Kashyap Chitta

Postdoctoral Researcher

kchitta@nvidia.com https://kashyap7x.github.io Tübingen, Germany, 72076

Employment

2025 – Now

NVIDIA, Germany

Postdoctoral Researcher; Autonomous Vehicle Research Group

Visiting Researcher; Autonomous Vision Group, University of Tübingen

- *Role:* Research focused on simulation-based training and evaluation of Physical AI systems.

Education

2019 – 2025

University of Tübingen, Germany

PhD in Computer Science; Autonomous Vision Group

- *Advisor:* Prof. Andreas Geiger
- *Scholarship:* International Max Planck Research School for Intelligent Systems (IMPRS-IS)
- *Thesis:* Towards Scalable Autonomous Vehicles

2017 – 2018

Carnegie Mellon University, USA

Master of Science in Computer Vision

- *Advisor:* Prof. Martial Hebert
- *Thesis project:* Exploiting Synthetic Data for Street Scene Segmentation
- *GPA:* 4.15/4.33
- *Selected courses:* Visual Learning and Recognition, Deep Reinforcement Learning, Geometry Based Methods in Vision, Statistical Techniques in Robotics

2013 – 2017

RV College of Engineering, India

Bachelor of Engineering in Electronics and Communication

- *Thesis project:* Monocular Visual SLAM with a Rotating Mirror
- *GPA:* 9.11/10.0

Awards

2025

- Our approach VaVAM-ECO ranked **first** on the 2025 RealADSim Closed-Loop Driving Challenge.
- Our approach DiffusionLTF ranked **second** on the 2025 Waymo Vision-based End-to-End Driving Challenge.
- Our approach SHRED ranked **third** on the 2025 Waymo Scenario Generation Challenge.

2024

- I was named an outstanding reviewer at ECCV 2024 (198/7293 reviewers, top 3%).
- Our approach GenDM ranked **second** on the 2024 Dataset Distillation Challenge generative track and won the **best paper award** at the challenge's ECCV workshop.
- Our approach TF++ ranked **first** on the 2024 CARLA AD Challenge map track (40 participating teams).

2023

- Our approach TF++ ranked **second** on the 2023 CARLA AD Challenge (20 participating teams).
- I was named a top reviewer at NeurIPS 2023 (1196/11725 reviewers, top 10%).
- I was named an outstanding reviewer at ICCV 2023 (130/7000 reviewers, top 2%).
- I was selected for the doctoral consortium at ICCV 2023 (38 accepted participants).
- Our approach PDM ranked **first** on the 2023 nuPlan Planning Challenge (52 participating teams).
- I was named an outstanding reviewer at CVPR 2023 (232/7000 reviewers, top 3%).
- I was selected as a 2023 RSS Pioneer, (30/135 applicants, 22% acceptance rate).

2022

- Our approach MapTF++ ranked **first** on the 2022 CARLA AD Challenge map track.

2021

- Our approach TransFuser ranked **second** on the 2021 CARLA AD Challenge, (100+ participating teams).
- Our new computer vision lecture won the 2021 CS teaching award at the University of Tübingen.

2020

- Our approach NEAT ranked **second** on the 2020 CARLA AD Challenge (45 participating teams).

Internships

Jan 2019 – Aug 2019 | **NVIDIA, Santa Clara, USA**

Deep Learning Intern; Autonomous Vehicle Applied Research

- *Mentor:* Dr. José M. Álvarez
- *Role:* Research and development of an automatic dataset curation engine for the internal *MagLev* AI training and inference infrastructure, involving collaborations across multiple groups, which resulted in two publications.

May 2018 – Aug 2018 | **NVIDIA, Santa Clara, USA**

Software Intern; Autonomous Vehicle Applied Research

- *Mentors:* Dr. José M. Álvarez, Dr. Adam Lesnikowsi
- *Role:* Research on approximating Bayesian Neural Networks for Active Learning which resulted in a publication, and was subsequently incorporated into the data annotation platform for the autonomous vehicles group.

