Moritz Akiya Zanger

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ABSTRACT

My name is Moritz Zanger and I am a fourth-year Ph.D. candidate at the TU Delft. I am currently looking for a challenging position at the frontier of machine learning research. In my current work, I specialize in efficient uncertainty quantification methods for deep reinforcement learning. A long-term goal of mine is to endow autonomous agents with a self awareness of what they know to be true and what is the result of inductive generalization, a process tainted with uncertainty. I believe this ability will render crucial for the widespread deployment of many modern deep learning products, e.g., autonomous agents, trustworthy AI and truly diverse generative models.

EDUCATION

- **PH.D. CANDIDATE IN COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE** *June. 2021-present*
  Delft University of Technology, NL
  Supervised by Prof. Matthijs T. J. Spaan and Dr. Wendelin Böhmer
  Research Topic: Efficient Estimation of Epistemic Uncertainty in Deep Reinforcement Learning (working title).
  EU-Horizon project Epistemic AI (epistemic-ai.eu).

- **M.SC. MECHANICAL ENGINEERING** *Oct. 2017-Nov. 2020*
  Karlsruhe Institute of Technology, GER
  Final Grade: 1.2 - with distinction (94th percentile in class)
  Majors: Robotics • Medical Engineering
  Final Thesis • Supervised by Prof. Marius J. Zöllner
  Model-Based Reinforcement Learning for Constrained Policy Optimization in Robot Locomotion

- **B.SC. MECHANICAL ENGINEERING** *Oct. 2012 - Oct. 2017*
  Karlsruhe Institute of Technology, GER
  Final Grade: 1.6 (94th percentile in class)
  Majors: Engineering Design

EXPERIENCE

- **Research Center of Information Technology (FZI)**
  RESEARCH ASSISTANT - Dpt. Technical Cognitive Systems *Jan. 2021 - May 2021*
  Gradient estimation for trust-region methods in model-based reinforcement learning.

  RESEARCH ASSISTANT - Dpt. Intelligent Systems and Production Engineering *May 2019 - Dec. 2019*
  Natural language processing with pretrained models (BERT) for requirements management.

- **TOHOKU UNIVERSITY, JP** *Sep. 2015-Sep. 2016*
  RESEARCH ASSISTANT - Nagatani Field Robotics Lab
  Robust LIDAR mappings for autonomous navigation in hazardous terrains.

PUBLICATIONS

- Moritz A. Zanger, Karam Daaboul, and J. Marius. Zöllner *"Safe continuous control with constrained model-based policy optimization."* — 2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
- Moritz A. Zanger, Wendelin Böhmer, and Matthijs T. J. Spaan. *"Diverse Projection Ensembles for Distributional Reinforcement Learning"* — 2024 International Conference on Learning Representations (ICLR).
- Yaniv Oren, Moritz A. Zanger, Pascal R. van der Vaart, Matthijs T. J. Spaan and Wendelin Böhmer. *"Value Improved Actor Critic Algorithms"* — Preprint (Arxiv), 2025.
- Moritz A. Zanger, Pascal R. van der Vaart, Matthijs T. J. Spaan and Wendelin Böhmer. *"Contextual Similarity Distillation: Ensemble Uncertainties with a Single Model"* — Preprint (Arxiv), 2025.

TEACHING

- CS4210 Intelligent Decision Making Project, Instructor — TU Delft, NL, 2024 - present
- CSE3000 Bachelor Graduation Projects, Instructor: *Evaluating Robustness of Deep Reinforcement Learning for Autonomous Driving*. — TU Delft, NL, 2023
- CS4400 Deep Reinforcement Learning: Lecture notes. — TU Delft, NL, 2022 - present

SKILLS

TOOLS & FRAMEWORKS	Git • Jax • PyTorch • Tensorflow • Slurm • ROS • MuJoCo • Unity • CARLA • PTC Creo
LANGUAGES	Python • Java • SysML/UML • C++ • C# • SQL • MATLAB
SPOKEN LANGUAGES	German (fluent) • English (fluent, Toefl iBT 111/120) • Japanese (fluent) • Dutch(B1) • French(A1)

AWARDS & HONORS

2022	**MLSS Scholarship**, Machine Learning Summer School in Krakow, Poland.
2017-2020	**Students@Bosch Fellow**, Robert Bosch GmbH
2017	**GfSE Student Award**, Day of the Systems Engineering conference (TdSE) by the German Association for Systems Engineering (GfSE)
2015-2016	**DAAD Annual Scholarship**, German Academic Exchange Service (DAAD)

REFERENCES

Prof. Matthijs T. J. Spaan
Director • Sequential Decision Making • TU Delft
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Assistant Professor • Sequential Decision Making, TU Delft
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Dr. Frans A. Oliehoek
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