)), Yanyun Liu (School of Life Science and Technology, Xidian University & Engineering Research Center of Molecular and Neuro Imaging, Ministry of Education), Bo Wen (School of Life Science and Technology, Xidian University & Engineering Research Center of Molecular and Neuro Imaging, Ministry of Education), Xiaoyi Liu (School of Life Science and Technology, Xidian University & Engineering Research Center of Molecular and Neuro Imaging, Ministry of Education), Xiaomei Yu (National Resource Center for Non-Human Primates, Kunming Primate Research Center, and National Research Facility for Phenotypic & Genetic Analysis of Model Animals (Primate Facility)), Hui Hui (Institute of Automation, Chinese Academy of Sciences), Jie Tian, Shouping Zhu (Xidian University)

66: Neuro-GPT: Towards A Foundation Model for EEG*

Wenhui Cui (University of Southern California), Woojae Jeong (University of Southern California), Philipp Thölke (Osnabrück University), Takfarinas Medani (University of Southern California), Karim Jerbi (University of Montreal), Anand Joshi (University of Southern California), Richard Leahy (Signal and Image Processing Institute at University of Southern California)

243: Polyp Size Estimation by Generalizing Metric Depth Estimation and Monocular 3D Reconstruction*

Sijia Du (Shanghai Jiao Tong University), Qingwei Zhang (Shanghai Jiao Tong University), Zhengjie Zhang (Shanghai Jiao Tong University), Crystal Cai (Shanghai Jiao Tong University), Xiaobo Li (Shanghai Jiao Tong University), Dahong Qian (Shanghai Jiao Tong University)

169: SPEVA: Stiffness Prediction from Environmental Visual Variation for Autonomous Robot-Assisted Soft Tissue Manipulation*

Jie Wang (Tsinghua University), Xu Lu (Tsinghua University), Yihua Sun (Tsinghua University), Hee Guan Khor (Tsinghua University), Xueling Wei (Tsinghua University), Guochen Ning (Tsinghua University), Longfei Ma (Tsinghua University), Hongen Liao (Tsinghua University)

1546: COMPARISON OF STATE-OF-THE-ART MODELS FOR SLIDE-LEVEL PEDIATRIC BRAIN TUMOUR HISTOLOGY CLASSIFICATION: CLAM & HIPT

Christoforos Spyretos (Linköping University), neda haj-hosseini (Linköping University), Iulian E Tampu (Linkoping University)

749: Deep Learning Enables Reduced Gadolinium Dose for Contrast-Enhanced Blood-Brain Barrier Opening Quantitative Measurement*

Pin-Yu Lee (Columbia University), Shubh Parag Mehta (Columbia University), Anurag Sharma (Columbia University), Hong-Jian Wei (Columbia University Irving Medical Center), Antonios Pouliopoulos (Columbia University), Yanting Yang (Columbia University), Chenghao Zhang (Columbia University), Andrew Laine (Columbia University), Elisa Konofagou (Columbia), Cheng-Chia Wu (Columbia University Irving Medical Center), Jia Guo (Columbia University)

667: SEQ-ALIGN: Self-supervised image representation learning from multi-sequence MRI*

Thibault Sauron (Université Paris Cité), Camille Kurtz (Université Paris Cité), Florence Cloppet (Université Paris Cité), Carole Lazarus (Philips), Laure Fournier (APHP)

1487: CLASSIFICATION OF IDH MUTATION STATUS USING MR IMAGES AND DEEP LEARNING

Chandan Ganesh Bangalore Yogananda (University of Texas Southwestern Medical Center), Ben Wagner (UT Southwestern Medical Center), Nghi Truong (UT Southwestern medical center), James M Holcomb (Southwestern Med Center), Divya Reddy (UT Southwestern medical center), Niloufar Saadat (UT Southwester Medical Center), Kimmo Hatanpaa (UT Southwestern Medical Center), Toral Patel (UT Southwestern medical center), Baowei Fei (University of Texas at Dallas), Matthew Lee (NewYork University), Rajan Jain (NewYork University), Richard Bruce (University of Wisconsin Madison), Marco Pinho (UT Southwestern medical center), Ananth Madhuranthakam (Wake Forest School of Medicine), Joseph Maldjian (UT Southwestern Medical Center)

1488: BRAIN TUMOR CHARACTERISTICS FOR CLASSIFYING IDH MUTATION STATUS - A DEEP LEARNING STUDY

Chandan Ganesh Bangalore Yogananda (University of Texas Southwestern Medical Center), Ben Wagner (UT Southwestern Medical Center), Nghi Truong (UT Southwestern Medical Center), James M Holcomb (Southwestern Medical Center), Divya Reddy (UT Southwestern Medical Center), Niloufar Saadat (UT Southwestern Medical Center), Kimmo Hatanpaa (UT Southwestern Medical Center), Toral Patel (UT Southwestern medical center), Baowei Fei (University of Texas at Dallas), Matthew Lee (New York University), Rajan Jain (New York University), Richard Bruce (University of Wisconsin Madison), Marco Pinho (UT Southwestern medical center), Ananth Madhuranthakam (Wake Forest School of Medicine), Joseph Maldjian (UT Southwestern Medical Center)

1493: BEYOND U-NET: INTEGRATING CONVNEXT BLOCKS AND CBAM INTO U-NET FOR MEDICAL IMAGE SEGMENTATION

Jonas Waibel (University of Augsburg), Dennis Hartmann (University of Augsburg), Dominik Müller (University Augsburg), Frank Kramer (University of Augsburg)

1052: Mo2E: Mixture of Two Experts for Class-Imbalanced Learning from Medical Images*

Faizanuddin Ansari (Indian Statistical Institute), Agnish Bhattacharya (Jadavpur University), Biswajit Saha (Jadavpur University), Swagatam Das (Indian Statistical Institute)

252: Medical Image Retrieval Using Pretrained Embeddings*

Farnaz Khun Jush (Bayer AG), Tuan Truong (Bayer AG), Steffen Vogler (Bayer AG), Matthias Lenga (Bayer AG)

1166: Fitting Skeletal Models via Graph-based Learning*

Nicolás Gaggion (CONICET / Universidad Nacional del Litoral), Enzo Ferrante (CONICET / Universidad Nacional del Litoral), Beatriz Paniagua (Kitware), Jared Vicory (Kitware)

1482: Transfer Learning Versus Engineered Features in Predicting Response to Neoadjuvant Therapy with MRI in Breast Cancer Patients

Kanika Bhalla (Washington University in St Louis), Jose M Luna (Mallinckrodt Institute of Radiology, Washington University School of Medicine in St. Louis), Tabassum Ahmad (Washington University School of Medicine in St. Louis), Debbie Bennett (Washington University School of Medicine in St. Louis), Aimilia Gastounioti (Washington University)

437: 3D Shape Correspondence for Medical Applications Using Neural Descriptor Fields*

Dingjie Su (Vanderbilt University), Yubo Fan (Vanderbilt University), Yike Zhang (Vanderbilt University), Benoit Dawant (Vanderbilt)

1462: Deep-learning-based spectral motion artifact correction for cardiac CT: evaluation on clinical photon-counting CT images

Ruihan Huang (KTH Royal Institute of Technology), Karin Larsson (KTH Royal Institute of Technology), Mats Persson (KTH Royal Institute of Technology)

694: Graph Neural network based future clinical events prediction from invasive coronary angiography

Xiaowu Sun (EPFL), Theofilos Belmpas (EPFL), Ortal Senouf (École Polytechnique Fédérale de Lausanne (EPFL)), Emmanuel Abbe (EPFL), Pascal Frossard (EPFL), Bernard De Bruyne (OLV Hospital), Olivier Muller (CHUV), Stephane Fournier (CHUV), Thabo Mahendiran (CHUV), Dorina Thanou (EPFL)

1014: Graph Neural network based future clinical events prediction from invasive coronary angiography

