OTH REGENSBURG

BVM 2025

German Conference on Medical Image Computing

Bildverarbeitung für die Medizin

March 9-11, 2025
Regensburg

Conference Chair
Prof. Dr. Christoph Palm
Regensburg Medical Image Computing (ReMIC)
OTH Regensburg
Galgenbergstraße 30, 93053 Regensburg

Organizer
Regensburg Medical Image Computing (ReMIC)
OTH Regensburg

supported by
Regensburg Center for Artificial Intelligence (RCAI)
Regensburg Center of Biomedical Engineering (RCBE)
Regensburg Center of Health Sciences and Technology (RCHST)
and listed professional associations

Version 1.1, 06.03.25

Program

in cooperation with

www.bvm-conf.org

Introduction

The German Conference on Medical Image Computing (BVM) has been held at various locations in Germany for almost 30 years and will now take place at the OTH Regensburg for the first time after a virtual event in 2021. In terms of content, the BVM focuses on the computer-aided analysis of medical image data. The areas of application are diverse, e.g. in the fields of imaging, diagnostics, surgical planning, computer-assisted intervention and visualization.

During this time, there have been remarkable methodological developments and changes - particularly in the field of machine learning and artificial intelligence - in which the BVM community has worked intensively. As a result, research in this context now dominate the BVM. These developments have also helped to establish medical image processing at the interface between computer science and medicine as a key technology for the digital health.

In addition to the presentation of current research results from the BVM community, a central aspect of the BVM is the encouragement of young researchers. The conference primarily serves as a platform for doctoral candidates, but also students with outstanding theses, to present their results, enter into professional discourse with the community and network with other researchers. Despite the fact that there are many conferences and congresses that are also relevant to medical image processing, the BVM has lost none of its importance and appeal.

In terms of content, BVM 2025 will once again be able to offer an attractive and top-class program. Out of 94 submissions, 28 presentations, 38 poster contributions and two software demonstrations were accepted via a doubleblided review process with three reviews each. The best papers will again be awarded prizes this year. The conference website can be found at:

https://www.bvm-conf.org

The program will be supplemented by tutorials and three invited lectures. As speakers for the keynote presentations we warmly welcome:

- **Ivana Išgum**
  queAI group, University of Amsterdam, Netherlands

- **David Hawkes**
  UCL Centre for Medical Image Computing, University College London, Great Britain

- **Dirk Wilhelm**
  MITI Research Group, Technical University of Munich, Germany

We would like to take this opportunity to express our sincere thanks to all those who contributed to the success of the conference during the extensive preparations: the keynote speakers, the authors of the scientific contributions, the organizers of the tutorials, the industry representatives, the program committee, the professional societies, the members of the BVM organization team and all employees of the Regensburg Medical Image Computing (ReMIC) lab at OTH Regensburg. We wish all participants of the BVM 2025 conference exciting new contacts and inspiring impressions from the world of medical image processing.

January 2025

Christoph Palm (Regensburg)
Katharina Breininger (Würzburg)
Thomas M. Deserno (Braunschweig)
Heinz Handels (Lübeck)
Andreas Maier (Erlangen)
Klaus Maier-Hein (Heidelberg)
Thomas Tolxdorff (Berlin)

Orientation and Goals

Medical image computing is the key technology for modern image-based diagnostics and surgical support. The community have been meeting at the BVM conference (German conference on Medical Image Computing, Bildverarbeitung für die Medizin) since 1993.

The aim of the conference is to present current research results and to deepen discussions between representatives of the medical, computer and technical sciences, industry and clinical application. The conference is also explicitly aimed at young scientists who wish to report on their Bachelor's or Master's projects. Contributions from European colleagues are also welcome. Although English and German are equal congress languages, English has largely prevailed in the lectures and poster presentations.

Artificial intelligence and machine learning play a particularly important role. Nevertheless, the topics of the conference cover all areas of medical image processing, in particular algorithms, hardware and software systems and their clinical application:

- Machine learning and artificial intelligence
- Convolutional neural networks and deep learning
- Imaging and acquisition
- Visible Light, endoscopy, microscopy
- Image segmentation and image analysis
- Image registration and fusion
- Visualization and animation
- Anatomical atlases
- Time series analysis
- Secure exchange of medical image data
- Patient-specific simulation and planning
- Computer-aided diagnosis
- Virtual / augmented reality
- VR simulators and 3D haptic interaction
- Biomechanical modeling
- Computer-assisted intervention
- Instrument and patient localization and tracking
- Computer-aided operation planning
- Clinical application of computer-aided systems
- Validation and quality assurance
- Image-supported robots, surgical simulators
- Datasets
- Open topics

Program Committee

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Local BVM-Organization

Sümeyye Yildiran, Leonard Klausmann, Alexander Leis, David Rauber, Christoph Palm u.a.

Local BVM-Support

	Verein der Freunde der OTH Regensburg e.V.
RCAI	Regensburg Center for Artificial Intelligence
RCBE	Regensburg Center of Biomedical Engineering
RCHST	Regensburg Center of Health Sciences and Technology

Distributed BVM-Organization

Review	Heinz Handels und Jan-Hinrich Wrage – Institut für Medizinische Informatik, Universität zu Lübeck
Mailing list	Klaus Maier-Hein – Medical Image Computing, Deutsches Krebsforschungszentrum (DKFZ) Heidelberg
Special issue	Andreas Maier – Lehrstuhl für Mustererkennung, Friedrich-Alexander Universität Erlangen-Nürnberg
Conference proceedings	Thomas M. Deserno – Peter L. Reichertz Institut für Medizinische Informatik, TU Braunschweig
Web & News	Christoph Palm und Sümeyye Yildiran – Regensburg Medical Image Computing (ReMIC), OTH Regensburg

Supporting professional associations

Deutsche Gesellschaft für Computer- und Roboterassistierte Chirurgie e.V. (CURAC)

Deutsche Arbeitsgemeinschaft für Mustererkennung e.V.

Fachgruppe Medizinische Informatik der Deutschen Gesellschaft für Biomedizinische Technik (DGBMT) im Verband Deutscher Elektrotechniker (VDE) e.V.

Gesellschaft für Informatik e.V. Fachbereich Informatik in den Lebenswissenschaften

gmds Deutsche Gesellschaft für Medizinische Informatik, Biometrie und Epidemiologie e.V.

Gesellschaft für Medizinische Informatik, Biometrie und Epidemiologie e.V. (GMDS) AG Medizinische Bild- und Signalverarbeitung (AG MBV)

IEEE Joint Chapter Engineering in Medicine and Biology German Section

Cooperation partner

BAIOSPHERE

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Exhibitors and sponsors

We are very pleased about the long-standing continuous support of some companies as well as the new commitment of others. Without this financial support, the BVM would not be able to realize its successful concept.

Platinum sponsors

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Presentation types for contributions

Orals

Each presentation will have 12 minutes for the talk and 3 minutes for the discussion. Presentation slides will be presented on the presentation computer in the lecture hall in PowerPoint or PDF format. Optional: To facilitate discussion after the presentations, lecture posters can also be created and presented.

Posters and Software demonstrations

Poster presentations (DIN A0/portrait format) and software demonstrations provide an opportunity for intensive discussions of the submitted works. Posters will begin to be displayed in the D-Foyer during the entire conference. The poster sessions start with an Pitch Session in the D-Foyer, where all presenting authors have the opportunity to pitch their work in 30 seconds. All the information about posters and software demonstrations are listed in this program booklet, including: session, time, title and author list.

Conference proceedings

All accepted contributions will be published as eBooks in the series *Informatik Aktuell* by Springer Verlag. During the conference and for a period of period of four weeks, free online access to the eBook is available to all participants. participants.

Industry presentations and job fair

There will be an industry exhibition throughout the conference. Please visit the industry booths for information on the companies, jobs and collaboration opportunities.

In addition, there will be some industry presentations as part of the scientific lecture sessions. The job fair will also take place during the lunch breaks.

Journal publications

It is planned to publish outstanding scientific contributions of the BVM 2025 in a special issue of a renowned journal. This year we cooprate for the first time with the Open Access journal *MachineLearningforBiomedical Imaging* (MELBA).

