MICHAEL ANTON BAUMGARTNER

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CURRENT WORK

German Cancer Research Center (DKFZ), MIC November 2019 – Current
PhD Student
- Working on self-configuring medical object detection and instance segmentation methods
- Developed novel methods which ranked highly in multiple international challenges
- Deployment of state-of-the-art neural networks into clinical applications
- Member of five internal advisory committees of PhD students and three Master students.

MONAI Research Working Group January 2022 – Current
Co-Chair
- Set the agenda for regular group meetings to discuss emerging methods in MIC
- Organisation of the semantic segmentation track to identify recent advances and opportunities
- Work with an international team of scientists from NVIDIA, Kings College London and others

EDUCATION

RWTH Aachen University, Germany *October 2017 – September 2019*
- Master of Science in *Electrical Engineering, Information Technology and Computer Engineering*
- Master's Thesis: *Joint Detection and Classification of Suspicious Lesions in Contrast Enhanced MRI* at the Institute of Imaging and Computer Vision (LfB)
- **Dean's List**: awareded to the top 5% of the graduates

RWTH Aachen University, Germany *October 2014 – September 2017*
- Bachelor of Science in *Electrical Engineering, Information Technology and Computer Engineering*
- Bachelor's Thesis: *Calibration and Registration of a Multi-Camera System* at the Chair for Medical Information Technology (MedIT)

Gymnasium Marienschule, Germany, Euskirchen *August 2006 – July 2014*

PROFESSIONAL EXPERIENCE

Institute of Imaging and Computer Vision (LfB) July 2019 – October 2019
Student Research Assistent
- Work on computer aided detection and classification methods for breast cancer diagnosis
- Develop neural networks to classify suspicious lesions in a large cohort of 5000 MRI scans

Daimler AG April 2019 – September 2019
Internship
- Design computer vision based algorithms to identify extraordinary road situations on highways
- Web based scraping of data including data cleaning and training of neural networks with Tensorflow
- Creation of hardware-in-the-loop test scenarios for improved turnaround times

Institute for Automation of Complex Power Systems (ACS) October 2016 – February 2017
Tutor Computer Science Lab 2
- Taught students advanced knowledge of C++ programming.

Institute for Human Machine Interaction (MMI) April 2016 – July 2016
Tutor Computer Science Lab 1

· Taught students basic knowledge of C++ programming and data structures.

SELECTED PUBLICATIONS

Deep-learning based detection of vessel occlusions on CT-angiography in patients with suspected acute ischemic stroke
Brugnara, G.*, **Baumgartner, M.***, Scholze, E. D.*, et al.
Nature Communications 14.1 (2023): 4938

Taming Detection Transformers for Medical Object Detection
Ickler, M. K.*, **Baumgartner, M.***, et al.
BVM Workshop (pp. 183-188), Ranked Third for Best Scientific Contribution

nnDetection: A Self-configuring Method for Medical Object Detection
Baumgartner, M.*, Jäger P.F.*, Isensee F., Maier-Hein K.H.
Medical Image Computing and Computer Assisted Intervention 2021

Multi Scale Curriculum CNN for Context-Aware Breast MRI Malignancy Classification
Haarburger, C., **Baumgartner, M.**, et al.
Medical Image Computing and Computer Assisted Intervention 2019, Oral Presentation

AWARDS AND COMPETITIONS

TDSC-ABUS Challenge, MICCAI 2023
Ranked first overall and second in the detection task.
Stock R.*, Baumgartner M.*, Kirchhoff Y.*, Rokuss M. R.*, Maier-Hein K.H.

Third Rank Best Paper Award BVM 2023
Awarded to the best scientific contributions.
Ickler M. K.*, Baumgartner M.*, Roy S., Wald T., Maier-Hein K.H.

Best Presentation Award BVM 2022
Awarded to the best oral presentation.
Baumgartner M., Jäger P.F., Isensee F., Maier-Hein K.H.

Best Challenge Reviewer Award MICCAI 2022
Awarded to the four best reviewers of MICCAI 2022 challenges.
Baumgartner M.

Mediastinal Lesion Analysis Challenge, MICCAI 2022
Ranked third in the MELA 2022 challenge. Three out of five best performing solutions (including winning solution) based on nnDetection.
Baumgartner M., Full P., Maier-Hein K.H.

Helmholtz Imaging - Hacking for Health 2022
Ranked first in the health track of the Helmholtz Imaging - Hacking for Health hackathon.
Baumgartner M.*, Wald T.*, Köhler G.*, Maier-Hein K.H.

Aneurysm Detection And segMentation Challenge, MICCAI 2020
Ranked first in the the aneurysm detection track of the ADAM 2020 Challenge.
Baumgartner M., Jäger P.F., Isensee F., Maier-Hein K.H.

SKILLS

Languages German(native speaker), English(good command), Hungarian(basic knowledge)
Programming Languages Python, C++, Matlab, Java(basic knowledge), Latex
Frameworks Machine/Deep Learning (PyTorch, Tensorflow, Scikit-Learn), Pandas, Streamlit
Tools Git with CI/CD, Docker, GCP (Compute Engine), MS Office, OS (Linux, Mac OS, Windows)

Soft Skills Good communication, Teamwork, Interdisciplinary thinking, Leadership of small groups

* equal contribution