Anbo Cao (Shenzhen Technology University), Pin-Yu Lee (Columbia University), Zhonghui Qie (Columbia University), Yingwei Guo (Northeast Petroleum University), Asim Zaman (Shenzhen University), Jiaxi Lu (shenzhen technology university), Xueqiang Zeng (SJTU), Huihui Yang (Shenzhen Technology University), Xiaoqiang Miao (Northeastern University), Taiyu Han (Shenzhen Technology University), Guangtao Huang (Shenzhen Technology University), Yu Luo (Shanghai Fourth People's Hospital Affiliated to Tongji University School of Medicine), Yan Kang (Shenzhen Technology University); Haseeb Hassan (Shenzhen Technology University), Jia Guo (Columbia University)

197: Explainable Dementia Prediction Using Functional Neuroimages and Risk Factors

Zhuoyu Shi (University of North Carolina at Chapel Hill), Tingting Dan (University of North Carolina at Chapel Hill), Patrick Smith (University of North Carolina at Chapel Hill), Guorong Wu (UNC-CH)

Poster Session 4: Thursday, May 30

Topic: Machine learning methods, including Pattern recognition and classification, Computational Imaging

09:30 – 11:00

Banqueting Hall Foyer

Chairs: Sotirios Goudos (Aristotle University of Thessaloniki), Emilie Chouzenoux (Inria Saclay)

*Note: * Denotes 4-Page Paper Submission*

410: MOTION CLASSIFICATION BASED ON GEOMETRICAL FEATURES OF TRAJECTORIES*

Matheus Santos Sano (Institut Pasteur), Anne Brelo (Institut Pasteur), Jean-Christophe Olivo-Marin (Institut Pasteur), Thibault Lagache (Institut Pasteur, Paris), Giacomo Nardi (Institut Pasteur)

651: Riemannian Prediction of Anatomical Diagnoses in Congenital Heart Disease based on 12-lead ECGs*

Muhammet Alkan (University of Glasgow), Fani Deligianni (University of Glasgow), Gruschen Veldtman (Golden Jubilee National Hospital)

112: A Precise, Power-Efficient, Analog-Hardware Edge Detector for Biomedical Imaging*

Vassilis Alimisis (National Technical University of Athens), Argyro Kamperi (National Technical University of Athens), Georgios Gennis (National Technical University of Athens), Paul P. Sotiriadis (National Technical University of Athens)

733: Interpretable Models for Detecting and Monitoring Elevated Intracranial Pressure*

Darryl Hannan (Drexel University), Steven C Nesbit (Drexel University), Ximing Wen (Drexel University), Glen Smith (Georgia Institute of Technology), Qiao Zhang (Georgia Institute of Technology), Alberto Goffi (University of Toronto), Vincent Chan (University of Toronto), Michael J. Morris (Brooke Army Medical Center), John C. Hunninghake (Brooke Army Medical Center), Nicholas E. Villalobos (Brooke Army Medical Center), Edward Kim (Drexel University), Rosina Weber (Drexel University), Christopher J. MacLellan (Georgia Institute of Technology)

941: BIOINTEL: Real-Time Bacteria Identification Using Microscopy Imaging*

Jinane Mounsef (RIT Dubai), Hariharan Ramesh (RIT Dubai), Abdelrahman Elshinawy (RIT Dubai), Ahmed Ahmed (RIT Dubai), Mohammed Adnan Kassoumeh (RIT Dubai), Muhammad Khan (RIT Dubai)

1422: Federated learning enables big data for rare cancer boundary detection: A Summary

Akis Linardos (Indiana University), Sarthak Pati (Indiana University), Ujjwal Baid (IU SOM), Brandon Edwards (Intel Corporation), Micah J Sheller (Intel Corporation), Spyridon Bakas (Indiana University)

1365: MACHINE LEARNING-BASED WHOLE GLAND RADIOMICS ANALYSIS FOR PROSTATE CANCER CLASSIFICATION *

Dimitrios Filos (Aristotle University of Thessaloniki), Dimitris Mr. Fotopoulos (Aristotle University of Thessaloniki), Maria Anastasia Rouni (Aristotle University of Thessaloniki), Ioanna Chouvarda (Aristotle University of Thessaloniki)

348: Enhancing Contrastive Training for Semi-supervised Chest X-ray Analysis through Gaussian Mixture Models*

Phuong Quynh Le (University of Duisburg-Essen), Jens Kleesiek (Institute for AI in Medicine (IKIM), University Hospital Essen), Constantin Marc Seibold (University Clinic Essen)

1127: INSITE: LABELLING MEDICAL IMAGES USING SUBMODULAR FUNCTIONS AND SEMI-SUPERVISED DATA PROGRAMMING*

Akshit Gautam (Indian Institute of Technology, Bombay), Anurag K Shandilya (IIT Bombay), Akshit Srivastava (Indian Institute of Technology, Bombay), Venkatapathy Subramanian (IITB), Ganesh Ramakrishnan (IIT Bombay), Kshitij S Jadhav (Indian Institute of Technology, Bombay)

991: PREDICTION OF CELLULAR IDENTITIES FROM TRAJECTORY AND CELL FATE INFORMATION*

Baiyang Dai (University of Chicago), Jiamin Yang (University of Chicago), Hari Shroff (Janelia Research Campus, Howard Hughes Medical Institute (HHMI)), Patrick La Riviere (University of Chicago)

1109: Heterogeneous Graph Neural Networks for analysing spatio-temporal cell surface dynamics*

Edward Offord (University of Warwick), Judith Lutton (University of Warwick), Till Bretschneider (University of Warwick)

379: PATHOLOGICAL PRIMITIVE SEGMENTATION BASED ON VISUAL FOUNDATION MODEL WITH ZERO-SHOT MASK GENERATION*

Abu Bakor Hayat Arnob (Nanjing University of Information Science and Technology), Xiangxue Wang (Nanjing University of Information Science and Technology), Yiping Jiao (Nanjing University of Information Science and Technology), Xiao Gan (Nanjing University of Information Science and Technology), Wenlong Ming (Nanjing University of Information Science and Technology), Jun Xu (Nanjing University of Information Science and Technology)

943: BAG-OF-WORDS ALGORITHM TO PREDICT RESPONSE TO TREATMENT IN GIST TUMORS USING CT SCANS*

Debora Cafaro, Valentina Giannini (University of Turin), Giovanni Cappello (Candiolo Cancer Institute IRCCS), Roberto Cannella (Università degli Studi di Palermo), Tommaso Vincenzo Bartolotta (Università degli Studi di Palermo), Giovanni Grignani (Candiolo Cancer Institute IRCCS), Alessandra Merlini (Candiolo Cancer Institute IRCCS), Daniele Regge (University of Turin)

782: Image-to-Tree with Recursive Prompting*

James Batten (Imperial College London), Matthew D M Sinclair (HeartFlow, Inc.), Ying Bai (Heartflow), Ben Glocker (Imperial College London), Michiel Schaap (HeartFlow)

645: TWO-STAGE IMPLICIT REPRESENTATION RECONSTRUCTION WITH ITERATIVE REGISTRATION AND DOUBLE-CHANNEL ENCODER FOR FETAL MRI*

Lv Yao (South China University of Technology), Junpeng Tan (South China University of Technology), Shengxian Chen (South China University of Technology), Xin Zhang (South China University of Technology), He Zhang (Fudan University), Chaoxiang Yang (Guangdong Women and Children Hospital), WenJun Chen (Guangdong Women and Children Hospital)

1041: A SCOPING REVIEW ON QUANTIZATION METHODS FOR MEDICAL IMAGING AI*

Atika Rahman Paddo (Indiana University - Purdue University Indianapolis), Ria Tressa Raju (Indiana University), Judy Wawira (Emory Radiology), Saptarshi Purkayastha (Indiana University - Purdue University Indianapolis)

1248: Zero-Shot Novel View Synthesis of Wrist X-Rays using Latent Diffusion Model*