Awards

A total of five BVM prizes will be awarded again this year. A scientific committee will award prizes to the three best scientific contributions. The audience votes for the best lecture and the best poster presentation or best software demonstration. The name of the best scientific lecture prize has been awarded as the *Pitt-Meinzer Prize* since 2024.

In addition, the BVM Award will be given for excellent bachelor's and master's theses, dissertations or postdoctoral theses in the field of medical image computing. The pize money for the BVM award rised this year to 2.000€, sponsored by Nexus/Chili GmbH, Dossenheim/Heidelberg.

Program Guide Sunday, 9th of March 2025

14:00 / 17:30	Tutorials		
	Tutorial 1: Quantum Machine Learning - Hype or Heuristic	**Tutorial 2:** Kaapana Demo - Hands-On	**Tutorial 3:** Implicit Neural Representations (INR) in Medical Imaging

17:30 / 22:00	17:30 21:30	Opening Reception	19:15 22:00	Program Committee Dinner

Program Guide Monday, 10th of March 2025

07:00 / 07:40	**Morning Running Event**

08:15 / 08:45	**Registration and Welcome Coffee**

08:45 / 09:00	**Opening Remarks**

09:00 / 09:40	**Keynote 1:** Ivana Išgum

09:40 / 10:25	**Session 1** Image Registration

10:25 / 10:45	Coffee Break

10:45 / 11:15	**Session 2** Video Analysis

11:15 12:00	**Session 3** **Shape Modelling**
12:00 12:45	**Session 4** **Generative Models**

12:45 13:45	Lunch Break			
	12:50 13:40	GMDS-AG Meeting (Lunch meeting)	13:10 13:45	Guided tour to the OTH research facilities

13:45 14:25	**Keynote 2:** **David Hawkes**
14:25 15:50	**Session 5** **Improving Reliability**
15:50 16:05	Coffee Break
16:05 16:30	**Postersession - Intro 1**
16:30 17:30	**Postersession 1**

18:20 19:30	18:20 19:00	**Evening Running Event**	18:30 19:30	**City Tour**
19:30 01:30	**Dinner Herzogssaal**			

Program Guide Tuesday, 11th of March 2025

Time	Event
08:15 – 08:45	Welcome Coffee
08:45 – 10:10	**Session 6** **Ultrasound & OCT**
10:10 – 10:25	Coffee Break
10:25 – 10:50	**Postersession - Intro 2**
10:50 – 11:50	**Postersession 2**
11:50 – 12:50	Lunch Break

Within Lunch Break:

Time	Event	Time	Event
11:55 12:45	Program Committee Meeting (Lunch served in front of the meeting room)	12:15 12:50	Guided tour to the OTH research facilities

Time	Event
12:50 – 13:30	**Keynote 3:** **Dirk Wilhelm**
13:30 – 14:15	**Session 7** **Digital Pathology**
14:15 – 14:35	Coffee Break
14:35 – 15:35	**Session 8** **Segmentation**

15:35 — 16:05	**BVM Award Talk(s)**
16:05 — 16:30	**Conference Awards & Closing Session**

18:00 — 18:40	Post-Conference Running Event
19:30 — 21:30	**Post-Conference Dinner**

Wifi

Eduroam is available at the conference venue.

Addtionally, **BayernWLAN** can be used as free-of-charge Wifi. Open a website in your browser if it does not open automatically (depending on the operating system and end device). Accept the terms of use on the start page of the hotspot by clicking on 'Connect'.

Tutorials

Three tutorials are planned for sunday afternoon, 09.03.25, 14:00 - 17:30.

Tutorial 1

Quantum Machine Learning - Hype of Heuristic
K003

OTH Regensburg, Prof. Dr. Wolfgang Mauerer und Team

Quantum machine learning (QML) is an emerging technique that leverages the principles of quantum mechanics for potential computational speed-ups. It has been shown that certain problems can be solved more efficiently using quantum algorithms over classical approaches. However, the practical utility of these algorithms is limited on the current generation of quantum computers, so-called noisy intermediate-scale quantum (NISQ) systems, as they only offer a limited amount of qubits and are prone to noise and imperfections that strongly limit possible circuits depth and thus the length of quantum computations. Hybrid variational algorithms are considered key candidates for exploiting advantages of near-term quantum devices, but could also be beneficial in post-NISQ systems because of their resource efficiency.

In this tutorial, we discuss how within the class of hybrid variational algorithms, quantum machine learning (QML) has shown promise by moving certain parts of classical machine learning to quantum computers. QCs will, despite common misperceptions, likely be inapt for handling large amounts of data. Consequently, we focus on qantum reinforcement learning (QRL), which requires little training data. However, we also discuss how QML has been shown to outperform classical machine learning for certain tasks, and how this could benefit ML tasks by, for instance, reducing the number of parameters, or in terms of energy efficiency.

Tutorial 2

Kaapana Demo - HandsOn
K006

DKFZ Heidelberg, Prof. Dr. Klaus Maier-Hein, Ünal Akünal und Team

Kaapana is an open-source medical image research platform for clinicians, data scientists and developers. It enables large scale machine learning research on real world data by bringing state of the art AI tools in clinics and research centers. Kaapana can support both central and decentralized use cases which enables interdisciplinary studies that can lead to significant advancements in medical research and patient care.

In this tutorial, we will first start with an overview of the Kaapana platform and its capabilities. We will explain and demonstrate the features and the various components of Kaapana. Then we will proceed with a hands on demo using Kaapana instances we provide to users. In the demo, a complete end-to-end analysis workflow of the platform is presented with a focus on creating and curating datasets, processing medical images, using machine learning models in the platform and exploring the ways for extending the platform in different use cases. Finally, the audience has the opportunity to explore the system freely and discuss their use cases.

Tutorial 3

Hands-on Tutorial on Implicit Neural Representations (INR) in Medical Imaging
K007

Universität zu Lübeck, Prof. Dr. Mattias Heinrich, Ziad Al-Haj Hemidi, Fenja Falta, Christoph Grossbroehmer

Complementary to the recent success in population-based training of deep neural networks for medical image analysis tasks there has been an exiting development and advancement of optimisation driven approaches using Implicit Neural Representations (INR). INRs, which model e.g. mappings between input coordinates and output gray values as continuous functions, are promising in various vision tasks including motion estimation, image reconstruction, denoising, superresolution, and compression. Over the last few years, those ideas have been transferred into the medical imaging field, where they offer unique advantages in adapting to task- and instance-specific challenges that have thus far prevented a wider spread adoption. Our tutorial will provide both a comprehensive overview lecture of INR research in the medical imaging domain as well as practical demonstrations and hands-on learning for interested students and researchers with little or no prior knowledge of the topic.

Keynotes

Keynote 1

Ivana Išgum,
University of Amsterdam

Time: Monday March 10, 2025, 09:00 - 09:40

Coronary artery disease is a leading cause of morbidity and mortality worldwide. Coronary CT is a non-invasive tool enabling analysis of the coronary arteries and providing important diagnostic information. However, current clinical analysis typically remains limited to visual evaluation of the coronary artery tree as the extraction of the detailed quantitative information requires high level of expertise and it is a time-consuming process. Besides the information about the coronary arteries, these images also contain information about the whole heart and body composition that may be valuable for the prediction of cardiovascular risk. Manual extraction of this information requires segmentation of the target structures, which is highly time-consuming rendering the analysis infeasible. Hence, such analysis is not routinely performed.

Numerous studies have shown that deep learning-based image analysis can facilitate automatic extraction of this relevant information thereby shortening the analysis times and improving reproducibility. This presentation will show our recent developments on the automatic analysis of coronary CT scans towards detection of cardiovascular disease and extraction of cardiovascular risk. The analysis includes extraction of the coronary arteries that provides the basis for the downstream assessment of the vessel morphology. This is followed by the segmentation of the artery lumen and segmentation of the atherosclerotic plaque components. The amount of plaque and stenosis of the lumen indicate the risk and provide the basis for clinical decision-making. Subsequent merging the findings from different vessels in the coronary tree allows standardized risk reporting. Moreover, deep leaning methods for the analysis of the whole heart, i.e. cardiac structures and large arteries, as well as methods for assessment of body composition will be outlined. The presentation will also showcase how the analysis can be extended to CT scans made for other purposes that visualize the heart and offer the possibility to quantify markers indicating the presence or risk of cardiovascular disease. Next to the opportunities these methods offer, the presentation will discuss current challenges towards trustworthy utilization and present the work on addressing these.

