Kashyap Chitta

Postdoctoral Researcher

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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:* Scalability-Driven Design for 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: Reinforcement Learning for Flow Matching Policies)
- *Nov 2024 – Now:* Xunjiang Gu (Project: Reinforcement Learning for Vehicle Control in Adverse Conditions)

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, Kashyap** and Neeraj N. Sajjan: "A Reduced Region of Interest Based Approach for Facial Expression Recognition from Static Images". In: *IEEE Region-10 Conference (TENCON)*. 2016.

2018 **Chitta, Kashyap**: "Targeted Kernel Networks: Faster Convolutions with Attentive Regularization". In: *Workshop on Compact and Efficient Feature Representation and Learning in Computer Vision (CEFRL), European Conference on Computer Vision (ECCV)*. 2018.

Chitta, Kashyap, Jose M. Alvarez, and Adam Lesnikowski: "Deep Probabilistic Ensembles: Approximate Variational Inference through KL Regularization". In: *Workshop on Bayesian Deep Learning (BDL), Conference on Neural Information Processing Systems (NeurIPS)*. 2018.

2020 Behl, Aseem, **Kashyap Chitta**, Aditya Prakash, Eshed Ohn-Bar, and Andreas Geiger: "Label Efficient Visual Abstractions for Autonomous Driving". In: *International Conference on Intelligent Robots and Systems (IROS)*. 2020.

Chitta, Kashyap, Jose M. Alvarez, and Martial Hebert: "Quadtree Generating Networks: Efficient Hierarchical Scene Parsing with Sparse Convolutions". In: *Winter Conference on Applications of Computer Vision (WACV)*. 2020.

Haussmann, Elmar, Michele Fenzi, **Kashyap Chitta**, Jan Ivanecky, Hanson Xu, Donna Roy, Akshita Mittel, Nicolas Koumchatzky, Clement Farabet, and Jose M. Alvarez: "Scalable Active Learning for Object Detection". In: *Intelligent Vehicles Symposium (IV)*. 2020.

Ohn-Bar, Eshed, Aditya Prakash, Aseem Behl, **Kashyap Chitta**, and Andreas Geiger: "Learning Situational Driving". In: *Conference on Computer Vision and Pattern Recognition (CVPR)*. 2020.

Prakash, Aditya, Aseem Behl, Eshed Ohn-Bar, **Kashyap Chitta**, and Andreas Geiger: "Exploring Data Aggregation in Policy Learning for Vision-Based Urban Autonomous Driving". In: *Conference on Computer Vision and Pattern Recognition (CVPR)*. 2020.

2021 **Chitta, Kashyap**, Jose M. Alvarez, Elmar Haussmann, and Clement Farabet: *Training Data Subset Search with Ensemble Active Learning*. In: *Transactions on Intelligent Transportation Systems (T-ITS)* (2021).

Chitta, Kashyap, Aditya Prakash, and Andreas Geiger: "NEAT: Neural Attention Fields for End-to-End Autonomous Driving". In: *International Conference on Computer Vision (ICCV)*. 2021.

Prakash, Aditya, **Kashyap Chitta**, and Andreas Geiger: "Multi-Modal Fusion Transformer for End-to-End Autonomous Driving". In: *Conference on Computer Vision and Pattern Recognition (CVPR)*. 2021.

Sauer, Axel, **Kashyap Chitta**, Jens Muller, and Andreas Geiger: "Projected GANs Converge Faster". In: *Advances in Neural Information Processing Systems (NeurIPS)*. 2021.

Weis, Marissa A., **Kashyap Chitta**, Yash Sharma, Wieland Brendel, Matthias Bethge, Andreas Geiger, and Alexander S. Ecker: *Benchmarking Unsupervised Object Representations for Video Sequences*. In: *Journal of Machine Learning Research (JMLR)* (2021).

2022 Hanselmann, Niklas, Katrin Renz, **Kashyap Chitta**, Apratim Bhattacharyya, and Andreas Geiger: "KING: Generating Safety-Critical Driving Scenarios for Robust Imitation via Kinematics Gradients". In: *European Conference on Computer Vision (ECCV)*. 2022.

Renz, Katrin, **Kashyap Chitta**, Otniel-Bogdan Mercea, A. Sophia Koepke, Zeynep Akata, and Andreas Geiger: "PlanT: Explainable Planning Transformers via Object-Level Representations". In: *Conference on Robot Learning (CoRL)*. 2022.

2023 **Chitta, Kashyap**, Aditya Prakash, Bernhard Jaeger, Zehao Yu, Katrin Renz, and Andreas Geiger: *TransFuser: Imitation with Transformer-Based Sensor Fusion for Autonomous Driving*. In: *Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)* (2023).

Dauner, Daniel, Marcel Hallgarten, Andreas Geiger, and **Kashyap Chitta**: "Parting with Misconceptions about Learning-based Vehicle Motion Planning". In: *Conference on Robot Learning (CoRL)*. 2023.

Jaeger, Bernhard, **Kashyap Chitta**, and Andreas Geiger: "Hidden Biases of End-to-End Driving Models". In: *International Conference on Computer Vision (ICCV)*. 2023.