Jayanth S Pratap (Massachusetts General Hospital and Harvard Medical School), Siyeop Yoon (Massachusetts General Hospital and Harvard Medical School), Wen-Chih Liu (Harvard Medical School), Quanzheng Li (Massachusetts General Hospital and Harvard Medical School), Abhiram Bhashyam (Massachusetts General Hospital and Harvard Medical School), Neal Chen (Massachusetts General Hospital and Harvard Medical School), Xiang Li (Massachusetts General Hospital and Harvard Medical School)

484: Brain Image Synthesis Using Incomplete Multimodal Data*

Yanfu Zhang (William and Mary), Runxue Bao (University of Pittsburgh), Guodong Liu (University of Pittsburgh), Liang Zhan (University of Pittsburgh), Paul Thompson (Imaging Genetics Center), Heng Huang (University of Maryland at College Park)

267: Weakly supervised localisation of prostate cancer using reinforcement learning for bi-parametric MR images*

Martynas Pocius (University College London), Wen Yan (University College London, City University of Hong Kong), Dean C Barratt (University College London), Mark Emberton (University College London), Matthew J Clarkson (University College London), Yipeng Hu (University College London), Shaheer Ullah Saeed (University College London)

1579: IMPROVING THE PRECISION OF BRAIN AGE GAP ESTIMATION MODELS WITH THE INCORPORATION OF GENETIC

INFORMATION USING THE UK BIOBANK

Aashka D Mohite (University of Calgary), Karen Ardila (University of Calgary), Pattarawut Charatpangoon (University of Calgary), Emily Munro (University of Calgary), Quan Long (University of Calgary), Charlotte Curtis (Mount Royal University), M. Ethan MacDonald (University of Calgary)

1058: Denoising Diffusion Probabilistic Models for Image Inpainting of Cell Distributions in the Human Brain*

Jan-Oliver Kropp (Forschungszentrum Jülich), Christian Schiffer (Forschungszentrum Jülich), Katrin Amunts (Forschungszentrum Jülich), Timo Dickscheid (Forschungszentrum Jülich)

256: A Bayesian Group Sparse Canonical Correlation Analysis Method for Brain Imaging Genomics*

Huiyun Guo (Northwestern Polytechnical University), Minjianan Zhang (Northwestern Polytechnical University), Lei Du (Northwestern Polytechnical University)

149: Learning Subjective Image Quality Assessment for Transvaginal Ultrasound Scans from Multi-Annotator Labels*

Daniel Petashvili (The University of Adelaide), Hu Wang (the University of Adelaide), Alison Deslandes (University of Adelaide), Jodie C Avery (University of Adelaide), George Condous (Sydney Medical School Nepean, University of Sydney), Gustavo Carneiro (University of Surrey), Mary L Hull (University of Adelaide), Hsiang-Ting Chen (University of Adelaide)

238: Learning the irreversible progression trajectory of Alzheimer's disease*

Yipei Wang (Purdue University), Bing He (Indiana University), Shannon Risacher (Indiana University), Andrew Saykin (Indiana University), Jingwen Yan (Indiana University), Xiaoqian Wang (Purdue University)

842: MEDISURE: Towards Assuring Machine Learning-based Medical Image Classifiers using Mixup Boundary Analysis*

Adam Byfield (NHS England), William Poulett (NHS England), Ben Wallace (NHS England), Anusha Jose (NHS England), Shatakshi Tyagi (NHS England), Smita Shembekar (NHS England), Adnan Qayyum (Information Technology University of the Punjab, Lahore, Pakistan), Junaid Qadir (Qatar University), MUHAMMAD BILAL (Birmingham City University)

1082: FastGPR: Divide-and-Conquer Technique in Neuroimaging Data Shortens Training Time and Improves Accuracy *

Federico Raimondo (Forschungszentrum Jülich), Georgios Antonopoulos (Forschung Zentrum Juelich), Simon Eickhoff (Heinrich Heine University), Kaustubh Patil (Institute of Neuroscience and Medicine, Brain & Behaviour (INM-7), Research Centre Jülich)

1199: Characterisation of Anti-Arrhythmic Drug Effects on Cardiac Electrophysiology using Physics-Informed Neural Networks*

Ching-En Chiu (Imperial College London), Arieih Levy (Imperial College London), Rasheda Chowdhury (Imperial College London), Kim Christensen (Imperial College London), Marta Varela (Imperial College London)

1160: Radiomics-based Reliable Predictions of Side Effects after Radiotherapy for Prostate Cancer*

Giulio Del Corso (ISTI-CNR), Eva Pachetti (Institute of Information Science and Technologies of the National Research Council of Italy), Rossana Buongiorno (Institute of Information Science and Technologies of the National Research Council of Italy), Danila Germanese (Institute of Information Science and Technologies of the National Research Council of Italy), Maria Antonietta Pascali (Institute of Information Science and Technologies of the National Research Council of Italy), Ana Carolina Rodrigues (Champalimaud Foundation), José Almeida (Champalimaud Foundation, Centre for the Unknown), Nuno M. Miguel Rodrigues (LASIGE), Manolis Tsiknakis (Foundation for Research and Technology Hellas, Institute of Computer Science), Kostas Marias (Foundation for Research and Technology Hellas, Institute of Computer Science), Nickolas Papanikolaou (Champalimaud Foundation), Daniele Regge (Department of Radiology, Candiolo Cancer Institute), Sara Colantonio (Institute of Information Science and Technologies of the National Research Council of Italy)

1557: How to Evaluate Machine Learning in Medical Imaging? A Case Study on Renal Scintigraphy

Moesio W. da Silva Filho (Federal Rural University of Pernambuco (UFRPE)), Hyan Batista (Federal Rural University of Pernambuco (UFRPE)), Gabriel A. Barbosa (Federal Rural University of Pernambuco (UFRPE)), Katerina Mangaroska (University of South-Eastern Norway (USN)), Boban Vesin (University of South-Eastern Norway (USN))

457: RadPleura: a Radiomics-based Framework for Lung Pleura Classification in Histology Images from Interstitial Lung Diseases*

Oscar C Linares (University of Campinas), Ivar Vargas Belizario (University of Sao Paulo), Agma Juci J Machado Traina (University of Sao Paulo), Sabrina Batah (University of Sao Paulo), Alexandre Fabro (University of Sao Paulo), Bernd Hamann (University of California), Paulo Azevedo-Marques (University of Sao Paulo)

1061: An Intelligent Approach For Continues Pain Intensity Prediction*

Hassan Al-Radhi (OVGU), Ayoub Al-Hamadi (University of Magdeburg), Laslo Dinges (University of Magdeburg), Marc-André Fiedler (Otto-von-Guericke-University Magdeburg)

360: Hierarchical Window Attention for Motor Imagery EEG Classification*

Haonan Mou (Beijing Normal University), Wenting Yang (Beijing Normal University), Shihao Zhang (Beijing Normal University), Zhaodi Pei (Beijing Normal University), Ziyu Li (Beijing Normal University), Xia Wu (Beijing Institute of Technology)

1067: Particle Detection based on Few Shot Learning in 3D Fluorescence Microscopy*

Luc Vedrenne (ICube), Etienne Baudrier (University of Strasbourg), Denis Fortun (CNRS, ICube, University of Strasbourg)

441: A Degradation-Robust Deep Learning Framework for MRI Brain Tumor Diagnosis*

Ricardo Bauchspies (Universidade de Brasília), Mylene Farias (Texas State University)

1410: Classification of Infant Comfort through Image Processing

Valentina Brino (Università degli Studi di Padova), Edoardo Passarotto (Università degli Studi di Padova), Ivan Tomasi (L'Inglesina Baby Spa), Stefano Masiero (Università degli Studi di Padova), Maria Rubega (Università degli Studi di Padova)

974: Classification of pulmonary embolism on computed tomography angiography using artificial intelligence*

