

Youssef Shoeb

Ph.D. Computer Science Student

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ABOUT

- I am a PhD student at the Mathematical Modeling and Industrial Life Cycles faculty of the Technical University of Berlin. I research the topic of Out-of-Distribution detection, tracking, and retrieval in autonomous perception systems. I am also a machine learning (ML) researcher for Continental AG, where I am responsible for the algorithm development of an automatic corner-case detection system.

EXPERIENCE

- **Continental AG** Berlin, Germany
Machine Learning Researcher *September 2022 - Present*
 - Part of the central pre-development of artificial intelligence (AI) team, where we are responsible for developing innovative technologies to enable the use of AI in Continental products.
 - Researched different techniques for performing verification of neural networks during run-time and active learning, focusing on edge-case detection using uncertainty estimation methods.
- **Fraunhofer FKIE** Bonn, Germany
Research Assistant *November 2020 - July 2022*
 - Development of a simulation environment with an interface for running reinforcement learning experiments.
 - Implementation and evaluation of different reinforcement learning algorithms for multi-agent strategic games.
 - Investigation into the usability of graph neural networks for dynamic communication network modeling.
 - Development of a network optimization framework using graph neural networks.
- **Center For Information Services and High Performance Computing (ZIH)** Dresden, Germany
Research Assistant *February 2019 - July 2019*
 - : Investigated the use of different model parallelization and data parallelization techniques for implementing different neural network architectures in a distributed computing environment.

EDUCATION

- **Technical University of Berlin** Berlin, Germany
Doctor of Science in Computer Science *2023 - Current*
 - **Topic:** Towards a Deeper Understanding of Out-of-Distribution Detection, Tracking, and Retrieval in Autonomous Perception Systems.
- **University of Bonn** Bonn, Germany
Master of Science in Computer Science *October 2019 - June 2022*
 - **Major:** Intelligent Systems.
 - **GPA:** 1,2/5 (German Scale - A).
- **German University in Cairo** Cairo, Egypt
Bachelor of Science in Media Engineering and Technology *September 2015 - February 2019*
 - **Major:** Computer Science and Engineering.
 - **GPA:** 1,2/5 (German Scale - A with High Honors).

PUBLICATIONS

- **Shoeb, Y.**, Chan, R., Schwalbe, G., Nowzad, A., Güney, F., & Gottschalk, H. (2024). Have we ever encountered this before? retrieving out-of-distribution road obstacles from driving scenes. In Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) (pp. 7396–7406).