Keynote 2

David Hawkes,
University College London (UCL)

Time: Monday March 10, 2025, 13:45 - 14:25

Reluctantly abandoning my career in rock-and-roll and inspired by the elegant mathematics of reconstruction in computed tomography I started working in medical imaging as a clinical scientist. Working in the clinical environment I appreciated how much in medicine was unknown. I became convinced that a physics and engineering approach could contribute to improving healthcare and that this must be done in close collaboration with clinical colleagues in order to be relevant. I also became convinced that real impact in healthcare engineering would only come about by working closely with industry. Only this would enable wide dissemination. Clinical translation of new technologies involves engaging with complex regulatory pathways, validation and clinical trials. Late in the day I also learnt that the patient has a voice that needs to be heard in order to better direct scarce resource to solve the problems that really matter.

This talk will describe how I was fortunate to be inspired by giants in the field. I will run through my early journey from nuclear medicine and X-ray computed tomography to medical image computing, with initial emphasis on imaging as a tool for measurement. I realized that the resources required for development of imaging hardware would be difficult to come by in the academic research environment. On the other hand computing costs were dramatically reducing and compute power was rapidly increasing. I believed that academia was the place both to develop the underpinning mathematics and algorithms, as well as the computer implementations and experimentation needed to have impact. This led to the formation of the Computational Imaging Sciences Group (CISG) at Guy's Hospital (later KCL) and subsequently the Centre for Medical Image Computing (CMIC) at UCL. With the rapid development of MR and wide availability of other modalities probing different aspects of structure and function, we were motivated to find ways of combining information. This led to the need to tackle image registration. With integration of real-time imaging and video this led naturally to work on image guided interventions. This led to the foundation of the Welcome EPSRC Centre for Interventional and Surgical Sciences (WEISS). Close collaboration with pathologists resulting from our work with surgeons opened my eyes to the world of cellular microscopy. This led to our efforts in trying to relate the macroscopic (millimeter) scale of medical imaging to the microscopic world of histology, where cancer and other diseases are ultimately diagnosed and staged.

I retired just as machine learning and artificial intelligence were taking off and this promised a revolution as profound as that which I had witnessed in the early days of medical imaging. I will describe how I learnt from the many frustrations and failures that are inevitable in a research career in a rapidly evolving field, but also the excitement and inspiration as to what to do next. I will try to draw parallels with the promises and excitement, but also the disappointments that might lie ahead in the field of machine intelligence and AI, to inspire the next generation in computation applied to medicine.

Finally everything I have described is collaborative, involving many disciplines, and I gratefully acknowledge the many students, post-docs, visiting scientists and faculty that have made this all possible, along with the long term support of our funders. This area is truly multidisciplinary and medicine by its nature crosses all international boundaries. It has been an exciting and rewarding journey.

Keynote 3

Dirk Wilhelm,
Technische Universität München (TUM)

Time: Tuesday March 11, 2025, 12:50 - 13:30

In addition to continuously rising costs, the healthcare system is currently characterised by an increasing shortage of staff. It is currently estimated that by the year 2023 there will be a shortage of 500,000 nurses and 6,000 doctors in Germany alone. Consequences of this are delays in medical treatment, lack of operation in individual departments resulting in medical undersupply and overworked staff. In addition to the recruitment of specialists from abroad and process optimisation, the use of robotic systems is a possible approach to solving this system. For these to relieve the workload, they must have autonomous functions to be able to take over work. While this is already feasible today for logistical tasks and patient transport, for example, the limits of this approach are still unclear. A survey of AI experts currently assumes that surgical skills could be taken over by artificial intelligence by 2050-2055 already [1] - and the success story of surgical robotics and companies such as Intuitive Surg. Inc. shows that robots have already replaced humans on the patient side. But are effective robotic systems and powerful AI algorithms sufficient to reproduce surgical procedures autonomously? Do we already have the necessary components of autonomous surgery?

When revising the current literature, one might assume that this indeed is the fact and that we are about to replace humans also for very delicate tasks. One can find for example reports on autonomous suturing and knot tying systems, robotic appendectomy and retraction and many more. But is this what we understand as an intervention already and can we easily jump from these success stories to full surgeries? From a surgeons perspective and although sub-processes of an operation can already be automated, a surgical procedure however poses a much greater challenge. This not only is due to the complexity of the process, but also to the fact that operations can only be described or predicted in abstract terms, but have aspects of a highly complex system at a granular level. We assume that these can only be resolved through comprehensive standardisation of surgeries and a comprehensive approach that includes the individual patient, the underlying disease, but numerous other factors alike. The presentation will not only attempt to provide a status quo to this topic, but also approaches to how the problem can be tackled in the long term. **References**

[1] Grace, K., Salvatier, J., Dafoe, A., Zhang, B. and Evans, O., 2018. When will AI exceed human performance? Evidence from AI experts. Journal of Artificial Intelligence Research, 62, pp.729-754.

Sunday, March 9, 2025, 14:00 - 17:30 h

Time	Tutorials
14:00 - 17:30	*OTH Campus, K-Building* Tutorial 1: Quantum Machine Learning - Hype of Heuristic, *K003* Tutorial 2: Kaapana Demo - HandsON, *K006* Tutorial 3: Hands-on Tutorial on Implicit Neural Representations (INR) in Medical Imaging, *K007*

Sunday, March 9, 2025, 17:30 - 21:30 h

Time	Conference Opening Reception
17:30 - 21:30	*OTH Campus, Foyer of K-Building* Casual get-together with Bavarian beer and snacks

Sunday, March 9, 2025, 19:15 - 22:00 h

Time	Program Committee Dinner
19:15 - 22:00	*Kokono Restaurant* *Fort-Skelly-Straße 24, 93053 Regensburg* The restaurant is a 10-minute walk from the conference opening reception venue.

Monday, March 10, 2025, 07:00 - 07:40 h

Time	Activity
07:00 - 07:40	Morning Running Event *Meeting point:* *Haus der Bayerischen Geschichte,* *Donaumarkt 1, 93047 Regensburg*

Monday, March 10, 2025, 08:15 - 08:45 h

Time	Registration and Welcome Coffee
08:15 - 08:45	*OTH Campus, Foyer of D-Building* Coffee/tea and snacks

All lecture sessions and keynotes are located at the *OTH campus, A-building, lecture hall A 001*.

Monday, March 10, 2025, 08:45 - 09:00 h

Time	Opening / Welcome
08:45 - 09:00	**Welcome adress** *Oliver Steffens* (OTH Vice President Research and International Affairs) **Opening Remarks** *Christoph Palm* (BVM 2025 General Chair)

Monday, March 10, 2025, 09:00 - 09:40 h

Time	Keynote 1 Session Chair: Christoph Palm (Regensburg)
09:00 - 09:40	**AI for Analysis of Coronary Artery Disease** *Ivana Išgum* Quantitative Healthcare Analysis (qurAI) GROUP University of Amsterdam

Monday, March 10, 2025, 09:40 - 10:25 h

	Session 1 Image Registration Session Chair: Dagmar Krefting (Berlin), Marc Aubreville (Flensburg)
09:40 **V01**	**Image Registration for a Dynamic Breathing Model** *Pia F. Schulz, Andra Oltmann, Johannes Bostelmann, Ole Gildemeister, Franz Wegner, Jan Lellmann, Philipp Rostalski, Jan Modersitzki* Institute of Mathematics and Image Computing, University of Lübeck
09:55 **V02**	**Abstract: ConvexAdam, a Self-Configuring Framework for Dual-Optimisation-Based 3D Multitask Medical Image Registration** *Christoph Großbröhmer, Hanna Siebert, Lasse Hansen, Mattias P. Heinrich* Institute of Medical Informatics, University of Lübeck
10:10 **V03** ★	**Surrogate-based Respiratory Motion Estimation using Physicsenhanced Implicit Neural Representations** *Jan Boysen, Hristina Uzunova, Jan Ehrhardt, Heinz Handels* German Research Center for Artificial Intelligence (DFKI), Lübeck