Luan O Silva (Hospital Israelita Albert Einstein), Maria Silva (Hospital Israelita Albert Einstein), Guilherme Ribeiro (Hospital Israelita Albert Einstein), Thiago Camargo (Hospital Israelita Albert Einstein), Paulo Santos (Hospital Israelita Albert Einstein), Giovanna Mendes (Hospital Israelita Albert Einstein), Joselisa PQ de Paiva (Hospital Israelita Albert Einstein), Wesley Calixto (Universidade Federal de Goiás), Letícia Rittner (University of Campinas), Rafael Loureiro (Hospital Israelita Albert Einstein), Marcio Rodrigues Reis (IFG), Anderson S Soares (Universidade Federal de Goiás)

1567: DeepMIIC: A Deep-Learning-Based Framework for Whole-Slide Multiplex Immunofluorescence Image Classification

Priyanka Rana (Macquarie University), Tuba Nur Gide (Melanoma Institute Australia, The University of Sydney), Nurudeen Adegoke (Melanoma Institute Australia, The University of Sydney), Yizhe Mao (Melanoma Institute Australia, The University of Sydney), Georgina V. Long (Melanoma Institute Australia, The University of Sydney), Richard A Scolyer (Melanoma Institute Australia, The University of Sydney), James Wilmott (Melanoma Institute Australia, The University of Sydney), Shlomo Berkovsky (Australian Institute of Health Innovation, Macquarie University), Enrico Coiera (Australian Institute of Health Innovation, Macquarie University), Sidong Liu (Australian Institute of Health Innovation, Macquarie University)

192: Security-Preserving Federated Learning via Byzantine-Sensitive Triplet Distance*

Youngjoon Lee (Korea Institute for Defense Analyses), Sangwoo Park (King's College London), Joonhyuk Kang (KAIST)

972: Super-resolution Ultrasound Imaging via Unpaired Training with the Model-Informed CycleGAN Algorithm*

Vassili Pustovalov (IRIT Laboratory), Duong Hung Pham (IRIT), Denis Kouame (IRIT)

1038: StitchPro for computational pathology stitching in patients with prostate cancer*

Ana Castro Verde (Champalimaud Foundation), José Almeida (Champalimaud Foundation), Jorge Fonseca (Champalimaud Foundation), Celso Matos (Champalimaud Foundation), Raquel Conceição (Faculdade de Ciências da Universidade de Lisboa), Nickolas Papanikolaou (Champalimaud Foundation)

714: Impact of regularization on achieved resolution in 3D tunable structured illumination microscopy (TSIM)*

Arash Atibi (The University of Memphis), Abdulaziz Alqahtani (The University of Memphis), Mohammed Younis (The University of Memphis), Chrysanthe Preza (The University of Memphis)

418: MEMORY-EFFICIENT DEEP END-TO-END POSTERIOR NETWORK (DEEPEN) FOR INVERSE PROBLEMS*

Jyothi Rikhab Chand (University of Iowa), Mathews Jacob (University of Iowa)

882: Optomechanical modulation tomography for ungated compressive cardiac light sheet microscopy*

François Marelli (UMONS), Michael Liebling (IDIAP Research Institute)

876: HANKEL-BASED SPECTRAL METHOD FOR QUANTITATIVE ACOUSTIC MICROSCOPY*

Lorena Leon (University of Lyon), Jonathan Mamou (Weill Cornell Medicine), Denis Kouame (IRIT), Adrian Basarab (CREATIS-LRMN)

Poster Session 4: Thursday, May 30

Topic: Medical image analysis and applications

09:30 – 11:00

Banqueting Hall Foyer

Chairs: Sotirios Goudos (Aristotle University of Thessaloniki), Emilie Chouzenoux (Inria Saclay)

*Note: * Denotes 4-Page Paper Submission*

164: Towards Cross-Domain Single Blood Cell Image Classification via Large-Scale LoRA-based Segment Anything Model*

Lingcong Cai (Shenzhen Technology University), yongcheng Li (Shenzhen Technology University), Ying Lu (The Third Affiliated Hospital of Sun Yat-sen University), Yupeng Zhang (South China Normal University), Jingyan Jiang (Shenzhen Technology University), Genan Dai (Shenzhen Technology University), Bowen Zhang (Shenzhen Technology University), Jingzhou Cao (Shenzhen Technology University), Zhongxiang Zhang (The Third Affiliated Hospital of Sun Yat-sen University), Xiaomao Fan (Shenzhen Technology University)

1471: YOLOv7-Based Transfer Learning in Urinary Sediment Detection

Yano Yuri (Osaka University), Komori Tatsuki (Osaka University), Hiroki Nishikawa (Osaka University), Ittetsu Taniguchi (Osaka University), Takao Onoye (Osaka University)

1472: Pseudo-Labeling Data Augmentation for Urinary Sediments Classification

Naoya Oda (Osaka University), Hiroki Nishikawa (Osaka University), Ittetsu Taniguchi (Osaka University), Takao Onoye (Osaka University)

1139: WAVELET-BASED FEATURE COMPRESSION FOR IMPROVED KNOWLEDGE DISTILLATION*

Usma Niyaz Bhat (IIT Ropar, Punjab), Abhishek Singh Sambyal (Indian Institute of Technology Ropar), Deepti Bathula (Indian Institute of Technology Ropar)

259: Prediction of recurrence free survival of head and neck cancer using PET/CT radiomics and clinical information*

Mona Furukawa (University of Oxford), Bartłomiej W Papiez (University of Oxford), Daniel McGowan (University of Oxford)

1006: GRAPH-RADIOMICS LEARNING (GrRAIL): APPLICATION TO DISTINGUISHING GLIOBLASTOMA RECURRENCE FROM PSEUDO-PROGRESSION ON STRUCTURAL MRI*

Dheerendranath Battalapalli (University of Wisconsin Madison), Apoorva Safai (Wisconsin Institute of Medical Research), Marwa Ismail (University of Wisconsin), Virginia Hill (Northwestern University), Volodymyr Statsevych (Cleveland Clinic), Raymond Huang (Brigham and Women's Hospital), Manmeet Singh Ahluwalia (Miami Cancer Institute), Pallavi Tiwari (University of Wisconsin Madison)

1135: Neural Radiance Fields for 3D Reconstruction in Monoscopic Laryngeal Endoscopy*

Belén Lojo Rodríguez (Friedrich-Alexander-Universität Erlangen-Nürnberg), Guilherme Lopes Borges (Friedrich-Alexander-Universität Erlangen-Nürnberg), Marta López-Brea (Friedrich Alexander Universität), Anne Schützenberger (University Hospital Erlangen), Andreas M Kist (Friedrich-Alexander-University Erlangen-Nürnberg)

910: COMPARISON OF LOSS FUNCTIONS FOR GUIDEWIRE AUTOMATIC DETECTION ON A LIMITED DATASET OF FLUOROSCOPIC IMAGES FOR ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY.*

Garance Martin (LIP6), Aymeric Becq (Hopital Henri Mondor), Isabelle Bloch (Sorbonne Université), Marine Camus (Hôpital Saint-Antoine), Andrea Pinna (Sorbonne Université), Jérôme Szewczyk (UPMC)

985: PARKINSON'S DISEASE DIAGNOSIS WITH SPARSE LEARNING OF MULTI-MODAL ADAPTIVE SIMILARITY*

Jianqiang Li (Hubei University of Technology), Jiatao Yang (Hubei University of Technology), Haitao Gan (Hubei University of Technology), Zhongwei Huang (Hubei University of Technology)

724: AIRWAYS MEASUREMENT FROM CT IMAGES IN HEALTH AND ASTHMA*

Alessandro Molani (Politecnico di Milano), Claudia Mascheroni (Politecnico di Milano), Andrea Aliverti (Politecnico di Milano), Francesca Pennati (Politecnico di Milano)

1508: ATHERORISK - A CAROTID ULTRASOUND VIDEO ANALYSIS SYSTEM FOR STROKE RISK STRATIFICATION

Michalis K Gemenaris (Cyprus University of Technology), Christos Markides (Frederick University), Georgia D Liapi (Cyprus University of Technology), Christos P Loizou (Cyprus University of Technology), Andrew Nicolaides (Vascular Screening and Diagnostic Center), Maura Griffin (Vascular Screening and Diagnostic Center), Costantinos Pattichis (University of Cyprus), Erythroulou Kyriacou (Cyprus University of Technology)

