

# Jens Beißwenger

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Machine Learning Master's Student at the University of Tübingen

## Education

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2022 – Present	<b>University of Tübingen, Germany</b> <i>Master of Science in Machine Learning</i> <ul style="list-style-type: none"><li>• Expected graduation WS 24/25</li><li>• Advisor: Prof. Andreas Geiger</li><li>• Thesis: Model-Based Reinforcement Learning for Autonomous Driving</li><li>• Selected courses: Self-Driving Cars, Computer Vision, Statistical &amp; Probabilistic Machine Learning, Recurrent and Generative Artificial Neural Networks, ...</li></ul>
2017 – 2022	<b>University of Karlsruhe (KIT), Germany</b> <i>Bachelor of Science in Computer Science</i> <ul style="list-style-type: none"><li>• Advisor: Prof. Gerhard Neumann</li><li>• Thesis project @ Bosch Tübingen: Improving the Sim2Real performance using the FFB6D network</li></ul>
2013 – 2017	<b>Technical High School, Schwäbisch Gmünd, Germany</b>

## Honors & Awards

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06/2024	<b>1st Place</b> , Carla Autonomous Driving Challenge Map Track, 2nd overall, 40 participating teams	<i>University of Tübingen</i>
08/2023	<b>1st Place</b> , Reinforcement Learning Hockey Tournament, Autonomous Learning Group, 89 participants	<i>University of Tübingen</i>
01/2023	<b>3rd Place</b> , Self-Driving Cars, Modular Pipeline, Autonomous Vision Group, 26 participants	<i>University of Tübingen</i>
12/2022	<b>5th Place</b> , Self-Driving Cars, Reinforcement Learning, Autonomous Vision Group, 26 participants	<i>University of Tübingen</i>
11/2022	<b>e-fellows.net Scholarship</b> , Academic Network Member	<i>University of Tübingen</i>
10/2022	<b>4th Place</b> , Self-Driving Cars, Imitation Learning, Autonomous Vision Group, 26 participants	<i>University of Tübingen</i>
06/2016	<b>2nd Place</b> , Jugend Forscht, Camera-controlled Model Railway, Regional Competition Ostwürttemberg	<i>Technical High School</i>
06/2016	<b>3rd Place</b> , Jugend Forscht, Wifi-Controlled Model Car, Regional Competition Ostwürttemberg	<i>Technical High School</i>
06/2015	<b>3rd Place</b> , Jugend Forscht, Camera-controlled Model Railway, Regional Competition Ostwürttemberg	<i>Technical High School</i>

## Projects & Internships

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06/2024 – Present	<b>Autonomous Reading Group, University of Tübingen</b> <ul style="list-style-type: none"><li>• I take part in a weekly reading group discussing recent papers about autonomous driving</li></ul>
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11/2023 – 04/2024	<b>Research Project, Autonomous Vision Group, University of Tübingen</b> <i>PDM-Lite: Rule-Based Planner for CARLA Leaderboard 2.0</i> <ul style="list-style-type: none"> <li>Developed PDM-Lite, a rule-based expert for CARLA Leaderboard 2.0 &amp; I was responsible for dataset collection</li> <li>Achieved 1st place (Map track) and 2nd place (Sensors track) in the CVPR 2024 CARLA Autonomous Driving Challenge</li> <li>Our work was based on Transfuser++</li> </ul>
09/2022 – 11/2022	<b>Internship at KPMG Lighthouse, Stuttgart, Germany</b> <i>Data Scientist</i> <ul style="list-style-type: none"> <li>Development of ML-based text duplicate detection using Python/PyTorch for customer database analysis</li> <li>IPE (Information Provided by the Entity) / ITAC (IT Application Control) audit of a DAX40 company including database application verification</li> <li>Documentation of IT infrastructure development for vehicle coordination at a listed company</li> </ul>
10/2021 – 03/2022	<b>Maze Navigation App, University of Karlsruhe, Germany</b> <ul style="list-style-type: none"> <li>Developed a motion-controlled maze navigation app using eSense headphones' gyroscope and accelerometer</li> </ul>
10/2019 – 03/2020	<b>Software development practice, University of Karlsruhe, Germany</b> <ul style="list-style-type: none"> <li>Built &amp; trained facial recognition CNN from scratch in Java/OpenCL with cross-platform support (CPU/GPU/Movidius NCS)</li> </ul>

## Publications

2024	<div>[1] J. Zimmerlin, <b>J. Beißwenger</b>, B. Jaeger, A. Geiger, and K. Chitta, "Hidden Biases of End-to-End Driving Datasets", 2024</div> <div>[2] <b>J. Beißwenger</b>, "PDM-Lite: A Rule-Based Planner for CARLA Leaderboard 2.0", 2024</div> <div>[3] C. Sima, K. Renz, K. Chitta, L. Chen, H. Zhang, C. Xie, <b>J. Beißwenger</b>, and P. Luo, "Drivelm: Driving with graph visual question answering", in <i>Proc. of the European Conference on Computer Vision (ECCV)</i>, 2024</div>
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## Work experience

06/2023 – Present	<b>Research Assistant, Autonomous Vision Group, University of Tübingen</b> <ul style="list-style-type: none"> <li>Assisted in the exercises of the Self-Driving Cars course under Prof. Andreas Geiger</li> <li>Created and evaluated practical student challenges</li> <li>Conducted autonomous driving research using the CARLA Simulator</li> </ul>
07/2021 – 03/2022	<b>Digital Skills Instructor, IBZ Karlsruhe, Germany</b> <ul style="list-style-type: none"> <li>Taught essential computer skills (Linux, Office suite, video conferencing)</li> </ul>