★: Among the seven best entries in the review process

Monday, March 10, 2025, 10:25 - 10:45 h

Time	Coffee Break
10:25 - 10:45	*OTH Campus, D-Building, Foyer* Coffee/tea and snacks Industry Fair

Monday, March 10, 2025, 10:45 - 11:15 h

	Session 2 Video Analysis Session Chair: Mattias Heinrich (Lübeck), Horst Hahn (Bremen)
10:45 **V04**	**Comparison of Framewise Video Classification in Laryngoscopies** *Ole Felber, Louis Bellmann, Philipp Breitfeld, Martin Petzoldt, Felix Rindt,* *René Werner, Maximilian Nielsen* Institute for Applied Medical Informatics, University Medical Center Hamburg-Eppendorf
11:00 **V05**	**Realtime Fiberscopic Image Improvement for Automated Lesion Detection** **in the Urinary Bladder** *Thomas Eixelberger, Karl Weingärtner, Philipp Maisch, Christian Bolenz,* *Thomas Wittenberg* Chair for Visual Computing, FAU Erlangen Frauenhofer IIS

Monday, March 10, 2025, 11:15 - 12:00 h

	Session 3 Shape Modelling Session Chair: Ingrid Scholl (Aachen), Thomas Deserno (Braunschweig)
11:15 **V06**	**Abstract: Universal and Flexible Framework for Unsupervised** **Statistical Shape Model Learning** *Nafie El Amrani, Dongliang Cao, Florian Bernard* University of Bonn
11:30 **V07**	**Robust Statistical Shape Modelling with Implicit Neural Representations** *Christoph Großbröhmer, Fenja Falta, Ron Keuth, Timo Kepp, Mattias P. Heinrich* Institute of Medical Informatics, University of Lübeck
11:45 **V08** ★	**iRBSM: A Deep Implicit 3D Breast Shape Model** *Maximilian Weiherer, Antonia von Riedheim, Vanessa Brébant, Bernhard Egger,* *Christoph Palm* FAU Erlangen-Nürnberg OTH Regensburg

★: Among the seven best entries in the review process

Monday, March 10, 2025, 12:00 - 12:45 h

	Session 4 **Generative Models** Session Chair: Gudrun Wagenknecht (Jülich), René Werner (Hamburg)
12:00 **V09**	**Diffusion Models for Conditional Brain Tumor MRI Generation with Tumor-induced Deformations** *Mona Irsfeld, Heinz Handels, Hristina Uzunova* Institute of Medical Informatics, University of Lübeck German Research Center for Artificial Intelligence (DFKI), Lübeck
12:15 **V10** ★	**LLM-Driven Baselines for Medical Image Segmentation** *Jasmin Arjomandi, Luisa Neubig, Andreas M. Kist* Department Artificial Intelligence in Biomedical Engineering, FAU Erlangen-Nürnberg
12:30 **V11**	**Efficient Deep Learning-based Forward Solvers for Brain Tumor Growth Models** *Zeineb Haouari, Jonas Weidner, Ivan Ezhov, Aswathi Varma, Daniel Rueckert, Bjoern Menze, Benedikt Wiestler* Technical University of Munich

★: Among the seven best entries in the review process

Monday, March 10, 2025, 12:45 - 13:45 h

Time	**Lunch Break**
12:45 - 13:45	*OTH Campus, D-Building, Foyer* Lunch Industry Fair 12:50 - 13:40: GMDS-AG Meeting *(OTH Campus, K-Building, K 218)* 13:10 - 13:45: Guided tour to the OTH research facilities *(Meeting point at the Conference help desk)*

Monday, March 10, 2025, 13:45 - 14:25 h

Time	**Keynote 2** Session Chair: Nassir Navab (München)
13:45 - 14:25	**Fifty Years of Medical Image Computing and my Small Part** *David Hawkes* Centre for Medical Image Computing (CMIC) University College London

Monday, March 10, 2025, 14:25 - 15:50 h

	Session 5 **Improving Reliability** Session Chair: Julia Schnabel (München), Daniel Rückert (München)
14:25 **V12**	**Is Self-Supervision Enough? Benchmarking Foundation Models Against End-to-End Training for Mitotic Figure Classification** *Jonathan Ganz, Jonas Ammeling, Emely Rosbach, Ludwig Lausser, Christof A. Bertram, Katharina Breininger, Marc Aubreville* Technische Hochschule Ingolstadt
14:40 **V13**	**Look - No Convs! Permutation- and Rotation-Invariance for MetaFormers** *Mattias Heinrich* Institute of Medical Informatics, University of Lübeck
14:55 **V14**	**Abstract: Evaluating the Explainability of Attributes and Prototypes for a Medical Classification Model** *Luisa Gallée, Catharina S. Lisson, Christoph G. Lisson, Daniela Drees, Felix Weig, Daniel Vogele, Meinrad Beer, Michael Götz* Ulm University Medical Center
15:10 **V15**	**Evaluating the Fidelity of Explanations for Convolutional Neural Networks in Alzheimer's Disease Detection** *Bjarne C. Hiller, Sebastian Bader, Devesh Singh, Thomas Kirste, Martin Becker, Martin Dyrba* Institute of Visual and Analytic Computing, University of Rostock, German Center for Neurodegenerative Diseases (DZNE)
15:25 **V16**	**Abstract: Metrics Reloaded: Recommendations and Online Toolkit for Image Analysis Validation** *Emre Kavur, Metrics Reloaded Consortium, Lena Maier-Hein, Annika Reinke* German Cancer Research Center (DKFZ) Heidelberg
15:40 **I01**	**Are LLMs Killing the Knowledge Graph? Clinical NLP Between Distributional and Symbolic Representation** *Sven Büchel, Drazenko Djordjevic* ID GmbH

Monday, March 10, 2025, 15:50 - 16:05 h

Time	**Coffee Break**
15:50 - 16:05	*OTH Campus, D-Building, Foyer* Coffee/tea and snacks Industry Fair

Monday, March 10, 2025, 16:05 - 16:30 h

	Postersession 1 Intro Session Chair: Thomas Wittenberg (Erlangen)
16:05 - 16:30	*OTH Campus, D-Building, Foyer*

Monday, March 10, 2025, 16:30 - 17:30 h

	Postersession 1 *OTH Campus, D-Building, Foyer*
P01	**Abstract: Information Mismatch in PHH3-Assisted Mitosis Annotation Leads to Interpretation Shifts in H&E Slide Analysis** *Jonathan Ganz, Christian Marzahl, Jonas Ammeling, Emely Rosbach, Taryn A. Donovan, Samir Jabari, Christof A. Bertram, Katharina Breininger, Marc Aubreville, and the study participants* Technische Hochschule Ingolstadt
P02	**Abstract: Multi-level Cancer Profiling through Joint Cell-graph Representations** *Luis C. Rivera Monroy, Leonhard Rist, Frauke Wilm, Christian Ostalecki, Andreas Baur, Julio Vera, Katharina Breininger, Andreas Maier* Pattern Recognition Lab, FAU Erlangen-Nürnberg
P03	**Abstract: TSynD Targeted Synthetic Data Generation for Enhanced Medical Image Classification: Leveraging Epistemic Uncertainty to Improve Model Performance** *Joshua Niemeijer, Jan Ehrhardt, Hristina Uzunova, Heinz Handels* German Aerospace Center (DLR), Braunschweig
P04	**End-to-End Encoders Stabilize Quantum Convolutional Neural Networks for Medical Image Classification** *Leyi Tang, Merlin A. Nau, Andreas K. Maier* Pattern Recognition Lab, FAU Erlangen-Nürnberg
P05	**Data Augmentation for Liver Tumor Segmentation Using Structure, Texture and Contrast** *Serouj Khajarian, Oliver Amft, Stefanie Remmele* Research Group Medical Technologies, University of Applied Sciences Landshut
P06	**Abstract: IM-MoCo: Self-supervised MRI Motion Correction using Motion-guided Implicit Neural Representations** *Ziad Al-Haj Hemidi, Christian Weihsbach, Mattias P. Heinrich* Institute of Medical Informatics, University of Lübeck