1270: CoCa-MIL: Attention-Based Handcrafted-Deep Feature Fusion in Computational Pathology*

Paras Goel (BASIS Independent Silicon Valley), Saarthak Kapse (Stony Brook University), Pushpak Pati (Johnson and Johnson), Prateek Prasanna (Stony Brook University)

576: Double Collaborative Learning on Functional Brain Networks for Brain Disease Classification*

Jie Zhou (Anhui Normal University), Biao Jie (Anhui Normal University), Zhengdong Wang (East China Normal University), Zhixiang Zhang (Anhui Normal University), Wei Shao (Nanjing University of Aeronautics and Astronautics), Weixin Bian (Anhui Normal University), Yang Yang (Anhui Normal University), Tong Chun Du (Anhui Normal University)

1576: CLASS-WISE FEATURE MAP SELECTION BASED PROTOTYPICAL NETWORKS

Ranjana Roy Chowdhury (IIT Ropar), Usma Niyaz Bhat (IIT Ropar, Punjab), Deepti Bathula (Indian Institute of Technology Ropar)

949: Adaptify: A Refined Test-time Adaptation Scheme for Frame Classification Consistency in Atrophic Gastritis Videos*

Zinan Xiong (University of Massachusetts Lowell), Shuijiao Chen (Xiangya Hospital Central South University), Yu Cao (The University of Massachusetts Lowell), Benyuan Liu (Computer Science Department of UMass Lowell), Xiaowei Liu (Xiangya Hospital Central South University), Yizhe Zhang (Nanjing University of Science and Technology)

117: SurgPLAN: Surgical Phase Localization Network for Phase Recognition*

Xingjian Luo (Centre for Artificial Intelligence and Robotics (CAIR) Hong Kong Institute of Science & Innovation Chinese Academy of Sciences), You Pang (The Hong Kong Polytechnic University), Zhen Chen (Centre for Artificial Intelligence and Robotics, Hong Kong Institute of Science & Innovation, Chinese Academy of Sciences), Jinlin Wu (Institute of Automation, Chinese Academy of Sciences), Zongmin Zhang (CAIR), Zhen Lei (NLPR, CASIA), Hongbin Liu (Institute of Automation, Chinese Academy of Sciences)

1528: Image and Feature Harmonization in Radiomics Enhances Prediction of Immunotherapy Response for Lung Cancer

Benito Farina (Universidad Politécnica de Madrid), Gonzalo Vegas Sanchez-Ferrero (Brigham and Women's Hospital), Ana D Ramos Guerra (Universidad Politécnica de Madrid), Carmelo Palacios Miras (Hospital Universitario Fundación Jiménez Díaz), Guillermo Gallardo Madueño (Clínica Universidad de Navarra), Jose Carmelo Albilllos Merino (Hospital 12 de Octubre), Jon Zugazagoitia (Hospital 12 de Octubre), Germán Peces-Barba (Hospital Universitario Fundación Jiménez Díaz), Luis Seijo Maceiras (Clínica Universidad de Navarra), Luis Paz Ares (Hospital 12 de Octubre), Ignacio Gil-Bazo (Fundación Instituto Valenciano de Oncología (IVO)), Manuel Dómine Gómez (Hospital Universitario Fundación Jiménez Díaz), Raul San Jose Estepar (Brigham and Women's Hospital), Maria J Ledesma-Carbayo (Universidad Politécnica de Madrid)

816: CELL MAPS REPRESENTATION FOR LUNG GROWTH PATTERNS CLASSIFICATION IN WHOLE SLIDE IMAGES*

Arwa AlRubaiyan (University of Warwick), Gozde N Gunesli (University of Warwick), Wajd Althakfi (King Saud University), Ayesha Azam (University of Warwick), Nasir Rajpoot (University of Warwick), Shan Raza (University of Warwick)

958: AUTOMATIC DETECTION OF PARATHYROID GLANDS IN NUCLEAR MEDICINE*

Ouassim Boukhennoufa (SUPMICROTECH, CNRS, institut FEMTO-ST), Laurent Comas (CHU Besançon, Médecine nucléaire), Jean-Marc Nicod (SUPMICROTECH, CNRS, institut FEMTO-ST), Constantin Ungureanu (CHU Besançon, Médecine nucléaire), Noureddine Zerhouni (FEMTO-ST), Hatem Boulahdour (CHU Besançon, Médecine nucléaire)

1364: CAROTID PLAQUE MOTION ANALYSIS IN ULTRASOUND VIDEOS TO DISCOVER RUPTURE-PRONE PLAQUE AREAS*

Georgia D Liapi (Cyprus University of Technology), Christos P Loizou (Cyprus University of Technology), Andrew Nicolaides (Vascular Screening and Diagnostic Center, Nicosia), Maura Griffin (Vascular Screening and Diagnostic Center, Nicosia), Dimitrios Kardoulas (Hemodynamic Unit, Vascular Surgery Clinic, Attikon General University Hospital, Athens), Constantinos Pattichis (Department of Computer Science, University of Cyprus), Ethyvoulos Kyriacou (Cyprus University of Technology)

539: Color deconvolution for color-agnostic and cross-modality analysis of immunohistochemistry whole-slide images with deep learning*

Carlijn M Lems (Radboud University Medical Center), Daan Geijs (Radboud University Medical Center), John-Melle Bokhorst (Radboud University Medical Center), Maxime Sülter (Radboud University Medical Center), Leander Van Eekelen (Radboud University Medical Center), Francesco Ciompi (Radboud University Medical Center)

1010: Unsupervised high-throughput segmentation of cells and cell nuclei in quantitative phase images*

Julia D Sistermanns (Technical University of Munich), Ellen Emken (Technical University of Munich), Gregor Weirich (Technical University of Munich), Oliver Hayden (Technical University of Munich), Wolfgang Utschick (Technische Universität München)

966: Retinal Vascular System Segmentation Based on Non-Linear MAP-Based Estimation of Joint MGRF Model*

Ahmed AlKsas (University of Louisville), Ahmed Sharafeldeen (University of Louisville), Hossam Magdy Balaha (University of Louisville), Mohammed Ghazal (Abu Dhabi University), Marah T Alhalabi (Abu Dhabi University), Ali Mahmoud (University of Louisville), Rasha Hassan (University of Louisville), Jawad Yousaf (Abu Dhabi University), Harpal Sandhu (Department of Ophthalmology, School of Medicine, University of Louisville, KY), Ayman S El-Baz (University of Louisville)

545: Hyper Morphological Graph for Brain Structural Connection Analysis*

Tong Xiong (South China University of Technology), Xin Zhang (South China University of Technology)

45: CellSeg2TLS: A Deep Learning Framework for Predicting the Maturation of Tertiary Lymphoid Structures in Pathology Images*

Yang Yang (ShanghaiTech University), Mei Xie (Chinese PLA General Hospital), Yimiao Feng (ShanghaiTech University), Xueheng Lv (ShanghaiTech University), Jialin Song (Weifang Medical University), Xinyin Xue (Beijing Shijitan Hospital), Jie Zheng (ShanghaiTech University)

395: MITIGATING RACIAL BIAS IN CHEST X-RAY DISEASE DIAGNOSIS VIA DISENTANGLEMENT LEARNING*

Xinwei Lai (Xidian University), Ying Wang (Xidian University), Jie Li (Xidian University), Zhusi Zhong (Xidian University), Xin Yang (Xidian University)

738: A zero-shot domain adaptation framework for Computed tomography via reinforcement learning and volume rendering*

Ang Li (CUHK), Zhao Yongjian (CUHK), Fan Bai (The Chinese University of Hong Kong), Jiayi Han (Fudan University), Meng Q.-H. Max (CUHK), Li Liu (CUHK)

