

Kashyap Chitta

Postdoctoral Researcher

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Employment

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| 2025 – Now | NVIDIA, Germany <i>Postdoctoral Researcher; Autonomous Vehicle Research Group</i> <i>Visiting Researcher; Autonomous Vision Group, University of Tübingen</i> <ul style="list-style-type: none">• <i>Role:</i> Research focused on simulation-based training and evaluation of physical AI systems. |
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Education

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| 2019 – 2025 | University of Tübingen, Germany <i>PhD in Computer Science; Autonomous Vision Group</i> <ul style="list-style-type: none">• <i>Advisor:</i> Prof. Andreas Geiger• <i>Scholarship:</i> International Max Planck Research School for Intelligent Systems (IMPRS-IS)• <i>Thesis:</i> Scalability-Driven Design for Autonomous Vehicles |
| 2017 – 2018 | Carnegie Mellon University, USA <i>Master of Science in Computer Vision</i> <ul style="list-style-type: none">• <i>Advisor:</i> Prof. Martial Hebert• <i>Thesis project:</i> Exploiting Synthetic Data for Street Scene Segmentation• <i>GPA:</i> 4.15/4.33• <i>Selected courses:</i> Visual Learning and Recognition, Deep Reinforcement Learning, Geometry Based Methods in Vision, Statistical Techniques in Robotics |
| 2013 – 2017 | RV College of Engineering, India <i>Bachelor of Engineering in Electronics and Communication</i> <ul style="list-style-type: none">• <i>Thesis project:</i> Monocular Visual SLAM with a Rotating Mirror• <i>GPA:</i> 9.11/10.0 |

Awards

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| 2025 | <ul style="list-style-type: none">• 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 | <ul style="list-style-type: none">• 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). |

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| 2023 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Our approach MapTF++ ranked first on the 2022 CARLA AD Challenge map track. |
| 2021 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Our approach NEAT ranked second on the 2020 CARLA AD Challenge (45 participating teams). |

Internships

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| Jan 2019 – Aug 2019 | NVIDIA, Santa Clara, USA <i>Deep Learning Intern; Autonomous Vehicle Applied Research</i> <ul style="list-style-type: none"> • <i>Mentor:</i> Dr. José M. Álvarez • <i>Role:</i> 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 <i>Software Intern; Autonomous Vehicle Applied Research</i> <ul style="list-style-type: none"> • <i>Mentors:</i> Dr. José M. Álvarez, Dr. Adam Lesnikowski • <i>Role:</i> 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

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| 2019 – Now | University of Tübingen, Germany <i>Lead Teaching Assistant</i> <ul style="list-style-type: none"> • <i>Apr 2023 – Jul 2023:</i> Autonomous Vision (seminar, 5 teams of 2 students) • <i>Apr 2022 – Jul 2022:</i> Autonomous Vision (seminar, 8 teams of 2 students) <i>Teaching Assistant</i> <ul style="list-style-type: none"> • <i>Apr 2021 – Jul 2021:</i> Computer Vision (lecture, 150 students) • <i>Oct 2019 – Feb 2020:</i> Self-Driving Cars (lecture, 80 students) |
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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](#)
- *Evaluator*: [ELLIS PhD Program, 2022-2024](#), [IMPRS-IS PhD Program, 2023-2024](#)

Publications

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| 2025 | <ul style="list-style-type: none">[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 <i>Conference on Robot Learning (CoRL)</i>, 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 <i>Workshop on Autonomous Driving (WAD), Conference on Computer Vision and Pattern Recognition (CVPR)</i>, 2025.[3] B. Jaeger, D. Dauner, J. Beißwenger, S. Gerstenecker, K. Chitta, and A. Geiger, “Carl: Learning scalable planning policies with simple rewards,” in <i>Conference on Robot Learning (CoRL)</i>, 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 <i>Workshop on Autonomous Driving (WAD), Conference on Computer Vision and Pattern Recognition (CVPR)</i>, 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 <i>Workshop on Test-time Scaling for Computer Vision, Conference on Computer Vision and Pattern Recognition (CVPR)</i>, 2025. |
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- 2024 [6] 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.
- [7] **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.
- [8] 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.
- [9] 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.
- [10] 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.
- [11] 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.
- [12] 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.
- [13] 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 [14] **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.
- [15] 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.
- [16] B. Jaeger, **K. Chitta**, and A. Geiger, “Hidden biases of end-to-end driving models,” in *International Conference on Computer Vision (ICCV)*, 2023.
- [17] 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 [18] 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.
- [19] 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 [20] **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.
- [21] **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.
- [22] 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.
- [23] A. Sauer, **K. Chitta**, J. Muller, and A. Geiger, “Projected gans converge faster,” in *Advances in Neural Information Processing Systems (NeurIPS)*, 2021.
- [24] 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 [25] 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.
- [26] **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.
- [27] E. Haussmann, M. Fenzi, **K. Chitta**, J. Ivaneky, H. Xu, D. Roy, A. Mittel, N. Kourchatzky, C. Farabet, and J. M. Alvarez, “Scalable active learning for object detection,” in *Intelligent Vehicles Symposium (IV)*, 2020.
- [28] 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.
- [29] 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 [30] **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.
- [31] **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 [32] **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

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