P07	**Assessing Spatial Bias in Medical Imaging: An Empirical Study of PatchGAN Discriminator Effectiveness** *Marc S. Seibel, Timo Kepp, Hristina Uzunova, Jan Ehrhardt, Heinz Handels* Institute of Medical Informatics, University of Lübeck
P08	**Unsupervised Single-Source Domain Generalization for Robust Quantification of Lymphatic Perfusion** *Lisa K. Fischer, Johanna P. Müller, Christian Schröder, Anja Hanser,* *Michela Cuomo, Thomas Day, Cheng Ouyang, Oliver Dewald, Oliver Rompel,* *Sven Dittrich, Thomas Küstner, Bernhard Kainz* FAU Erlangen-Nürnberg
P09	**Data-proximal neural networks for limited-view CT** *Simon Göppel, Jürgen Frikel, Markus Haltmeier* IABG, Ottobrunn
P10	**Towards Robust Zero-shot Chest X-ray Classification** *Sheethal Bhat, Adarsh Bhandary Panambur, Awais Mansoor, Bogdan Georgescu,* *Sasa Grbic, Andreas Maier* Pattern Recognition Lab, FAU Erlangen-Nürnberg
P11	**Precision ICU Resource Planning** *Maximilian Fischer, Florian M. Hauptmann, Robin Peretzke, Paul Naser,* *Peter Neher, Jan-Oliver Neumann, Klaus Maier-Hein* German Cancer Research Center (DKFZ) Heidelberg
P12	**Systematic Analysis of Input Modalities for Fracture Classification of the Paediatric Wrist** *Ron Keuth, Maren Balks, Sebastian Tschauner, Ludger Tüshaus, Mattias Heinrich* Institute of Medical Informatics, University of Lübeck
P13	**Intrinsic Correspondence of Classification Ground Truth and Image Content on the Example of Endoscopic Images** *Johannes Schuiki, Andreas Uhl* Dept. of Artificial Intelligence and Human Interfaces, University of Salzburg
P14	**Abstract: Real-world Federated Learning in Radiology: Hurdles to overcome and Benefits to gain** *Markus Bujotzek, Ünal Aku nal, Stefan Denner, Peter Neher,* *Maximilian Zenk, Klaus Maier-Hein, Andreas Bucher, Rickmer Braren* German Cancer Research Center (DKFZ) Heidelberg
P15	**Abstract: Contrastive Learning Approach for Assessment of Speech in Patients with Tongue Cancer Using MRI Data** *Tomás Arias-Vergara, Paula A. Pérez-Toro, Xiaofeng Liu, Fangxu Xing,* *Maureen Stone, Jiachen Zhuo, Jerry L. Prince, Maria Schuster, Elmar Nöth,* *Jonghye Woo, Andreas Maier* Pattern Recognition Lab, FAU Erlangen-Nürnberg

P16	**Active Learning Pipeline for Biomedical Image Instance Segmentation with Minimal Human Intervention** *Shuo Zhao, Yu Zhou, Jianxu Chen* Leibniz-Institut für Analytische Wissenschaften - ISAS - e.V., Dortmund
P17	**Initial Study On Improving Segmentation By Combining Preoperative CT And Intraoperative CBCT Using Synthetic Data** *Maximilian E. Tschuchnig, Philipp Steininger, Michael Gadermayr* Salzburg University of Applied Sciences and University of Salzburg
P18	**Automatic Thyroid Scintigram Segmentation using U-Net** *Moritz A. Mau, Marius Krusen, Floris Ernst* Institut für Robotik und Kognitive Systeme, University of Lübeck
P19	**Coronary Tree Segmentation and Labelling in X-Ray Angiography Images Using Graph Deep Learning** *Robin Gayet, Alaa Abd El Al, Alexander Meyer, Anja Hennemuth, Matthias Ivantsits, Antonia Popp* Charité - Universitätsmedizin Berlin
P20	**Abstract: Skeleton Recall Loss** *Yannick Kirchhoff, Maximilian R. Rokuss, Saikat Roy, Balint Kovacs, Constantin Ulrich, Tassilo Wald, Maximilian Zenk, Philipp Vollmuth, Jens Kleesiek, Fabian Isensee, Klaus Maier-Hein* German Cancer Research Center (DKFZ) Heidelberg
P21	**Unified Framework for Foreground and Anonymization Area Segmentation in CT and MRI Data** *Michal Nohel, Constantin Ulrich, Jonathan Suprijadi, Tassilo Wald, Klaus Maier-Hein* German Cancer Research Center (DKFZ) Heidelberg
P22	**Automatic Detection of Bronchoscopes on X-ray Images** *Maryam Parvin, Maximilian Rohleder, Andreas Maier, Holger Kunze* Pattern Recognition Lab, FAU Erlangen-Nürnberg
P23	**Automated Segmentation and Analysis of Cone Photoreceptors in Multimodal Adaptive Optics Imaging** *Prajol Shrestha, Mikhail Kulyabin, Aline Sindel, Hilde R. Pedersen, Stuart Gilson, Rigmor Baraas, Andreas Maier* Pattern Recognition Lab, FAU Erlangen-Nürnberg
P24	**Comprehensive Dataset of Coarse Tumor Annotations for The Cancer Genome Atlas Breast Invasive Carcinoma** *Sweta Banerjee, Christof A. Bertram, Jonas Ammeling, Viktoria Weiss, Thomas Conrad, Robert Klopfleisch, Christopher Kaltenecker, Katharina Breininger, Marc Aubreville* Flensburg University of Applied Sciences

S01	**Abstract: Neural Cellular Automata Learn and Predict on Low-Power Devices** *Nick Lemke, Mirko Konstantin, Henry Krumb, John Kalkhof,* *Anirban Mukhopadhyay* Darmstadt University of Technology

Monday, March 10, 2025, 18:20 - 19:30 h

Time	Activity
18:20 - 19:30	18:20 - 19:00: Evening Running Event *Meeting point:* *Haus der Bayerischen Geschichte, Donaumarkt 1, 93047 Regensburg* 18:30 - 19:30: City Tours *Meeting point:* *Historische Wurstkuchl, Thundorferstr. 3, 93047 Regensburg*

Monday, March 10, 2025, 19:30 - 01:30 h

Time	Social Evening
19:30 - 01:30	**Dinner Herzogssaal** Domplatz 3, 93047 Regensburg Short presentation about the Bavarian AI Network *Michael Klimke, baiosphere*

Tuesday, March 11, 2025, 08:15 - 08:45 h

Time	Welcome Coffee
08:15 - 08:45	*OTH Campus, D-Building, Foyer*

Tuesday, March 11, 2025, 08:45 - 10:10 h

	Session 6 **Ultrasound & OCT** Session Chair: Katharina Breininger (Würzburg), Andreas Maier (Erlangen)
08:45 **V17**	**Real-Time Landmark Guidance for Radial Head Localization in Ultrasound Imaging** *Lennart Meyling, Christoph Großbröhmer, Jürgen Lichtenstein,* *Mattias P. Heinrich, Lasse Hansen* EchoScout GmbH, Lübeck Institute of Medical Informatics, University of Lübeck

09:00 **V18**	**Ultrasound-based 3D Reconstruction of Residual Limbs using Electromagnetic Tracking** *Pauline Heine, Luise Robra, Jan Komposch, Janis Börsig, Jonas Bornmann, Andreas Leiniger, Rainer Brucher, Alfred M. Franz* Institute for Medical Engineering and Mechatronics, Ulm University of Applied Sciences
09:15 **V19** ★	**Autocalibration for 3D Ultrasound Reconstruction in Infant Hip Dysplasia Screening** *Wiebke Heyer, Christian Weihsbach, Christoph Otte, Jürgen Lichtenstein, Sebastian Lippross, Mattias P. Heinrich, Lasse Hansen* Institute of Medical Informatics, University of Lübeck
09:30 **V20**	**Weakly Supervised Segmentation of HRF in OCT with Compact Convolutional Transformers and SAM 2** *Olivier Morelle, Justus Bisten, Maximilian WM. Wintergerst, Robert P. Finger, Thomas Schultz* B-IT and Department of Computer Science, University of Bonn Department of Ophthalmology, University Hospital Bonn
09:45 **V21** ★	**Bridging Gaps in Retinal Imaging** *Timo Kepp, Julia Andresen, Fenja Falta, Heinz Handels* German Research Center for Artificial Intelligence, Lübeck Institute of Medical Informatics, University of Lübeck
10:00 **I02**	**KI im Gesundheitswesen – Vision 2030** *Tobias Heimann* Siemens Healthineers