593: Optimizing Point of Entry Location in Lung Biopsy Planning Systems through Heatmaps*

Debora Gil (Computer Vision Center), Pere Lloret (Computer Vision Center), Marta Diez-Ferrer (Department of Respiratory Medicine, Hospital Universitari de Bellvitge), Carles Sanchez (Computer Vision Center)

386: Impact of image and feature harmonization on the computerized analysis of mammograms*

Juan S Guerrero Peña (Universidad Industrial de Santander), Rafael S Suárez (Universidad Industrial de Santander), Angie N Hernández (Tampere University), Said Pertuz (Universidad Industrial de Santander)

46: BrainNetDiff: Generative AI Empowers Brain Network Construction via Multimodal Diffusion*

Yongcheng Zong (Shenzhen Institute of Advanced Technology), Changhong Jing (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences), Jonathan Chan (School of Information Technology, King Mongkut's University of Technology Thonburi), Shuqiang Wang (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences)

218: Semi-supervised Medical Image Segmentation via Query Distribution Consistency*

Rong Wu (New York University), Dehua Li (DecisionLinnc Dev Group), Cong Zhang (DecisionLinnc Dev Group)

250: Benchmarking Pretrained Vision Embeddings for Near- and Duplicate Detection in Medical Images*

Tuan Truong (Bayer AG), Farnaz Khun Jush (Bayer AG), Matthias Lenga (Bayer AG)

316: Metastatic Lung Cancer Prognosis via Deep Image-Based Lesion Prioritization*

Forest Yang (UC Berkeley), Skander Jemaa (Genentech, Inc.), Thomas Bengtsson (N-Power Medicine), Laurent El Ghaoui (VinUniversity)

1360: Automated Detection and Segmentation of Glioblastoma in MRI using Multi-Level Diffusion Transformer U-Net*

Anum Masood (Institute of Neurosciences and Medicine (INM), Forschungszentrum Jülich), Usman Naseem (Macquarie University), Junaid Rashid (Sejong University), Imran Razzak (UNSW)

454: Accurate cell segmentation based on Generative Adversarial Networks and nuclei guide factors*

Marina E. Plissiti (University of Ioannina), Christophoros Nikou (University of Ioannina), Kostantca Lavtaniti (University of Ioannina), Michalis Vrigkas (University of Western Macedonia)

1024: Integrating Intra-phase Coherence and Intra-frame Scene Perception for Panoptic Segmentation in Cataract Surgery Video*

Mingen Zhang (Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences), Yuanyuan Gu (Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences), Xu Chen (Department of Ophthalmology, Shanghai Aier Eye Hospital), Lei Mou (Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences), Feiming Wang (Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences), Jiang Liu (Southern University of Science and Technology), Yitian Zhao (Cixi Institute of Biomedical Engineering, Ningbo Institute of Industrial Technology, Chinese Academy of Sciences)

971: AUTOMATED DETECTION OF SHOULDER ROTATOR CUFF TENDON TEARS FROM ULTRASOUND IMAGES BY CNN-AUTOENCODER*

Shrimanti Ghosh (University of Alberta), Banafshe BF Felfeliyan (University of Alberta), Yuyue Zhou (University of Alberta), Shaobo Liu (University of Alberta), Jessica Knight (University of Alberta), Natasha Akhlaq (University of Alberta), Jessica Küpper (University of Alberta), Abhilash Rakkunedeth (University of Alberta), Jacob Jaremko (University of Alberta)

133: DOSE PREDICTION DRIVEN RADIOTHERAPY PARAMETERS REGRESSION VIA INTRA- AND INTER-RELATION MODELING*

Jiaqi Cui (Sichuan University), Yuanyuan Xu (Sichuan University), Jianghong Xiao (West China Hospital, Sichuan University), Yuchen Fei (Sichuan University), Jiliu Zhou (Sichuan University), Xingchen Peng (West China Hospital, Sichuan University), Yan Wang (Sichuan University)

979: Advancing Personalized Prostate Cancer Therapy Through Hormonal Treatment: Promising Findings*

Ibrahim Abdelhalim (University of Louisville), Ahmed Alksas (University of Louisville), Hossam Magdy Balaha (University of Louisville), Mohammed Badawy (Mansoura University), Mohamed Abou El-Ghar (Mansoura University), Norah Saleh Alghamdi (Princess Nourah bint Abdulrahman University), Mohammed Ghazal (Abu Dhabi University), Sohail Contractor (University of Louisville), Eric VAN Bogaert (University of Louisville), Dibson Gondim (University of Louisville), Scott Silva (University of Louisville), Fahmi Khalifa (University of Louisville), Ayman S El-Baz (University of Louisville)

779: Improving Clinical Predictions with Multi-Modal Pre-training in Retinal Imaging*

Emese Sükei (Medical University of Vienna), Elisabeth Rumetshofer (JKU Linz), Niklas Schmidinger (JKU Linz), Andreas Mayr (Johannes Kepler University Linz), Ursula Schmidt-Erfurth (Medical University of Vienna), Guenter Klambauer (LIT AI Lab, Institute for Machine Learning, Johannes Kepler University Linz), Hrvoje Bogunovic (Medical University of Vienna)

1047: Is in-domain data beneficial in transfer learning for landmarks detection in x-ray images?*

Roberto Di Via (MaLGa (Machine Learning Genoa Center)), Matteo Santacesaria (MaLGa, University of Genoa), Francesca Odone (Università di Genova), Vito Paolo Pastore (MaLGa, DIBRIS, University of Genoa)

1111: Local-Global Co-attention neural network for Alzheimer's Disease Diagnosis*

Chenyu Liu (The Hong Kong Polytechnic University)

560: A Unified Approach for Comprehensive Analysis of Various Spectral and Tissue Doppler Echocardiography*

Jaeik Jeon (Ontact Health), Jiyeon Kim (Yonsei University), Yeonggul Jang (Yonsei University), Yeonyee Yoon (Seoul National University Bundang Hospital), Dawun Jeong (Yonsei University), Youngtaek Hong (Yonsei University), Seung-Ah Lee (Ontact Health), Hyuk-Jae Chang (Yonsei University)

1086: In-Silico Trained AI for Enhanced T2 Spectrum Imaging and Myelin Water Fraction Mapping in Preclinical 7T MRI*

Alonso Ramirez-Manzanares (CIMAT A.C.), Daniel Vallejo-Aldana (CIMAT A.C.), Jonathan Rafael-Patino (École Polytechnique Fédérale de Lausanne), Erick Canales-Rodriguez (EPFL), Jean-Philippe Thiran (École Polytechnique Fédérale de Lausanne), Thomas Yu (Siemens Healthineers), Luis Concha (UNAM), Abraham Cisneros-Mejorado (UNAM)

241: Domain Generalization for Pathological Images using the Storage Period Information*

Yuki Shigeyasu (Kyushu University), Shota Harada (Hiroshima City University), Akihiko Yoshizawa (Kyoto University), Kazuhiro Terada (Kyoto), Naoki Nakajima (Kyoto University Hospital), Mariyo Kurata (Kyoto University Hospital), Hiroyuki Abe (The University of Tokyo), Tetsuo Ushiku (The University of Tokyo), Ryoma Bise (Kyushu University)

1230: An Attention Based Pipeline for Identifying Pre-Cancer Lesions in Head and Neck Clinical Images*

Abdullah Alsalemi (University of Warwick), Anza Shakeel (University of Sheffield), Mollie Clark (University of Sheffield), Ali Khurram (University of Sheffield), Shan Raza (University of Warwick)

1566: Use of Silver Standard masks and UNETR for brain segmentation

Beatriz C Vicente (Universidade Estadual de Campinas), Letícia Rittner (University of Campinas)

1492: A FULLY AUTOMATED PIPELINE FOR EXTRACTING VERTEBRAL COMPRESSION PARAMETERS FROM CLINICAL MRI SCANS IN INDIVIDUALS WITH LOW BACK PAIN