Schreier, Tim, Katrin Renz, Andreas Geiger, and **Kashyap Chitta**: "On Offline Evaluation of 3D Object Detection for Autonomous Driving". In: *Workshop on Robustness and Reliability of Autonomous Vehicles in the Open-world (BRAVO), International Conference on Computer Vision (ICCV)*. 2023.

2024

Chen, Li, Penghao Wu, **Kashyap Chitta**, Bernhard Jaeger, Andreas Geiger, and Hongyang Li: *End-to-end Autonomous Driving: Challenges and Frontiers*. In: *Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)* (2024).

Chitta, Kashyap, Daniel Dauner, and Andreas Geiger: "SLEDGE: Synthesizing Driving Environments with Generative Models and Rule-Based Traffic". In: *European Conference on Computer Vision (ECCV)*. 2024.

Dauner, Daniel, Marcel Hallgarten, Tianyu Li, Xinshuo Weng, Zhiyu Huang, Zetong Yang, Hongyang Li, Igor Gilitschenski, Boris Ivanovic, Marco Pavone, Andreas Geiger, and **Kashyap Chitta**: "NAVSIM: Data-Driven Non-Reactive Autonomous Vehicle Simulation and Benchmarking". In: *Advances in Neural Information Processing Systems (NeurIPS)*. 2024.

Gao, Shenyuan, Jiazhi Yang, Li Chen, **Kashyap Chitta**, Yihang Qiu, Andreas Geiger, Jun Zhang, and Hongyang Li: "Vista: A Generalizable Driving World Model with High Fidelity and Versatile Controllability". In: *Advances in Neural Information Processing Systems (NeurIPS)*. 2024.

Schneider, Melanie, Jovan Cicvaric, Axel Sauer, Andreas Geiger, and **Kashyap Chitta**: "Generative Dataset Distillation: A New Hope?" In: *Workshop on the Dataset Distillation Challenge, European Conference on Computer Vision (ECCV)*. 2024.

Sima, Chonghao, Katrin Renz, **Kashyap Chitta**, Li Chen, Hanxue Zhang, Chengen Xie, Jens Beißwenger, Ping Luo, Andreas Geiger, and Hongyang Li: "DriveLM: Driving with Graph Visual Question Answering". In: *European Conference on Computer Vision (ECCV)*. 2024.

Yang, Jiazhi, Shenyuan Gao, Yihang Qiu, Li Chen, Tianyu Li, Bo Dai, **Kashyap Chitta**, Penghao Wu, Jia Zeng, Ping Luo, Jun Zhang, Andreas Geiger, Yu Qiao, and Hongyang Li: "Generalized predictive model for autonomous driving". In: *Conference on Computer Vision and Pattern Recognition (CVPR)*. 2024.

Zimmerlin, Julian, Jens Beißwenger, Bernhard Jaeger, Andreas Geiger, and **Kashyap Chitta**: "Hidden Biases of End-to-End Driving Datasets". In: *Workshop on Foundation Models for Autonomous Systems (FM4AS), Conference on Computer Vision and Pattern Recognition (CVPR)*. 2024.

2025

Cao, Wei, Marcel Hallgarten, Tianyu Li, Daniel Dauner, Xunjiang Gu, Caojun Wang, Yakov Miron, Marco Aiello, Hongyang Li, Igor Gilitschenski, Boris Ivanovic, Marco Pavone, Andreas Geiger, and **Kashyap Chitta**: "Pseudo-Simulation for Autonomous Driving". In: *Conference on Robot Learning (CoRL)*. 2025.

Fauth, Micha, Long Nguyen, Bernhard Jaeger, Daniel Dauner, Maximilian Igl, Andreas Geiger, and **Kashyap Chitta**: "SHRED: Synthesizing Rule-Based Environments for Driving". In: *Workshop on Autonomous Driving (WAD), Conference on Computer Vision and Pattern Recognition (CVPR)*. 2025.

Jaeger, Bernhard, Daniel Dauner, Jens Beißwenger, Simon Gerstenecker, **Kashyap Chitta**, and Andreas Geiger: "CaRL: Learning Scalable Planning Policies with Simple Rewards". In: *Conference on Robot Learning (CoRL)*. 2025.

Nguyen, Long, Micha Fauth, Bernhard Jaeger, Daniel Dauner, Maximilian Igl, Andreas Geiger, and **Kashyap 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.

Sima, Chonghao, **Kashyap Chitta**, Zhiding Yu, Shiyi Lan, Ping Luo, Andreas Geiger, Hongyang Li, and Jose M. Alvarez: "Centaur: Robust End-to-End Autonomous Driving with Test-Time Training". In: *Workshop on Test-time Scaling for Computer Vision, Conference on Computer Vision and Pattern Recognition (CVPR)*. 2025.

Yang, Jiazhi, **Kashyap Chitta**, Shenyuan Gao, Long Chen, Yuqian Shao, Xiaosong Jia, Hongyang Li, Andreas Geiger, Xiangyu Yue, and Li Chen: "ReSim: Reliable World Simulation for Autonomous Driving". In: *Advances in Neural Information Processing Systems (NeurIPS)*. 2025.

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

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