Nick Lemke

nick.lemke@gris.informatik.tu-darmstadt.de Nick Lemke

Employment History

05/2024 – ····· **Ph.D. student,** MEC-Lab, TU Darmstadt
Research on resource-constrained AI for medical image analysis

10/2023 – 12/2023 **Research Assistant,** MEC-Lab, TU Darmstadt
Implementation of federated NCA training

04/2023 – 09/2023 **Student Assistant,** Fraunhofer IGD, Darmstadt
Implementation of a parallel packing algorithm for 3D printing

11/2022 – 02/2023 **Research Assistant,** MEC-Lab, TU Darmstadt
Implementation and evaluation of a continual learning method

2017 – 2023 **Private tutoring** in high school level computer science, mathematics, physics, chemistry, and English.

Education

05/2024 – ····· **Ph.D. student,** MEC-Lab, TU Darmstadt
Research on resource-constrained AI for medical image analysis

01/2023 – 04/2024 **M.Sc. Computer Science,** TU Darmstadt.
Thesis title: *Distribution-Aware Replay for Continual MRI Segmentation*.

10/2020 – ····· **B.Sc. Mathematics,** TU Darmstadt.

10/2019 – 01/2023 **B.Sc. Computer Science,** TU Darmstadt.
Thesis title: *Convert a high-polygon mesh to a low-polygon mesh with a displacement map*.

Research Publications

Journal Articles

1. C. Gonzalez, **N. Lemke**, G. Sakas, and A. Mukhopadhyay, "What is wrong with continual learning in medical image segmentation?," 2023. arXiv: 2010.11008.

Conference Proceedings

1. **N. Lemke**, C. González, A. Mukhopadhyay, and M. Mundt, "Distribution-aware replay for continual mri segmentation," in *International Workshop on Personalized Incremental Learning in Medicine*, Springer, 2024, pp. 73–85.

Skills

Languages **German** (Native language), **English** (Fluent)
Coding Java, C/C++, Python, C#
Python Packages PyTorch, NumPy, SciPy, Pandas
C++ APIs OpenMP, CUDA
Misc. LaTeX typesetting, Git, MS-Office, Linux

Miscellaneous Experience

Awards and Achievements

2023

- **Winner of the AI Competition *Wettbewerb KI in der Medizin*** held at TU Darmstadt.
  Topic: Classification and onset detection of seizures in EEG recordings.
- **Second place in the Hackathon *ProKI*** hosted by the departments of mechanical engineering at TU Darmstadt and Karlsruhe Insitute of Technology, as well as Fraunhofer LBF, Verein Deutscher Ingenieure and the Freudenberg Group.
  Topic: Predicting a wear and tear index for milling tools.