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Tuesday, March 11, 2025, 10:10 - 10:25 h

Time	**Coffee Break**
10:10 - 10:25	*OTH Campus, D-Building, Foyer* Coffee/tea and snacks Industry Fair

Tuesday, March 11, 2025, 10:25 - 10:50 h

	Postersession 2 Intro Session Chair: Jürgen Frikel (Regensburg)
10:25 - 10:50	*OTH Campus, D-Building, Foyer*

Tuesday, March 11, 2025, 10:50 - 11:50 h

	Postersession 2 *OTH Campus, D-Building, Foyer*
P25	**Abstract: Nuclear Pleomorphism in Canine Cutaneous Mast Cell Tumors** *Andreas Haghofer, Eda Parlak, Alexander Bartel, Taryn A. Donovan, Charles-Antoine Assenmacher, Pompei Bolfa, Michael J. Dark, Andrea Fuchs-Baumgartinger, Andrea Klang, Kathrin Jäger, Robert Klopfleisch, Sophie Merz, Barbara Richter,Yvonne Schulman, Hannah Janout, Jonathan Ganz, Josef Scharinger, Marc Aubreville, Stephan M. Winkler, Matti Kiupel, Christof A. Bertram* University of Applied Sciences Upper Austria, Hagenberg, Austria & Johannes Kepler University, Lins, Austria
P26	**Abstract: Leveraging Image Captions for Selective Whole Slide Image Annotation** *Jingna Qiu, Marc Aubreville, Frauke Wilm, Mathias Öttl, Jonas Utz, Maja Schlereth, Katharina Breininger* Department AI in Biomedical Engineering, FAU Erlangen-Nürnberg
P27	**Abstract: Würstchen: An Efficient Architecture for Large-Scale Text-to-Image Diffusion Models** *Pablo Pernias, Dominic Rampas, Mats L. Richter, Christopher J. Pal, Marc Aubreville* Luma AI, Inc.
P28	**Enhancing Zero-Shot Learning in Chest X-ray Diagnostics using BioBERT for Textual Representation** *Prakhar Bhardwaj, Sheethal Bhat, Andreas Maier* Pattern Recognition Lab, FAU Erlangen-Nürnberg
P29	**Abstract: Simulation-informed Learning for Time-Resolved Angiographic Contrast Agent Concentration Reconstruction** *Noah Maul, Annette Birkhold, Fabian Wagner, Mareike Thies, Maximilian Rohleder, Philipp Berg, Markus Kowarschik, Andreas Maier* Pattern Recognition Lab, FAU Erlangen-Nürnberg
P30	**U-Net and GAN for Virtual Contrast in Breast MRI: How Do They Compare to Real Contrast Images?** *Aju George, Hannes Schreiter, Julian Hossbach, Tri-Thien Nguyen, Ihor Horishnyi, Chris Ehring, Shirin Heidarikahkesh, Lorenz A. Kapsner, Frederik B. Laun, Michael Uder, Sabine Ohlmeyer, Sebastian Bickelhaupt, Andrzej Liebert* Institute of Radiology, University Hospital Erlangen, FAU Erlangen-Nürnberg

P31	**Abstract: Client Security Alone Fails in Federated Learning: 2D and 3D Attack Insights** *Santhosh Parampottupadam, Ralf Floca, Dimitrios Bounias, Benjamin Hamm, Saikat Roy, Sinem Sav, Maximilian Zenk, Klaus Maier-Hein* Medical Faculty Heidelberg, University of Heidelberg
P32	**Abstract: Selective Reduction of CT Data for Self-Supervised Pre-Training Improves Downstream Classification Performance** *Daniel Wolf, Tristan Payer, Catharina S. Lisson, Christoph G. Lisson, Meinrad Beer, Michael Götz, Timo Ropinski* Visual Computing Research Group, Institute of Media Informatics, Ulm University Medical Center
P33	**Abstract: Death by Retrospective Undersampling: Caveats and Solutions for Learning-Based MRI Reconstructions** *Junaid R. Rajput, Simon Weinmueller, Jonathan Endres, Peter Dawood, Florian Knoll, Andreas Maier, Moritz Zaiss* Institute of Neuroradiology, University Hospital Erlangen, FAU Erlangen-Nürnberg
P34	**Two-Stage Approach for Low-Dose and Sparse-Angle CT Reconstruction using Backprojection** *Tim Selig, Patrick Bauer, Jürgen Frikel, Thomas März, Martin Storath, Andreas Weinmann* Hochschule Darmstadt
P35	**Learned Shift-Variant CBCT Reconstruction Weights for Non-continuous Trajectories** *Chengze Ye, Linda-Sophie Schneider, Yipen Sun, Mareike Thies, Andreas Maier* Pattern Recognition Lab, FAU Erlangen-Nürnberg
P36	**Self-Supervised 3D Vision Transformer Pre-training for Robust Brain Tumor Classification** *Danilo Weber Nunes, David Rauber, Christoph Palm* Regensburg Medical Image Computing (ReMIC), OTH Regensburg
P37	**Abstract: Evolutionary Normalization Optimization Boosts Semantic Segmentation Network Performance** *Luisa Neubig, Andreas M. Kist* Department Artificial Intelligence in Biomedical Engineering, FAU Erlangen-Nürnberg
P38	**Integration of Key-value Attention into Pure and Hybrid Transformers for Semantic Segmentation** *DeShin Hwa, Tobias Holmes, Klaus Drechsler* BMI Lab, Aachen University of Applied Sciences

P39	**Category-fragment Segmentation Framework for Pelvic Fracture Segmentation in X-ray Images** *Daiqi Liu, Fuxin Fan, Andreas Maier* Pattern Recognition Lab, FAU Erlangen-Nürnberg
P40	**DualPath-FFNet: Dynamic Fusion of Pre-trained Features with Sigmoid-gated Attention for Improved Medical Image Segmentation** *Sadat H. Chowdhury, Mohamed Y. Jabarulla, Hinrich B. Winther, Steffen Oeltze-Jafra* Peter L. Reichertz Institute for Medical Informatics Hannover Medical School
P41	**Abstract: Longitudinal Segmentation of MS Lesions via Temporal Difference Weighting** *Maximilian R. Rokuss, Yannick Kirchhoff, Saikat Roy, Balint Kovacs, Constantin Ulrich, Tassilo Wald, Maximilian Zenk, Stefan Denner, Fabian Isensee, Philipp Vollmuth, Jens Kleesiek, Klaus Maier-Hein* German Cancer Research Center (DKFZ) Heidelberg
P42	**Internal Organ Localization using Depth Images: A Framework for Automated MRI Patient Positioning** *Eytan Kats, Kai Geißler, Jochen G. Hirsch, Stefan Heldman, Mattias P. Heinrich* Institute of Medical Informatics, University of Lübeck
P43	**Leveraging Multiple Total Body Segmentators and Anatomy-Informed Post-processing for Segmenting Bones in Lung CTs** *Lukas Förner, Kartikay Tehlan, Constantin Bauer, Josua A. Decker, Thomas Wendler* Department of Diagnostic and Interventional Radiology and Neuroradiology, University Hospital Augsburg
P44	**Evaluation of TransUNet for the Segmentation of Retinal Structures in OCT-A** *Leonie Schüßler, Anna-Sophia Hertlein, Alexander K. Schuster, Stefan Wesarg* Fraunhofer Institute for Computer Graphics Research IGD, Technical University of Darmstadt
P45	**Camera-based Guide Wire Tracking for a Hybrid Neurovascular Intervention Training System** *Sonja Wichelmann, Roman Leonov, Claudia Rittmüller, Torben Pätz* Fraunhofer Institute for Digital Medicine MEVIS, Lübeck