Maria Monzon (ETH), Thomas Iff (ETH), Zina-Mary Manjaly (Schulthess Klinik), Catherine R. Jutzeler (ETH)

381: Estimating deviation from Canonical Orientation for CT Head images*

Deepa Anand (GE Healthcare), Vanika Singhal (GE Healthcare), Rakesh Mullick (GE), Uday Patil (GE Healthcare), Sandeep Dutta (GE Healthcare), Bipul Das (GE)

1020: A Hierarchical Hypergraph Attention Network for Survival Analysis from Pathological Images*

Hongmin Cai (South China University of Technology), Weiting Yi (South China University of Technology), Weitian Huang (South China University of Technology), Zhikang Wang (Monash University), Yue Zhang (Guangdong Polytechnic Normal University), Jiangning Song (Monash University)

1044: Application of Vision-Language Models for Assessing Osteoarthritis*

Banafshe BF Felfeliyan (University of Alberta), Yuyue Zhou (University of Alberta), Shrimanti Ghosh (University of Alberta), Jessica Küpper (University of Alberta), Shaobo Liu (University of Alberta), Abhilash Rakkunedeth (University of Alberta), Jacob Jaremko (University of Alberta)

1554: INTERPRETABLE MEASURES OF CELL MORPHOLOGY, TISSUE TEXTURE, AND CELL-TYPE INTERACTIONS FOR PROGNOSTICS IN EARLY-STAGE MELANOMA

Justin Couetil (Indiana University School of Medicine), Ziyu Liu (Purdue University), April Snyder (Indiana University School of Medicine), Elena Vidal (Indiana University School of Medicine), Ashley Megler (Indiana University School of Medicine), Karthik Raja Ravichandran (Indiana University School of Medicine), Amanda Gamwo (Indiana University School of Medicine), Halie Szilagyi (Indiana University School of Medicine), Kun Huang (Indiana University), Ahmed Khalid Alomari (Indiana University School of Medicine), Jie Zhang (Indiana University)

1473: An Ensemble Approach to Urinary Sediment Detection Based on YOLOv7

Keita Sasaki (Osaka University), Hiroki Nishikawa (Osaka University), Ittetsu Taniguchi (Osaka University), Takao Onoye (Osaka University)

1515: Influence of Size Markers in Ultrasound Images on Breast Lesion Classification

Malitha Gunawardhana (Auckland Bioengineering Institute, University of Auckland), Alina Yermakova (Institute of Fundamental Technological Research, Polish Academy of Sciences), Norbert S Zolek (Institute of Fundamental Technological Research, Polish Academy of Sciences)

1465: Impact of Variations in Tumor Delineation on Machine Learning-based Breast MRI radiomics

Sepideh Hatamikia (Danube Private University (DPU)), Geevarghese George (Danube Private University), Florian Schwarshanz (Danube Private University), Amirreza Mahbod (Danube Private University), Ramona Woitek (Danube Private University)

Poster Session 4: Thursday, May 30

Topics: Focusing on the object of interest (Brain, Breast, Eye, Heart, Lung, Spine, Tooth, Abdomen, Vessels, Cells & molecules, Single cell & molecule detection, Animal models and imaging) and tools for decision support (Virtual/augmented reality, Visualization in biomedical imaging, Radiation therapy, planning and treatment)

09:30 – 11:00

Banqueting Hall Foyer

Chairs: Sotirios Goudos (Aristotle University of Thessaloniki), Emilie Chouzenoux (Inria Saclay)

*Note: * Denotes 4-Page Paper Submission*

301: Cas-DiffCom: Cascaded diffusion model for longitudinal super-resolution 3D medical image completion*

Tianli Tao (ShanghaiTech University), Xinyi Cai (ShanghaiTech University), Zihao Zhu (ShanghaiTech University), Lianghu Guo (ShanghaiTech University), Lixuan Zhu (ShanghaiTech University), Rui Zhou (ShanghaiTech University), Siyan Han (ShanghaiTech University), Jiawei Huang (ShanghaiTech University), Zhuoyang Gu (ShanghaiTech University), Haifeng Tang (ShanghaiTech University), Yan Liang (ShanghaiTech University), Qing Yang (ShanghaiTech University), Dinggang Shen (United Imaging Intelligence), Han Zhang (ShanghaiTech University)

226: Resolution- and Stimulus-agnostic Super-Resolution of Ultra-High-Field Functional MRI: Application to Visual Studies*

Hongwei Bran Li (Harvard Medical School), Matthew Rosen (MGH/Martinos Center), Shahin Nasr (Massachusetts General Hospital, Harvard Medical School), Juan Eugenio Iglesias (UCL)

1478: ADVANCING PERSONALIZED BRAIN TREATMENTS: EVALUATING WIRELESS IMPLANTABLE MICROBOTS BY USING HIGH RESOLUTION 3D IMAGING TECHNIQUE

Teresa Giannattasio (University of Rome-Tor Vergata), Michela Fratini (Institute of Nanotechnology, CNR, Rome), Francesco Brun (University of Trieste), Luca Brombal (University of Trieste), Syed Bilal Nizami (University of Rome-Tor Vergata), Valeria Palumbo (University of Rome-Tor Vergata), Joao Ribeiro (Fondazione Istituto Italiano di Tecnologia, Genova), Flavia Franceschini (University of Rome-Tor Vergata), Marco Micali (University of Rome-Tor Vergata), Eugenia Guida (University of Rome-Tor Vergata), Susanna Dolci (University of Rome-Tor Vergata), Luca Berdondini (Fondazione Istituto Italiano di Tecnologia, Genova), Manuel Scimeca (University of Rome-Tor Vergata), Alessandro Mauriello (University of Rome-Tor Vergata), Allegra Conti (University of Rome-Tor Vergata), Nicola Toschi (University of Rome-Tor Vergata)

744: ENHANCING GROUP-WISE CONSISTENCY IN 3-HINGE GYRUS MATCHING VIA ANATOMICAL EMBEDDING AND STRUCTURAL CONNECTIVITY OPTIMIZATION*

Chao Cao (University of Texas at Arlington), Lu Zhang (University of Texas at Arlington), Xiaowei Yu (University of Texas at Arlington), Tong Chen (University of Texas Arlington), Yanjun Lyu (University of Texas at Arlington), Tianming Liu (University of Georgia), Dajiang Zhu (University of Texas at Arlington)

907: Replication and Refinement of Brain Age Model for Adolescent Development*

Bhaskar Ray (Georgia State University), Jiayu Chen (TReNDS), Zening Fu (Georgia State University), Pranav Nadigapu Suresh (Georgia State University), Bishal Thapaliya (Georgia State University), Britny Farahdel (Georgia State University), Vince Calhoun (TReNDS), Jingyu Liu (Georgia State University)

895: Diagnosis of Early Mild Cognitive Impairment in Type 2 Diabetes Mellitus by Deep Learning of Multimodal Images and Metadata*

Kangfu Han (Southern Medical University), Xiaomei Yue (Guangzhou University of Chinese Medicine), Shijun Qiu (The First Affiliated Hospital of Guangzhou University of Chinese Medicine), Feng Yang (Southern Medical University), Gang Li (University of North Carolina at Chapel Hill)

64: Radiomics-guided Multimodal Self-attention Network for Predicting Pathological Complete Response in Breast MRI*

Jonghun Kim (Sungkyunkwan University), Hyunjin Park (Sungkyunkwan University)

521: TriAug: Out-of-Distribution Detection for Imbalanced Breast Lesion in Ultrasound*

Yinyu Ye (Shenzhen University), Shijing Chen (Shenzhen University), Dong Ni (Shenzhen University), Ruobing Huang (Shenzhen University)

1035: Millimeter-Waves for Breast Cancer Detection: State-of-the-Art and Perspectives

Simona Di Meo (Università degli Studi di Pavia), Giulia Matrone (Università degli Studi di Pavia), Giovanni Magenes (Università degli Studi di Pavia), Marco Pasian (Università degli Studi di Pavia)

