Jens Beißwenger

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PhD Student at the University of Tübingen
Excited about Robotics, Vision-Language-Action Models, and Reinforcement Learning

Education

PhD in Computer Science
2025 – Present

University of Tübingen

- **Advisors**: Dr. Wieland Brendel and Prof. Georg Martius
- **Scholarship**: Max Planck Society (IMPRS-IS)
- **Research**: Vision-language-action models (e.g., GR00T) and video-action models (e.g., Cosmos Predict 2.5) for humanoid robot control (Unitree G1, Inspire dexterous hands)
- **Student Representative**: IMPRS-IS student representative, communicating scholar concerns to the coordination office and executive board, and organizing events for doctoral researchers

Master of Science in Machine Learning
2022 – 2025

University of Tübingen

- **Advisor**: Prof. Andreas Geiger
- **Thesis**: Enhancing Model-based Reinforcement Learning for Autonomous Driving
  Model-based RL agent (modified DreamerV3) achieving state-of-the-art driving performance in CARLA with 8× fewer GPUs and 24× fewer samples
- **Selected Courses**: Self-Driving Cars, Computer Vision, Statistical & Probabilistic Machine Learning, Recurrent and Generative Artificial Neural Networks

Bachelor of Science in Computer Science
2017 – 2022

University of Karlsruhe (KIT)

- **Advisor**: Prof. Gerhard Neumann
- **Thesis @ Bosch Tübingen**: Improving the Sim2Real performance using the FFB6D network

Publications

For the latest publications (including pre-prints) and detailed citation statistics, see Google Scholar.

2025

CaRL: Learning Scalable Planning Policies with Simple Rewards — *CoRL*
B. Jaeger, D. Dauner, **J. Beißwenger**, S. Gerstenecker, K. Chitta, and A. Geiger

Hidden Biases of End-to-End Driving Datasets — *arXiv*
J. Zimmerlin, **J. Beißwenger**, B. Jaeger, A. Geiger, and K. Chitta

2024

PDM-Lite: A Rule-Based Planner for CARLA Leaderboard 2.0
J. Beißwenger

DriveLM: Driving with Graph Visual Question Answering **Oral** — *ECCV*
C. Sima, K. Renz, K. Chitta, L. Chen, H. Zhang, C. Xie, **J. Beißwenger**, P. Luo, A. Geiger, H. Li

Projects

PDM-Lite: Rule-Based Planner for CARLA Leaderboard 2.0
11/2023 – 04/2024

Autonomous Vision Group, University of Tübingen

- Developed PDM-Lite, a rule-based expert for CARLA Leaderboard 2.0

- Responsible for dataset collection and algorithm optimization
- Achieved 1st place (Map track) and 2nd place (Sensors track) in the CVPR 2024 CARLA Autonomous Driving Challenge
- Work based on Transfuser++ architecture with improvements

Software Development Practice
10/2019 – 03/2020

University of Karlsruhe, Germany

- Built and trained facial recognition CNN from scratch in Java/OpenCL
- Implemented cross-platform support (CPU/GPU/Movidius NCS)
- Optimized performance for various hardware configurations

Work Experience

Research Assistant
06/2023 – 02/2025

Autonomous Vision Group, University of Tübingen

- Developed and maintained exercises for the Self-Driving Cars course of Prof. Andreas Geiger, including cross-platform setup (Mac/Linux)
- Designed and evaluated practical student challenges on perception, planning, and control
- Supported autonomous driving research in the CARLA simulator, including data collection and experiment setup

Data Science Intern
09/2022 – 11/2022

KPMG Lighthouse, Stuttgart, Germany

- Developed ML-based text duplicate detection using Python/PyTorch for customer database analysis
- Conducted IT audits (IPE/ITAC) of a DAX40 company

Digital Skills Instructor
07/2021 – 03/2022

IBZ Karlsruhe, Germany

- Taught essential computer skills for refugees (Linux, Office suite, video conferencing)

(Co-)Mentored Students

Robin Uhrich – Student Research Assistant
10/2025 – Present

Autonomous Learning Group, University of Tübingen

- Trained and evaluated VLA (Vision-Language-Action) models for humanoid robot control, including teleoperation data collection

Tomasz Niewiadomski – Intern
10/2025 – 02/2026

Robust Machine Learning Group, University of Tübingen

- Hardware setup, maintenance, and real-world policy execution on the Unitree G1 humanoid robot

Honors & Awards

1st Place, University of Tübingen — *06/2024*

CVPR - CARLA Autonomous Driving Challenge (Map track: 1st, Overall: 2nd out of 40 teams)

1st Place, University of Tübingen — *08/2023*

Reinforcement Learning Hockey Tournament, Autonomous Learning Group, 89 participants

3rd Place, University of Tübingen — *01/2023*

Self-Driving Cars, Modular Pipeline, Autonomous Vision Group, 26 participants

e-fellows.net Scholarship, University of Tübingen — *11/2022*

Academic Network Member

2nd Place, Technical High School — *06/2016*

Jugend Forscht, Camera-controlled Model Railway, Regional Competition Ostwürttemberg

Technical Skills

Programming	Python, Java, C/C++
Libraries	PyTorch, JAX, NumPy, Pandas
Simulation	CARLA, Isaac Sim, MuJoCo
Robotics Hardware	Unitree G1 Humanoid, Inspire Dexterous Hands
Software	LaTeX, Microsoft Office Suite, TikZ, Git, Linux
Languages	German (native), English (proficient), Spanish (B1)