Teaching

2019 – Now | **University of Tübingen, Germany**

Lead Teaching Assistant

- *Apr 2023 – Jul 2023:* Autonomous Vision (seminar, 5 teams of 2 students)
- *Apr 2022 – Jul 2022:* Autonomous Vision (seminar, 8 teams of 2 students)

Teaching Assistant

- *Apr 2021 – Jul 2021:* Computer Vision (lecture, 150 students)
- *Oct 2019 – Feb 2020:* Self-Driving Cars (lecture, 80 students)

Supervision

2024 – Now

University of Toronto, Canada

Research Project Advisor

- *Aug 2025 – Now:* Brayden Zhang (Project: Optimization and Fine-Tuning of End-to-End Driving Foundation Models)
- *Nov 2024 – Now:* Xunjiang Gu (Project: Dynamics Distillation for Efficient and Transferable Control Learning)

2019 – Now

University of Tübingen, Germany

Master Thesis Advisor

- *Apr 2025 – Nov 2025:* Micha Fauth (Thesis: Evaluating Traffic and Scenario Generation using Fidelity and Diversity Metrics)
- *Nov 2024 – Nov 2025:* Long Nguyen (Thesis: Addressing the Fundamental Barriers towards End-to-End Driving in Simulation)
- *Jul 2024 – Apr 2025:* Jens Beißwenger (Thesis: Enhancing Model-Based Reinforcement Learning for Autonomous Driving)
- *Jun 2024 – Feb 2025:* Melanie Schneider (Thesis: Generative Dataset Distillation: A New Hope?)
- *Mar 2024 – Sep 2024:* Julian Zimmerlin (Thesis: Tackling CARLA Leaderboard 2.0 with End-to-End Imitation Learning)
- *Feb 2023 – Aug 2023:* Daniel Dauner (Thesis: Vehicle Motion Planning using Data-Driven Simulation)
- *Dec 2022 – Jun 2023:* Luis Winckelmann (Thesis: LiDAR-based Object Detection for Planning Transformers)
- *Dec 2022 – Jun 2023:* Tim Schreier (Thesis: On Offline Evaluation of 3D Object Detection for Autonomous Driving)
- *Nov 2022 – May 2023:* Siddharth Ramrakhiani (Thesis: Vision Transformers for Autonomous Driving)
- *Nov 2022 – May 2023:* Jovan Cicvaric (Thesis: Generative Dataset Distillation)
- *Mar 2021 – Sep 2021:* Bernhard Jaeger (Thesis: Expert Drivers for Autonomous Driving)
- *Oct 2020 – Apr 2021:* Micha Schilling (Thesis: Visual Abstractions for Autonomous Driving)

Research Project Advisor

- *Jun 2024 – Oct 2024:* Zhengyu Su (Project: Dataset Distillation for Autonomous Driving)
- *Nov 2023 – Apr 2024:* Jens Beißwenger (Project: PDM-Lite: A Rule-Based Planner for CARLA Leaderboard 2.0)
- *Apr 2022 – Sep 2022:* Alexander Braun and Luis Winckelmann (Project: Infraction Visualization and Clustering for Better Agent Evaluation in CARLA)

Academic Activities

Workshop Organization

- *ICCV 2025*: Learning to See: Advancing Spatial Understanding for Embodied Intelligence, 19.10.2025.
- *CVPR 2025*: Embodied Intelligence for Autonomous Systems on the Horizon, 11.06.2025.
- *CoRL 2024*: Safe and Robust Robot Learning for Operation in the Real World, 09.11.2024.
- *ECCV 2024*: Autonomous Vehicles meet Multimodal Foundation Models, 29.09.2024.

- *CVPR 2024*: Foundation Models for Autonomous Systems, 17.06.2024.
- *CVPR 2023*: End-to-End Autonomous Driving: Emerging Tasks and Challenges, 18.06.2023.
- *ICLR 2023*: Scene Representations for Autonomous Driving, 05.05.2023.