P46	**Abstract: Accurate Device Tracking in X-ray Leveraging Supplementary Cue-Driven Self-Supervised Features** *Saahil Islam, Venkatesh Narasimha Murthy, Dominik Neumann, Serkan Cimen, Puneet Sharma, Andreas Maier, Dorin Comaniciu, Florin Ghesu* Siemens Healthineers
P47	**Abstract: Challenges of Sparse and Irregular Medical Image Time Series** *Nico Disch, Saikat Roy, Robin Peretzke, Constantin Ulrich, David Zimmerer, Klaus H. Maier-Hein* German Cancer Research Center (DKFZ) Heidelberg
S02	**Abstract: Learned Image Compression for HE-stained Histopathological Images via Stain Deconvolution** *Maximilian Fischer, Peter Neher, Tassilo Wald, Constantin Ulrich, Peter Schüffler, Shuhan Xiao, Silvia Dias Almeida, Alexander Muckenhuber, Rickmer Braren, Michael Götz, Jens Kleesiek, Marco Nolden, Klaus Maier-Hein* German Cancer Research Center (DKFZ) Heidelberg
V23	**Preservation of Image Content in Stain-to-Stain Translation for Digital Pathology** *Boqiang Huang, Wissem Benjeddou, Nadine S. Schaadt, Johannes Lotz, Friedrich Feuerhake, Dorit Merhof* Institute of Image Analysis and Computer Vision, University of Regensburg

Tuesday, March 11, 2025, 11:50 - 12:50 h

Time	**Lunch Break**
11:50 - 12:50	*OTH Campus, D-Building, Foyer* Lunch Industry Fair 11:55 - 12:45: Program Committee Meeting *(OTH Campus, K-Building, K 218)* 12:15 - 12:50: Guided tour to the OTH research facilities *(Meeting point at the Conference help desk)*

Tuesday, March 11, 2025, 12:50 - 13:30 h

Time	**Keynote 3** Session Chair: Thomas Wittenberg (Erlangen)
12:50 - 13:30	**Autonomous Surgery from a Surgeon's Perspective** *Dirk Wilhelm* Minimally Invasive Therapeutic Interventions (MITI) Klinikum rechts der Isar Technical University of Munich

Tuesday, March 11, 2025, 13:30 - 14:30 h

	Session 7 **Digital Pathology** Session Chair: Dorit Merhof (Regensburg), Michael Götz (Ulm)
13:30 **V22** ★	**Histologic Dataset of Normal and Atypical Mitotic Figures on Human Breast Cancer (AMi-Br)** *Christof A. Bertram, Viktoria Weiss, Taryn A. Donovan, Sweta Banerjee, Thomas Conrad, Jonas Ammeling, Robert Klopfleisch, Christopher Kaltenecker, Marc Aubreville* University of Veterinary Medicine Vienna
14:00 **V24** ★	**Automation Bias in AI-Assisted Medical Decision-Making under Time Pressure in Computational Pathology** *Emely Rosbach, Jonathan Ganz, Jonas Ammeling, Andreas Riener, Marc Aubreville* Technische Hochschule Ingolstadt
14:15 **V25**	**Abstract: Re-identification from Histopathology Images** *Jonathan Ganz, Jonas Ammeling, Samir Jabari, Katharina Breininger, Marc Aubreville* Technische Hochschule Ingolstadt

★: Among the seven best entries in the review process

Tuesday, March 11, 2025, 14:15 - 14:35 h

Time	**Coffee Break**
14:15 - 14:35	*OTH Campus, D-Building, Foyer* Coffee/tea and snacks Industry Fair

Tuesday, March 11, 2025, 14:35 - 15:35 h

	Session 8 **Segmentation** Session Chair: Hristina Uzunove (Lübeck), Andreas Kist (Erlangen)
14:35 **V26**	**AnatoMix: Anatomy-aware Data Augmentation for Multi-organ Segmentation in CT** *Chang Liu, Fuxin Fan, Annette Schwarz, Andreas Maier* Pattern Recognition Lab, FAU Erlangen-Nürnberg
14:50 **V27**	**Segmentation of Spinal Necrosis Zones in MRI** *Janine Hürtgen, Sylvia Saalfeld, Robert Kreher, Mathias Becker, Georg Rose, Georg Hille* Institute for Medical Engineering, Otto von Guericke University Magdeburg

15:05 V28	**Augmented Reality Prompts for Foundation Model-based Semantic Segmentation** *Michael Schwimmbeck, Christopher Auer, Johannes Schmidt, Stefanie Remmele* Research Group Medical Technologies, University of Applied Sciences Landshut Chair for Visual Computing, FAU Erlangen-Nürnberg
15:20 V29	**Abstract: nnU-Net Revisited** *Fabian Isensee, Tassilo Wald, Constantin Ulrich, Michael Baumgartner, Saikat Roy, Klaus Maier-Hein, Paul F. Jäger* Division of Medical Image Computing, German Cancer Research Center (DKFZ) Heidelberg

Tuesday, March 11, 2025, 15:35 - 16:05 h

Time	**BVM Award** Session Chairs: Heinz Handels (Lübeck), Christoph Palm (Regensburg)
15:35 - 16:05	**Learning to Learn Neural Representations with Limited Data and Supervision** *Azade Farshad* Chair for Computer Aided Medical Procedures & Augmented Reality TU Munich

Tuesday, March 11, 2025, 16:05 - 16:30 h

Time	**Closing** Session Chair: Christoph Palm (Regensburg), Heinz Handels (Lübeck)
16:05 - 16:30	Conference Awards & Closing Session Invitation to BVM 2026 in Lübeck, 15. - 17. March 2026

Tuesday, March 11, 2025, 18:00 - 18:40 h

Time	**Activity**
18:00 - 18:40	Post-Conference Running Event *Meeting point: Haus der Bayerischen Geschichte, Donaumarkt 1, 93047 Regensburg*

Tuesday, March 11, 2025, 19:30 - 21:30 h

| Time	**Dinner**
19:30 - 21:30	Post-Conference Dinner

Conference Opening Reception

We are pleased to invite you to the Conference Opening Reception at the BVM Conference!

- Date: Sunday, March 9, 2025
- Time: 17:30 - 21:30h, directly after the tutorials
- Location: K-Foyer, Galgenbergstr. 32, 93053 Regensburg

Start the conference in a relaxed atmosphere and take the opportunity to exchange ideas with other participants over a few snacks and the legendary Bavarian beer (with or without alcohol).

We look forward to a successful start!
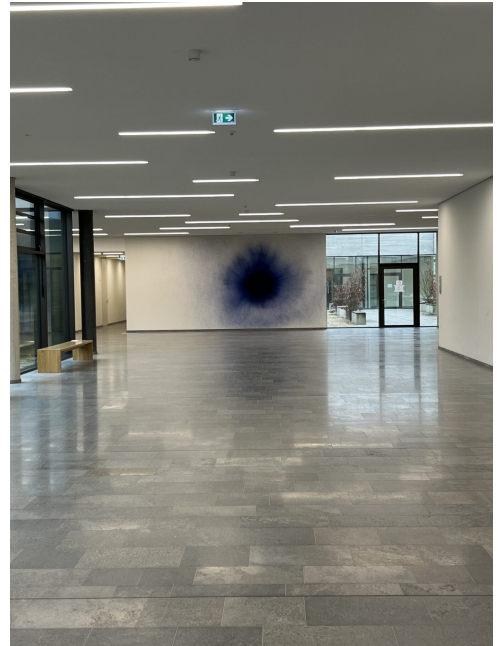
Social Evening

The Duke's Hall, the core of which dates back to the early Middle Ages, was redesigned by the Wittelsbach dynasty around 1220 and has been preserved to this day.

The Herzogssaal has served as a meeting place for the Bavarian dukes since 976 and is demonstrably the oldest surviving representative building of the Bavarian state. It is located in the heart of Regensburg's old town, within sight of St. Peter's Cathedral. https://www.herzogssaal.com

Registration for the social evening is optional and can be done together with registration for the conference via the registration page. Please note that the number of participants is limited.

You can look forward to an impressive social evening with convivial exchanges, stimulating discussions and a great atmosphere. In addition to delicious food and drinks, there will also be a dance floor with a DJ.

Address:
Domplatz 3
93047 Regensburg

Activities

In addition, there will be a number of BVM-related activities that are optionally open to all participants:

City Tours

(with registration, small contribution towards costs)

Meeting point for both options:
Historische Wurstkuchl
Thundorferstr. 3
93047 Regensburg

Both tours end at the Herzogssaal, where the social event will take place.

