Jens Beißwenger

PhD Student at the University of Tübingen

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Education

2025 – Present | **University of Tübingen, Germany**
PhD in Computer Science; Robust Machine Learning Group
- Advisor: Dr. Wieland Brendel
- Scholarship: International Max Planck Research School for Intelligent Systems (IMPRS-IS)

2022 – 2025 | **University of Tübingen, Germany**
Master of Science in Machine Learning
- Advisor: Prof. Andreas Geiger
- Thesis: Enhancing Model-based Reinforcement Learning for Autonomous Driving
- Selected courses: Self-Driving Cars, Computer Vision, Statistical & Probabilistic Machine Learning, Recurrent and Generative Artificial Neural Networks

2017 – 2022 | **University of Karlsruhe (KIT), Germany**
Bachelor of Science in Computer Science
- Advisor: Prof. Gerhard Neumann
- Thesis project @ Bosch Tübingen: Improving the Sim2Real performance using the FFB6D network

Honors & Awards

06/2024 | **1st Place**, CVPR - Carla Autonomous Driving Challenge Map track, 2nd place overall, 40 participating teams
University of Tübingen

08/2023 | **1st Place**, Reinforcement Learning Hockey Tournament, Autonomous Learning Group, 89 participants
University of Tübingen

01/2023 | **3rd Place**, Self-Driving Cars, Modular Pipeline, Autonomous Vision Group, 26 participants
University of Tübingen

12/2022 | **5th Place**, Self-Driving Cars, Reinforcement Learning, Autonomous Vision Group, 26 participants
University of Tübingen

11/2022 | **e-fellows.net Scholarship**, Academic Network Member
University of Tübingen

10/2022 | **4th Place**, Self-Driving Cars, Imitation Learning, Autonomous Vision Group, 26 participants
University of Tübingen

06/2016 | **2nd Place**, Jugend Forscht, Camera-controlled Model Railway, Regional Competition Ostwürttemberg
Technical High School

06/2016 | **3rd Place**, Jugend Forscht, Wifi-Controlled Model Car, Regional Competition Ostwürttemberg
Technical High School

06/2015 **3rd Place**, Jugend Forscht, Camera-controlled Model Railway, Regional Competition Ostwürttemberg
Technical High School

Projects

06/2024 – 05/2025 **Autonomous Reading Group, University of Tübingen**
- Weekly reading group discussing recent papers about autonomous driving
- Critical analysis of state-of-the-art methods in autonomous systems
- Collaborative research discussions with peers and faculty

11/2023 – 04/2024 **Research Project, Autonomous Vision Group, University of Tübingen**
PDM-Lite: Rule-Based Planner for CARLA Leaderboard 2.0
- 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 novel improvements

10/2021 – 03/2022 **Maze Navigation App, University of Karlsruhe, Germany**
- Developed motion-controlled maze navigation app using eSense headphones
- Implemented real-time sensor data processing (gyroscope and accelerometer)
- Created intuitive user interface for motion-based game control

10/2019 – 03/2020 **Software Development Practice, 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

Publications

2025 **[1]** B. Jaeger, D. Dauner, **J. Beißwenger**, S. Gerstenecker, K. Chitta, and A. Geiger
CaRL: Learning Scalable Planning Policies with Simple Rewards
Conference on Robot Learning (CoRL)

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

2024 **[3] J. Beißwenger**
PDM-Lite: A Rule-Based Planner for CARLA Leaderboard 2.0
GitHub Repository

[4] C. Sima, K. Renz, K. Chitta, L. Chen, H. Zhang, C. Xie, **J. Beißwenger**, P. Luo, A. Geiger, H. Li
DriveLM: Driving with Graph Visual Question Answering
European Conference on Computer Vision (ECCV)

Work Experience

06/2023 – 02/2025 **Research Assistant, Autonomous Vision Group, University of Tübingen**
- Assisted in the exercises of the Self-Driving Cars course of Prof. Andreas Geiger
- Created and evaluated practical student challenges
- Conducted autonomous driving research using the CARLA Simulator

09/2022 – 11/2022

Data Science Intern, KPMG Lighthouse, Stuttgart, Germany

- Development of ML-based text duplicate detection using Python/PyTorch for customer database analysis
- IPE (Information Provided by the Entity) / ITAC (IT Application Control) audit of a DAX40 company including database application verification
- Documentation of IT infrastructure development for vehicle coordination at a listed company

07/2021 – 03/2022

Digital Skills Instructor, IBZ Karlsruhe, Germany

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