Recorded Talks

- Specializing General-Purpose Video Diffusion Models. ECCV Tutorial: Recent Advances in Video Content Understanding and Generation, Milan, 30.09.2024.
- Synthesizing Simulation Environments with Generative Models. CVPR Workshop on Data-Driven Autonomous Driving Simulation, Seattle, 18.06.2024.
- Benchmarking Foundation Models for Autonomous Driving. CVPR Tutorial: Towards Building AGI in Autonomy and Robotics, Seattle, 18.06.2024.
- Non-Reactive Autonomous Vehicle Simulation and Benchmarking. CVPR Workshop on Autonomous Driving, Seattle, 17.06.2024.
- Reading, Writing, and Reviewing for Robotics and Computer Vision Research. Sogang University Applied Data Engineering Seminar, Virtual, 07.06.2023.
- End-to-End Driving with Attention. ICRA Workshop on Scalable Autonomous Driving, London, 02.06.2023.
- Imitation via Abstraction and Planning. ETH Computer Vision Lab, Zürich, 20.02.2023.
- Imitation with Transformer-based Sensor Fusion for Autonomous Driving. University of Toronto AI in Robotics Seminar, Virtual, 28.03.2022.

Reviewing and Service

- *Journal Reviewer:* T-PAMI, IJCV, T-RO, RA-L, T-IP, T-ITS, T-IV
- *Conference Reviewer:* CVPR, ICCV, ECCV, WACV, CoRL, ICRA, IROS, NeurIPS, ICLR, IV
- *Publicity Chair:* RSS Pioneers 2024
- *Program Chair:* ICLR 2023 SR4AD Workshop, ECCV 2024 MLLMAV Workshop
- *Area Chair:* CoRL 2025 SAFE-ROL Workshop
- *Evaluator:* ELLIS PhD Program, 2022-2024, IMPRS-IS PhD Program, 2023-2024

Publications

All publications listed here have been accepted following peer review. For the latest publications (including pre-prints) and detailed citation statistics, see scholar.google.com.

2016 Chitta, K., & Sajjan, N. N. (2016). A reduced region of interest based approach for facial expression recognition from static images. *IEEE Region-10 Conference (TENCON)*.

2018 Chitta, K. (2018). Targeted kernel networks: Faster convolutions with attentive regularization. *Workshop on Compact and Efficient Feature Representation and Learning in Computer Vision (CEFRL), European Conference on Computer Vision (ECCV)*.

Chitta, K., Alvarez, J. M., & Lesnikowski, A. (2018). Deep probabilistic ensembles: Approximate variational inference through kl regularization. *Workshop on Bayesian Deep Learning (BDL), Conference on Neural Information Processing Systems (NeurIPS)*.

2020

Behl, A., Chitta, K., Prakash, A., Ohn-Bar, E., & Geiger, A. (2020). Label efficient visual abstractions for autonomous driving. *International Conference on Intelligent Robots and Systems (IROS)*.

Chitta, K., Alvarez, J. M., & Hebert, M. (2020). Quadtree generating networks: Efficient hierarchical scene parsing with sparse convolutions. *Winter Conference on Applications of Computer Vision (WACV)*.

Haussmann, E., Fenzi, M., Chitta, K., Ivanecky, J., Xu, H., Roy, D., Mittel, A., Koumchatzky, N., Farabet, C., & Alvarez, J. M. (2020). Scalable active learning for object detection. *Intelligent Vehicles Symposium (IV)*.

Ohn-Bar, E., Prakash, A., Behl, A., Chitta, K., & Geiger, A. (2020). Learning situational driving. *Conference on Computer Vision and Pattern Recognition (CVPR)*.

Prakash, A., Behl, A., Ohn-Bar, E., Chitta, K., & Geiger, A. (2020). Exploring data aggregation in policy learning for vision-based urban autonomous driving. *Conference on Computer Vision and Pattern Recognition (CVPR)*.

2021

Chitta, K., Alvarez, J. M., Haussmann, E., & Farabet, C. (2021). Training data subset search with ensemble active learning. *Transactions on Intelligent Transportation Systems (T-ITS)*.

Chitta, K., Prakash, A., & Geiger, A. (2021). Neat: Neural attention fields for end-to-end autonomous driving. *International Conference on Computer Vision (ICCV)*.

Prakash, A., Chitta, K., & Geiger, A. (2021). Multi-modal fusion transformer for end-to-end autonomous driving. *Conference on Computer Vision and Pattern Recognition (CVPR)*.

Sauer, A., Chitta, K., Muller, J., & Geiger, A. (2021). Projected gans converge faster. *Advances in Neural Information Processing Systems (NeurIPS)*.