315: RER-NET: REFRACTIVE ERROR REGRESSION NETWORK FOR MULTI-ANGLE ECCENTRIC PHOTOREFRACTION PUPIL IMAGES*

Xuchen Hao (Soochow University), Weifang Zhu (Soochow University), Xinjian Chen (Soochow University)

558: Deep Learning Method For Accessible Eccentric Photorefraction*

Mathieu N Vu (Inria Saclay), Emilie Chouzenoux (Inria Saclay), Jean-Christophe Pesquet (CentraleSupélec), Stéphane Boutinon (Essilor International), Marius Peloux (Essilor International), Philippe Pinault (Essilor International)

309: 12-lead ECG-driven Cardiac TMP Recovery via a Joint Physiological Model*

Shujin Hu (Zhejiang University), Huafeng Liu (Zhejiang University)

1203: Modelling Multi-Phase Cardiac Anatomy Using Point Cloud Variational Autoencoders*

Thalia Seale (University of Oxford), Marcel Beetz (University of Oxford), Blanca Rodriguez (University of Oxford), Vicente Grau (University of Oxford), Abhirup Banerjee (University of Oxford)

1081: CAMERA CALIBRATION ALGORITHM FOR LUNG NODULE DETECTION IN VIDEOLAPAROSCOPY*

Rebeca Coércio (CEFETMG), Alexandre R Farias (CEFETMG), Jean Dillennseger (Université de Rennes)

127: Combing 3D body surface and CT volumetric data for ankylosing spondylitis surgery outcome simulation*

Weizhen He (Shenzhen University), Haoran Zhu (Shenzhen University), Jialing Feng (Shenzhen University General Hospital), Qinzhu Yang (Shenzhen University), Yanzhe Wei (Shenzhen University General Hospital), Zhengji Huang (Shenzhen University General Hospital), Huiren Tao (Shenzhen University General Hospital), Yi Gao (Shenzhen University)

598: Refined individual tooth segmentation from cone beam CT images*

Zheng Tuo (Zhejiang University), Jiaxiang Liu (Zhejiang University-University of Illinois at Urbana-Champaign Institute, Zhejiang University), Yang Feng (Angelalign Tech.), Junhui Lv (Sir Run Run Shaw Hospital, College of Medicine, Zhejiang University), Zuozhu Liu (Zhejiang-UIUC Institute)

424: Uncertainty Driven Bottleneck Attention U-net for Organ at Risk Segmentation*

Abdullah Mr Nazib (Queensland University of Technology), Clinton Fookes (Queensland University of Technology), Riad Hassan (BUET), Zahidul Islam (Islamic University)

1514: ESTABLISHING A COMPUTATIONAL FRAMEWORK TO STRATIFY PANCREATIC DUCTAL ADENOCARCINOMA PATIENT COHORTS USING DIGITAL PATHOLOGY AND MACHINE-LEARNING

Mahdi Babaei (Stevens Institute of Technology), Xin Qi (Rutgers Cancer Institute of New Jersey), Eoin O'Hare (Rutgers Cancer Institute of New Jersey), Wenjin Chen (Rutgers Cancer Institute of New Jersey), Maryjka Blaszczyk (Rutgers Robert Wood Johnson Medical School), David Foran (Rutgers Cancer Institute of New Jersey), Yu Gan (Stevens Institute of Technology)

232: DISCONTINUITY-AWARE CORONARY ARTERY SEGMENTATION ON CCTA IMAGE*

Xiong Xiaosong (ShanghaiTech University), Xiao Zhang (Northwest University), Caiwen Jiang (ShanghaiTech University), Jiameng Liu (ShanghaiTech University), Zhiming Cui (ShanghaiTech), Dijia Wu (United Imaging Intelligence), Dinggang Shen (ShanghaiTech University)

1154: Pathologist-Like Explanations Unveiled: an Explainable Deep Learning System for White Blood Cell Classification*

Aditya Shankar Pal (Indian Statistical Institute), Debojyoti Biswas (Indian Statistical Institute), Joy Mahapatra (Indian Statistical Institute), Debasis Banerjee (Drs Tribedi & Roy Diagnostic Laboratory), Prantar Chakrabarti (Zoho Corporation), Alejandro Federico Frangi (University of Manchester), Utpal Garain (Indian Statistical Institute)

915: Cell Nuclei Segmentation using Deep Hybrid Representation Learning for 2D and 3D Microscopy Images*

Janis Meyer (Heidelberg University), Xiangjing Dong (Heidelberg University), Karl Rohr (University of Heidelberg, DKFZ)

1451: CellDETR: MODIFIED DETECTION TRANSFORMER FOR IMPROVED CELL DETECTION IN MULTIPLEXED

IMMUNOFLUORESCENCE IMAGES

Felix J Segerer (AstraZeneca)

922: Deep Learning-based Point Cloud Registration for Augmented Reality-guided Surgery*

Maximilian Weber (Graz University of Technology), Daniel Wild (Graz University of Technology), Jens Kleesiek (Institute for AI in Medicine (IKIM), University Hospital Essen), Jan Egger (Institute for AI in Medicine, University Hospital Essen), Christina Schwarz-Gsaxner (Graz University of Technology)

1153: Customizable and Interactive Visualizations for Investigating Spatio-temporal Single-cell Information*

Johannes Seiffarth (Forschungszentrum Jülich), Luisa Blöbaum (Bielefeld University), Alexander Grünberger (KIT), Katharina Nöh (Forschungszentrum Jülich)

1518: Comparison of a Portable 3D Screen vs 3D Printing as a Teaching Aid for Anatomical Education

Antonia A Pontiki (King's College London), Elsa-Marie Otoo (King's College London), Chun Ki Chan (King's College London), Sami Uddin (King's College London), Leona Takeuchi (King's College London), Yousif Bilal (King's College London), Youvraj Singh-Dehal (King's College London), Kawal Rhode (King's College London)

1534: VICTOR: Visualizing the Impact of Changes to Tumor delineations on Organs at Risk

Zahira Mercado (University of Bern), Amith J Kamath (University of Bern), Robert Poel (Inselspital Bern), Ekin Ermis (University Clinic for Radio-oncology, University Hospital Inselspital), Jonas Willmann (University Hospital Zurich), Nicolaus Andratschke (University Hospital Zurich), Mauricio Reyes (University of Bern)

1552: Incorporating Geometric Contour Variability into a Dosimetric Radiotherapy Quality Assurance System

Amith J Kamath (University of Bern), Zahira Mercado (University of Bern), Robert Poel (Inselspital Bern), Ekin Ermis (University Clinic for Radio-oncology, University Hospital Inselspital), Jonas Willmann (University Hospital Zurich), Nicolaus Andratschke (University Hospital Zurich), Mauricio Reyes (University of Bern)

686: EVALUATION OF THE SEGMENT ANYTHING MODEL (SAM) FOR BRAIN TUMOR SEGMENTATION*

Mohammad Peivandi (Wayne State University), Jason Zhang (Canton High School), Michael Lu (Phillips Exeter Academy), Chengyin Li (Wayne State University), Dongxiao Zhu (Wayne State University), Zhifeng Kou (Wayne State University)

1256: New Deep Learning-based Approach for Dysphagia Assessment from Videofluoroscopy Swallowing Studies

Lucía Cubero Gutiérrez (Université de Rennes), Christophe Tessier (Service d'ORL et Chirurgie Maxillo-Faciale, CHU Pontchaillou, Université Rennes), Joël Catelli (Université Rennes, CLCC Eugène Marquis, Inserm, LTSI - UMR 1099), Franck Jegoux (Service d'ORL et Chirurgie Maxillo-Faciale, CHU Pontchaillou, Université Rennes), Javier Pascau (Universidad Carlos III de Madrid); Oscar Acosta (Laboratoire Traitement du Signal et de l'Image)

222: Sparse Anatomical Prompt Semi-Supervised Learning with Masked Image Modeling for CBCT Tooth Segmentation

Dai Pengyu (Chongqing University of Posts and Telecommunications)