Boris Meinardus

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Google Scholar, LinkedIn, Github, Medium, YouTube

Experience

- **Sakana AI** — Tokyo, Japan
  Research Scientist — *11/2024 - Present*
  - **Open-Ended Model and Synthetic Task Coevolution**: Implement system for **endlessly coevolving** an LLM-based multi-agent system alongside a continuously evolving synthetic task pool.
    Model Archive Evolution: Leverage evolutionary model merging as genetic operators and **quality-diversity** algorithms for selection. Our population achieves better coverage than baselines on downstream benchmarks.
    Task Archive Evolution: Design LLM-based agent to **generate novel synthetic tasks** implemented in code.
    Infrastructure: Implement system using Celery orchestration across GPU workers, handling model merging, real-time vLLM inference, and sandboxed Docker evaluation with **seamless scalability**.
  - **Diffusion for LM reasoning**: Distill the reasoning process of an LLM into a Diffusion Model.
  - **VLM Webagents**: Develop Process Reward Model (PRM) for training VLM-based Webagents with RL.
- **Technical University of Darmstadt** — Darmstadt, Germany
  Student Researcher – Reliable Multimodal AI Lab (Prof. Marcus Rohrbach) — *10/2023 - 09/2023*
  - **Modelling**: Develop multimodal LLM for video understanding using PyTorch leveraging distributed training across 8 A100 GPUs. Beat state-of-the-art models by up to 11% on 3 benchmarks. First-author paper Chrono.
- **Fraunhofer Heinrich Hertz Institute** — Berlin, Germany
  Student Researcher – Applied Machine Learning — *04/2022 - 09/2023*
  - **Data Engineering**: Implement scraping and preprocessing units, retrieving data from varying sources.
  - **Neural Network Modelling**: Develop, implement, and tune graph neural network architecture for dynamic traffic flow prediction using PyTorch.
- **Fraunhofer Heinrich Hertz Institute** — Berlin, Germany
  Student Researcher - Photonic Components — *02/2019 - 03/2022*

Selected Publications

- **Chrono**: **B. Meinardus**, H. Rodriguez, A. Batra, A. Rohrbach, M. Rohrbach, **ICCV 2025**, MRR Workshop
- **Arena-Bench**: L. Kästner, T. Bhuiyan, T. A. Le, E. Treis, J. Cox, **B. Meinardus**, J. Kmiecik, R. Carstens, D. Pichel, B. Fatloun, N. Khorsandi, J. Lambrecht, **IROS and Robotics and Automation Letters (RA-L) Journal**, 2022

Projects

- **OELM Survey**: Contribute to Open-Endedness through Large Models (OELM) survey. Senior advisors include Tim Rocktäschel, Jeff Clune, Kenneth Stanley, Joel Lehman.
- **Implementation of RCPO**: Implement Reward Constrained Policy Optimization (RCPO) into stable-baselines3 Proximal Policy Optimization (PPO) using PyTorch. Reproduce results through experimental tracking using weights and biases. Write and submit respective article to the **ICLR Blog Track**.
- **Teaching ML on YouTube**: Teaching ML to over 90k subscribers since 2022.

Reviewing Experience

- **2025**: CVPR (Outstanding Reviewer), ICML, ICCV
- **2024**: CVPR

Education

- **Technical University of Berlin** — Berlin, Germany
  MSc Computer Science; GPA: 1.2/1.0 (equivalent to first-class honors) — *10/2021 – 09/2024*
  - **Thesis**: Exploring Multimodal Large Language Models for Video and Language Tasks (Grade 1.0/1.0)
- **Technical University of Berlin** — Berlin, Germany
  BSc Computer Engineering; GPA: 1.8/1.0 — *10/2018 – 09/2021*
  - **Thesis**: Deployment and Evaluation of Deep-Reinforcement-Learning-Based Navigation Approaches on Real Robots (Grade 1.0/1.0)

Relevant Skills

- **Programming**: Python, PyTorch, vLLM, Docker, GCP, Slurm