

# Kashyap Chitta

Postdoctoral Researcher

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## Employment

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

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

## Awards

2025	<ul style="list-style-type: none"><li>• Our approach VaVAM-ECO ranked <b>first</b> on the <a href="#">2025 RealADSim Closed-Loop Driving Challenge</a>.</li><li>• Our approach DiffusionLTF ranked <b>second</b> on the <a href="#">2025 Waymo Vision-based End-to-End Driving Challenge</a>.</li><li>• Our approach SHRED ranked <b>third</b> on the <a href="#">2025 Waymo Scenario Generation Challenge</a>.</li></ul>
2024	<ul style="list-style-type: none"><li>• I was named an <a href="#">outstanding reviewer</a> at ECCV 2024 (198/7293 reviewers, top 3%).</li><li>• Our approach GenDM ranked <b>second</b> on the <a href="#">2024 Dataset Distillation Challenge</a> generative track and won the <b>best paper award</b> at the challenge's ECCV workshop.</li><li>• Our approach TF++ ranked <b>first</b> on the <a href="#">2024 CARLA AD Challenge</a> map track (40 participating teams).</li></ul>

- 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

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| Jan 2019 –<br>Aug 2019 | <b>NVIDIA, Santa Clara, USA</b><br><i>Deep Learning Intern; Autonomous Vehicle Applied Research</i>  |
|                        | <ul style="list-style-type: none"> <li>• <b>Mentor:</b> <a href="#">Dr. José M. Álvarez</a></li> <li>• <b>Role:</b> Research and development of an automatic dataset curation engine for the internal <a href="#">MagLev</a> AI training and inference infrastructure, involving collaborations across multiple groups, which resulted in two publications.</li> </ul>               |
| May 2018 –<br>Aug 2018 | <b>NVIDIA, Santa Clara, USA</b><br><i>Software Intern; Autonomous Vehicle Applied Research</i>   |
|                        | <ul style="list-style-type: none"> <li>• <b>Mentors:</b> <a href="#">Dr. José M. Álvarez</a>, <a href="#">Dr. Adam Lesnikowski</a></li> <li>• <b>Role:</b> 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.</li> </ul> |

## Teaching

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| 2019 – Now | <b>University of Tübingen, Germany</b><br><i>Lead Teaching Assistant</i>   |
|            | <ul style="list-style-type: none"> <li>• <i>Apr 2023 – Jul 2023: Autonomous Vision</i> (seminar, 5 teams of 2 students)</li> <li>• <i>Apr 2022 – Jul 2022: Autonomous Vision</i> (seminar, 8 teams of 2 students)</li> </ul> |
|            | <i>Teaching Assistant</i>  |
|            | <ul style="list-style-type: none"> <li>• <i>Apr 2021 – Jul 2021: Computer Vision</i> (lecture, 150 students)</li> <li>• <i>Oct 2019 – Feb 2020: Self-Driving Cars</i> (lecture, 80 students)</li> </ul>                      |

## Supervision

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2024 – Now	<p><b>University of Toronto, Canada</b></p> <p><i>Research Project Advisor</i></p> <ul style="list-style-type: none"><li>• Aug 2025 – Now: <a href="#">Brayden Zhang</a> (Project: Optimization and Fine-Tuning of End-to-End Driving Foundation Models)</li><li>• Dec 2024 – Dec 2025: <a href="#">Xunjiang Gu</a> (Project: Model-Based Reinforcement Learning for Robust Autonomous Vehicle Control)</li></ul>
2019 – Now	<p><b>University of Tübingen, Germany</b></p> <p><i>Master Thesis Advisor</i></p> <ul style="list-style-type: none"><li>• Apr 2025 – Nov 2025: <a href="#">Micha Fauth</a> (Thesis: Evaluating Traffic and Scenario Generation using Fidelity and Diversity Metrics)</li><li>• May 2025 – Oct 2025: <a href="#">Long Nguyen</a> (Thesis: Addressing the Fundamental Barriers towards End-to-End Driving in Simulation)</li><li>• Nov 2024 – Apr 2025: <a href="#">Jens Beißwenger</a> (Thesis: Enhancing Model-Based Reinforcement Learning for Autonomous Driving)</li><li>• Sep 2024 – Feb 2025: <a href="#">Melanie Schneider</a> (Thesis: Generative Dataset Distillation: A New Hope?)</li><li>• Mar 2024 – Sep 2024: <a href="#">Julian Zimmerlin</a> (Thesis: Tackling CARLA Leaderboard 2.0 with End-to-End Imitation Learning)</li><li>• Feb 2023 – Aug 2023: <a href="#">Daniel Dauner</a> (Thesis: Vehicle Motion Planning using Data-Driven Simulation)</li><li>• Dec 2022 – Jun 2023: <a href="#">Luis Winckelmann</a> (Thesis: LiDAR-based Object Detection for Planning Transformers)</li><li>• Dec 2022 – Jun 2023: <a href="#">Tim Schreier</a> (Thesis: On Offline Evaluation of 3D Object Detection for Autonomous Driving)</li><li>• Nov 2022 – May 2023: <a href="#">Siddharth Ramrakhiani</a> (Thesis: Vision Transformers for Autonomous Driving)</li><li>• Nov 2022 – May 2023: <a href="#">Jovan Cicvaric</a> (Thesis: Generative Dataset Distillation)</li><li>• Mar 2021 – Sep 2021: <a href="#">Bernhard Jaeger</a> (Thesis: Expert Drivers for Autonomous Driving)</li><li>• Oct 2020 – Apr 2021: <a href="#">Micha Schilling</a> (Thesis: Visual Abstractions for Autonomous Driving)</li></ul> <p><i>Research Project Advisor</i></p> <ul style="list-style-type: none"><li>• Jun 2024 – Oct 2024: <a href="#">Zhengyu Su</a> (Project: Dataset Distillation for Autonomous Driving)</li><li>• Nov 2023 – Apr 2024: <a href="#">Jens Beißwenger</a> (Project: PDM-Lite: A Rule-Based Planner for CARLA Leaderboard 2.0)</li><li>• Apr 2022 – Sep 2022: <a href="#">Alexander Braun</a> and <a href="#">Luis Winckelmann</a> (Project: Infraction Visualization and Clustering for Better Agent Evaluation in CARLA)</li></ul>

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## Academic Activities

### Workshop Organization

- CVPR 2026: Simulation for Autonomous Driving, 03.06.2026.
- 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

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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](#).

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| 2016 | Chitta, K., & Sajjan, N. N. (2016). A reduced region of interest based approach for facial expression recognition from static images. <i>IEEE Region-10 Conference (TENCON)</i> .   |
| 2018 | Chitta, K. (2018). Targeted kernel networks: Faster convolutions with attentive regularization. <i>Workshop on Compact and Efficient Feature Representation and Learning in Computer Vision (CEFRL), European Conference on Computer Vision (ECCV)</i> .          |
|      | Chitta, K., Alvarez, J. M., & Lesnikowski, A. (2018). Deep probabilistic ensembles: Approximate variational inference through kl regularization. <i>Workshop on Bayesian Deep Learning (BDL), Conference on Neural Information Processing Systems (NeurIPS)</i> . |

- 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

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