# 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:* 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: Hugsim Challenge)
- *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 – Now:* Micha Fauth (Thesis: Waymo Open Scenario Generation Challenge)
- *Nov 2024 – Now:* Long Nguyen (Thesis: Waymo Open End-to-End Driving Challenge)
- *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

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. Sima, **K. Chitta**, Z. Yu, S. Lan, P. Luo, A. Geiger, H. Li, and J. 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.

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

2024

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

[8] **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.

[9] 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.

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

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

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

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

[14] J. Zimmerlin, J. Beißwenger, B. Jaeger, A. Geiger, and **K. 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.

2023

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

[16] 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.

[17] B. Jaeger, **K. Chitta**, and A. Geiger, "Hidden biases of end-to-end driving models," in *International Conference on Computer Vision (ICCV)*, 2023.

[18] T. Schreier, K. Renz, A. Geiger, and **K. 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.

2022

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

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

2021

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

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

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

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

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

2020

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

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

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

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

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

2018

[31] **K. Chitta**, "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.

[32] **K. Chitta**, J. M. Alvarez, and A. 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.

2016

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

## 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