

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:** awarded 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 Assistant

- 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

* equal contribution

AWARDS AND COMPETITIONS

BVM Third Rank Best Paper Award BVM 2023

Awarded to the best scientific contributions

Best Presentation Award BVM 2022

Awarded to the best oral presentation

Best Challenge Reviewer Award MICCAI 2022

Awarded to four reviewers of challenges

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

Helmholtz Imaging - Hacking for Health 2022

Ranked first in the health track of the Helmholtz Imaging - Hacking for Health hackathon.

Aneurysm Detection And segMentation Challenge, MICCAI 2020

Ranked first in the the aneurysm detection track of the ADAM 2020 Challenge

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