Weis, M. A., Chitta, K., Sharma, Y., Brendel, W., Bethge, M., Geiger, A., & Ecker, A. S. (2021). Benchmarking unsupervised object representations for video sequences. *Journal of Machine Learning Research (JMLR)*.

2022

Hanselmann, N., Renz, K., Chitta, K., Bhattacharyya, A., & Geiger, A. (2022). King: Generating safety-critical driving scenarios for robust imitation via kinematics gradients. *European Conference on Computer Vision (ECCV)*.

Renz, K., Chitta, K., Mercea, O.-B., Koepke, A. S., Akata, Z., & Geiger, A. (2022). Plant: Explainable planning transformers via object-level representations. *Conference on Robot Learning (CoRL)*.

2023

Chitta, K., Prakash, A., Jaeger, B., Yu, Z., Renz, K., & Geiger, A. (2023). Transfuser: Imitation with transformer-based sensor fusion for autonomous driving. *Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)*.

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

Jaeger, B., Chitta, K., & Geiger, A. (2023). Hidden biases of end-to-end driving models. *International Conference on Computer Vision (ICCV)*.

Schreier, T., Renz, K., Geiger, A., & Chitta, K. (2023). On offline evaluation of 3d object detection for autonomous driving. *Workshop on Robustness and Reliability of Autonomous Vehicles in the Open-world (BRAVO), International Conference on Computer Vision (ICCV)*.

2024

Chen, L., Wu, P., Chitta, K., Jaeger, B., Geiger, A., & Li, H. (2024). End-to-end autonomous driving: Challenges and frontiers. *Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)*.

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

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

Gao, S., Yang, J., Chen, L., Chitta, K., Qiu, Y., Geiger, A., Zhang, J., & Li, H. (2024). Vista: A generalizable driving world model with high fidelity and versatile controllability. *Advances in Neural Information Processing Systems (NeurIPS)*.

Schneider, M., Cicvaric, J., Sauer, A., Geiger, A., & Chitta, K. (2024). Generative dataset distillation: A new hope? *Workshop on the Dataset Distillation Challenge, European Conference on Computer Vision (ECCV)*.

Sima, C., Renz, K., Chitta, K., Chen, L., Zhang, H., Xie, C., Beißwenger, J., Luo, P., Geiger, A., & Li, H. (2024). Drivelm: Driving with graph visual question answering. *European Conference on Computer Vision (ECCV)*.

Yang, J., Gao, S., Qiu, Y., Chen, L., Li, T., Dai, B., Chitta, K., Wu, P., Zeng, J., Luo, P., Zhang, J., Geiger, A., Qiao, Y., & Li, H. (2024). Generalized predictive model for autonomous driving. *Conference on Computer Vision and Pattern Recognition (CVPR)*.

Zimmerlin, J., Beißwenger, J., Jaeger, B., Geiger, A., & Chitta, K. (2024). Hidden biases of end-to-end driving datasets. *Workshop on Foundation Models for Autonomous Systems (FM4AS), Conference on Computer Vision and Pattern Recognition (CVPR)*.

2025

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

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

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

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

Sima, C., Chitta, K., Yu, Z., Lan, S., Luo, P., Geiger, A., Li, H., & Alvarez, J. M. (2025). Centaur: Robust end-to-end autonomous driving with test-time training. *Workshop on Test-time Scaling for Computer Vision, Conference on Computer Vision and Pattern Recognition (CVPR)*.

Yang, J., Chitta, K., Gao, S., Chen, L., Shao, Y., Jia, X., Li, H., Geiger, A., Yue, X., & Chen, L. (2025). Resim: Reliable world simulation for autonomous driving. *Advances in Neural Information Processing Systems (NeurIPS)*.

References

Prof. Andreas Geiger. Head of the Dept. of Computer Science, University of Tübingen. a.geiger@uni-tuebingen.de

Prof. Marco Pavone. Director, Autonomous Vehicles Research, NVIDIA. mpavone@nvidia.com

Dr. José M. Álvarez. Director, Autonomous Vehicle Applied Research, NVIDIA. josea@nvidia.com

Prof. Hongyang Li. Assistant Professor, University of Hong Kong. hongyang@hku.hk

Prof. Igor Gilitschenski. Assistant Professor, University of Toronto. gilitschenski@cs.toronto.edu