Option 1: Classic Walking Tour

Patricians, citizens, bishops, craftsmen as well as demons and saints have had a strong influence on Regensburg's history. The tour focuses on the Middle Ages, as the city's most important sights, such as the cathedral, the Old Town Hall and the Golden Tower, date from this period. Central squares such as Haidplatz and Neupfarrplatz will be visited and the picturesque alleyways of the old town, e.g. the Tändler and Kramer alleyways will be explored. All historical facts are told from the perspective of everyday medieval life to convey a vivid picture of the town and its inhabitants.

Option 2: Climate change then and now - nature makes history

Embark and explore on a journey how the forces of nature have shaped historic Regensburg and how its inhabitants have endeavored to resist them. Learn how unpredictable climate patterns transformed Regensburg into the northernmost city of Italy, how a comet influenced local fashion trends, and how a true native of Regensburg once attempted to dam the Mediterranean. Uncover the city's history through the dynamic relationship between its people and the environment, and let us show you why, contrary to popular belief, Regensburg is not actually situated on the Danube!

Running Events

(without registration, free of charge)

We also invite you to take part in a **guided running event** through Regensburg's **old town**, covering a distance of around **5 km**. The route starts and ends at the Bavarian Museum, leading over the Iron Bridge, through the Inselpark to the weir and back again. It offers a beautiful view of the city's surroundings and is suitable for all participants, regardless of fitness level, with a **comfortable, compatible pace** for everyone. Take the opportunity to get moving and explore the city in a relaxed and enjoyable way.

- Monday 10th March morning (7:00 - 7:40am)

- Monday 10th March afternoon (6:20 - 7:00pm)

- Tuesday 11th March afternoon (6:00 - 6:40pm)

Meeting point:
Haus der Bayerischen Geschichte,
Donaumarkt 1, 93047 Regensburg
https://www.museum.bayern/museum.html

Guided tours of the OTH research facilities

(with registration, free of charge)

Meeting point:
BVM conference help desk beside the lecture hall

Offering guided tours of the OTH research facilities provides a unique opportunity for visitors to gain insight into research activities in Biomedical Engineering and Health Technology (RCHST/RCBE).

- Monday 10th March, during lunch break

- Tuesday 11th March, during lunch break

Post-Conference Dinner

(self-payer)

After the conference, we would like to offer all those who remain in the city the opportunity to round off the evening in a get-together. We are organizing a dinner together in a cosy restaurant.

Brauhaus am Schloss, Waffnergasse 6 - 8, 93047 Regensburg

We will reserve the table - but participants will have to pay for their own food and drinks.

In order to get a rough overview of how many people are interested and to be able to reserve a table, please register without obligation during the registration process. Spontaneous further confirmations or last-minute cancellations can still be made on site at the conference help desk.

Venue

Conference Venue

Zentrales Hörsaalgebäude
Hörsaal A 001
Galgenbergstr. 30
93053 Regensburg

Tutorials/Opening Reception Venue

OTH Campus
Building K (Faculty Computer Science and Mathematics)
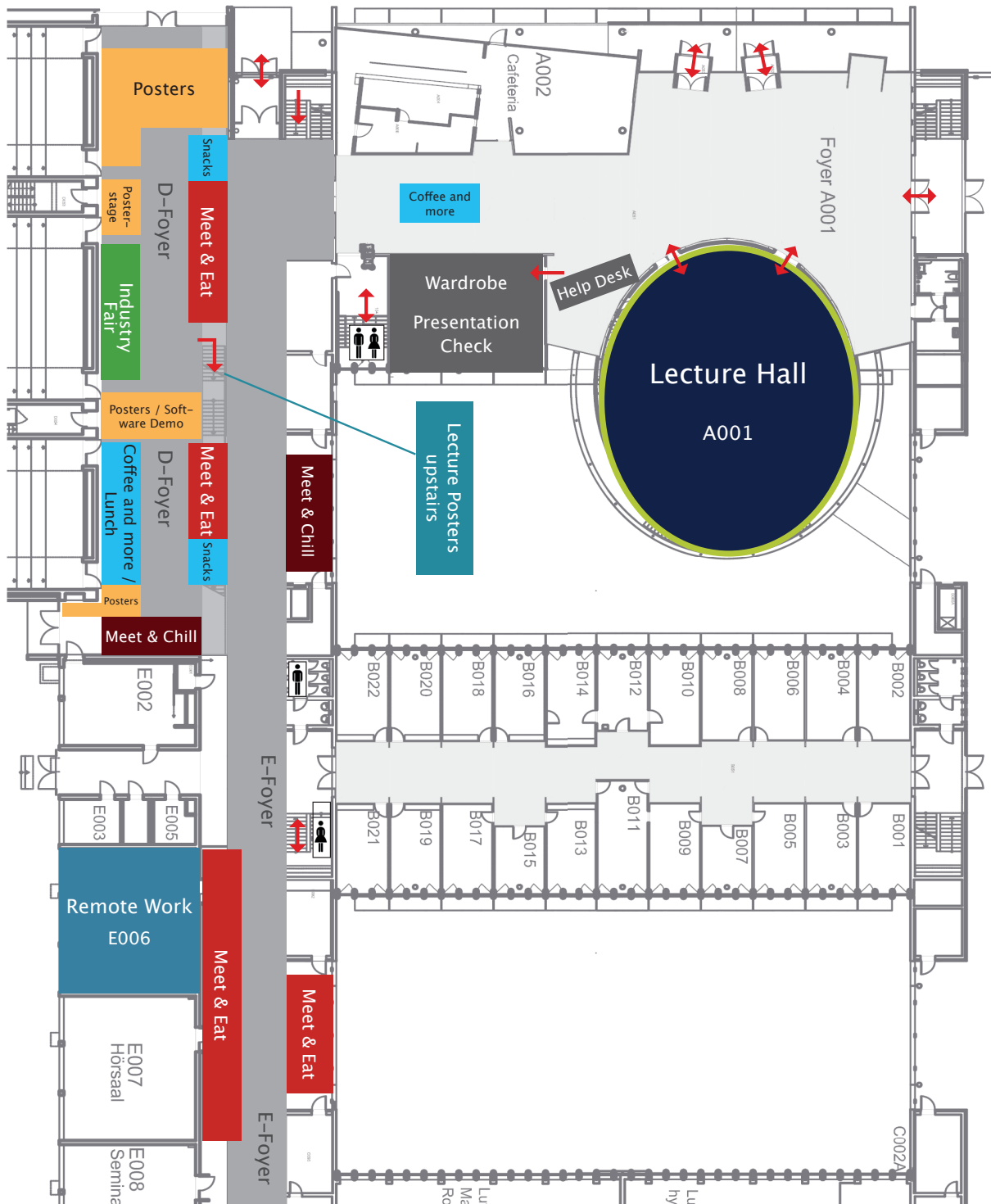Galgenbergstr. 30, 93053 Regensburg

Campus Plan

OTH Campus
Building A and D
Lecture Hall A 001
Galgenbergstr. 30
93053 Regensburg

Site Map

ℹ️ For those who would like to do some research away from home, there is the "Remote Work" room in E006. Mouse, keyboard and monitors will be provided.

Legend

🟥 - Important locations for the event

Meeting point for the City Tours:
Historische Wurstkuchl, Thundorferstr. 3,
93047 Regensburg

Post-Conference Dinner:
Brauhaus am Schloss, Waffnergasse 6 - 8,
93047 Regensburg

BVM Event Location:
OTH Regensburg, Galgenbergstraße 30-32,
93053 Regensburg

Meeting point for the Running Events:
Haus der Bayerischen Geschichte, Donaumarkt 1,
93047 Regensburg

Social Evening:
Herzogssaal, Domplatz 3,
93047 Regensburg

Meeting point for Program Committee Dinner:
Kokono, Fort-Skelly-Straße 24,
93053 Regensburg

⬜ - Places of interest - Historical or cultural sites

Old Town Hall Regensburg

Regensburg Cathedral

University of Regensburg

University Hospital Regensburg

Stone Bridge Regensburg

Train station - Public transport connections

TechBase Regensburg

Jahnstadion Regensburg

City Map Overview

Medieval Old Town

**Campus of
OTH Regensburg
and
Regensburg University**