Daniel Dauner

Doctoral Researcher

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Education

University of Tübingen, Germany

Feb 2024 – Now
: *Doctoral Student in Computer Science*
  - *Advisor:* Prof. Andreas Geiger
  - *Programm:* International Max Planck Research School for Intelligent Systems (IMPRS-IS)

Apr 2021 – Aug 2023
: *Master of Science in Computer Science*
  - *Advisor:* Prof. Andreas Geiger
  - *Thesis:* Vehicle Motion Planning using Data-Driven Simulation *(Grade: 1.0)*
  - *Overall Grade:* 1.19 *(with distinction)*

Oct 2017 – Feb 2021
: *Bachelor of Science in Bioinformatics*
  - *Advisor:* Prof. Nico Pfeifer
  - *Thesis:* Acetabulum fracture classification on a large cohort of CT images from German hospitals using 3D CNNs *(Grade: 1.0)*
  - *Overall Grade:* 1.55

Teaching & Research

2020 – 2025
: **University of Tübingen, Germany**

  Teaching Assistant – Autonomous Driving
  - *Chair:* Autonomous Vision Group, Prof. Andreas Geiger
  - *Oct 2025 – Feb 2026:* Tutorials for the Self-Driving Cars Lecture (lead).
  - *Oct 2024 – Feb 2025:* Tutorials for the Deep Learning Lecture.

  Research Assistant – Autonomous Driving
  - *Chair:* Autonomous Vision Group, Prof. Andreas Geiger
  - *Aug 2023 – Jan 2024:* Miscellaneous Topics in Autonomous Driving Research.

  Research Assistant – Medical Informatics
  - *Chair:* Methods in Medical Informatics, Prof. Nico Pfeifer
  - *May 2021 – Aug 2021:* Acetabulum fracture classification with 3D CNNs on CT-Scans. Cooperation with the BG Clinic Tübingen.

  Teaching Assistant – Probability Theory
  - *Chair:* Probability Research Group, PD Elmar Teufl
  - *Apr 2021 – Jul 2021:* Tutorials in Probability Theory (2 classes, 60+ students)
  - *Apr 2020 – Jul 2020:* Tutorials in Probability Theory (1 class, 20 students)

Awards

2025
- **2nd Place:** Vision-based End-to-End Driving – Waymo
  Our approach DiffusionLTF ranked second on the Vision-based End-to-End Driving Challenge.
- **3rd Place:** Scenario Generation – Waymo
  Our approach SHRED ranked third 2025 Scenario Generation Challenge.

2024
- **Valedictorian speaker:** Class of 2023/2024 – University of Tübingen
  I was selected to represent the 2023/2024 graduates in a valedictorian speech.

2023
- **1st Place:** nuPlan Planning Challenge 2023 – Motional
  Our PDM planner won the international nuPlan challenge, with 25 competing teams.

2022
- **1st Place:** Deep Learning Competition – Cognitive Systems Group
  Our Autoencoder ranked first in the lecture competition with 16 participating teams.
- **1st Place:** Self Driving Cars Challenge (3/3), Modular Pipeline – Autonomous Vision Group
  My modular pipeline agent won the lecture competition, with 15 participating teams.

2021
- **1st Place:** Self Driving Cars Challenge (2/3), Reinforcement Learning – Autonomous Vision Group
  My reinforcement learning agent won the lecture competition, with 23 participating teams.
- **1st Place:** Self Driving Cars Challenge (1/3), Imitation Learning – Autonomous Vision Group
  My imitation learning agent won the lecture competition, with 34 participating teams.

2020
- **1st Place:** Artificial Intelligence Competition – Cognitive Systems Group
  Our Chess AI won the in class challenge, with 10+ participating teams.

Invited Talks

- **Robert Bosch GmbH:** Synthesizing Driving Environments with Generative Models, *Renningen*, 13.09.2024.
- **Mercedes-Benz AG:** Vehicle Motion Planning using Data-Driven Simulation, *Sindelfingen*, 26.10.2023.

Qualifications

Programming	Python, Java, C, C++, C#, R, MATLAB, Racket
Libraries	PyTorch, TensorFlow, JAX, NumPy, Numba, ROS, CARLA, Unity, OpenCV
Software	Git, Inkscape, LaTeX, Office Suite
Languages	German (native), English (proficient), French (basic)

Publications

2025

[1] W. Cao, M. Hallgarten, T. Li, **D. Dauner**, X. Gu, C. Wang, Y. Miron, M. Aiello, H. Li, I. Gilitschenski, B. Ivanovic, M. Pavone, A. Geiger, and K. Chitta, "Pseudo-simulation for autonomous driving," in *Conference on Robot Learning (CoRL)*, 2025.

[2] M. Fauth, L. Nguyen, B. Jaeger, **D. Dauner**, M. Igl, A. Geiger, and K. Chitta, "Shred: Synthesizing rule-based environments for driving," in *Workshop on Autonomous Driving (WAD), Conference on Computer Vision and Pattern Recognition (CVPR)*, 2025.

[3] B. Jaeger, **D. Dauner**, J. Beißwenger, S. Gerstenecker, K. Chitta, and A. Geiger, "Carl: Learning scalable planning policies with simple rewards," in *Conference on Robot Learning (CoRL)*, 2025.

[4] L. Nguyen, M. Fauth, B. Jaeger, **D. Dauner**, M. Igl, A. Geiger, and K. Chitta, "Open x-av: Unifying end-to-end autonomous driving datasets," in *Workshop on Autonomous Driving (WAD), Conference on Computer Vision and Pattern Recognition (CVPR)*, 2025.

[5] C. O. Tze, **D. Dauner**, Y. Liao, D. Tsishkou, and A. Geiger, "Pritti: Primitive-based generation of controllable and editable 3d semantic scenes," in *arXiv preprint*, 2025.

2024

[6] K. Chitta*, **D. Dauner***, and A. Geiger, "Sledge: Synthesizing driving environments with generative models and rule-based traffic," in *European Conference on Computer Vision (ECCV)*, 2024.

[7] **D. Dauner**, M. Hallgarten, T. Li, X. Weng, Z. Huang, Z. Yang, H. Li, I. Gilitschenski, B. Ivanovic, M. Pavone, A. Geiger, and K. Chitta, "Navsim: Data-driven non-reactive autonomous vehicle simulation and benchmarking," in *Advances in Neural Information Processing Systems (NeurIPS)*, 2024.

2023

[8] **D. Dauner**, "Image reconstruction from event cameras for autonomous driving," in *International Conference on Learning Representations Workshop on Scene Representations for Autonomous Driving*, 2023.

[9] **D. Dauner**, M. Hallgarten, A. Geiger, and K. Chitta, "Parting with misconceptions about learning-based vehicle motion planning," in *Conference on Robot Learning (CoRL)*, 2023.