

SHERWIN BAHMANI

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EDUCATION

- Ph.D. Computer Science**, University of Toronto Sep 2023 - Aug 2027
- Focus: Computer Vision, Computer Graphics, Machine Learning
 - Advisors: David Lindell, Andrea Tagliasacchi
- M.Sc. Computational Engineering**, Technical University of Darmstadt Apr 2018 - Sep 2021
- Focus: Computer Vision, Machine Learning
 - Advisor: Stefan Roth
- B.Sc. Mechanical and Process Engineering**, Technical University of Darmstadt Oct 2014 - Apr 2018
- Focus: Mechatronics

RESEARCH EXPERIENCE

- Research Intern: Snap Inc.** Feb 2024 - Jan 2025
- Creative Vision Group: 3D camera control in video diffusion transformers
 - Advisors: Ivan Skorokhodov, Aliaksandr Siarohin, Sergey Tulyakov
- Research Intern: Simon Fraser University** Jun 2023 - Aug 2023
- GrUVi Lab: Text-to-4D generation
 - Advisor: Andrea Tagliasacchi
 - Collaborators: Ivan Skorokhodov, Sergey Tulyakov, Jeong Joon Park, David Lindell
- Research Intern: Stanford University** Jul 2022 - Nov 2022
- Geometric Computation Group: Compositional and controllable generation of 3D scenes
 - Advisors: Jeong Joon Park, Despoina Paschalidou, Gordon Wetzstein, Leonidas Guibas
 - Collaborator: Andrea Tagliasacchi
- Research Intern: ETH Zurich** Jan 2022 - Jun 2022
- Computer Vision Lab: 4D generative adversarial networks
 - Advisors: Hao Tang, Radu Timofte, Luc Van Gool
 - Collaborators: Jeong Joon Park, Despoina Paschalidou, Gordon Wetzstein, Leonidas Guibas
- Research Intern: École Polytechnique Fédérale de Lausanne (EPFL)** Oct 2021 - Nov 2021
- Visual Intelligence for Transportation Lab: Causal motion forecasting for out-of-distribution robustness
 - Advisors: Yuejiang Liu, Alexandre Alahi
- Student Research Assistant: Technical University of Darmstadt** Apr 2021 - Oct 2021
- Visual Inference Lab: Video frame interpolation and optical flow estimation
 - Advisors: Simone Schaub-Meyer, Stefan Roth
- Master Thesis: Mercedes-Benz AG / Technical University of Darmstadt** Sep 2020 - Mar 2021
- Image Understanding Group: Multi-scale value iteration networks for panoptic segmentation
 - Advisors: Jonas Uhrig, Marius Cordts, Stefan Roth
- Working Student: Mercedes-Benz AG** Mar 2020 - Sep 2020
- Image Understanding Group: Instance and panoptic segmentation
 - Advisors: Jonas Uhrig, Uwe Franke
- Bachelor Thesis: Fraunhofer LBF** Nov 2017 - Apr 2018
- Reliability of Electric Vehicles: Battery aging forecasting using nonlinear regression
 - Advisors: Alexander Dautfest, Tobias Melz

WORK EXPERIENCE

Intern: Daimler AG

Aug 2019 - Feb 2020

- Electric Powertrain Development: Software engineering for automated hybrid powertrain designs

Intern: Porsche AG

Apr 2017 - Sep 2017

- Digital Powertrain Development: Software engineering for damage calculation in electric powertrains

ACADEMIC SERVICE

Reviewer: CVPR, ICCV, ECCV, SIGGRAPH, SIGGRAPH Asia, NeurIPS, ICLR, ICML, TPAMI, TVCG, Eurographics, Pacific Graphics, IEEE MultiMedia

PUBLICATIONS / PREPRINTS

- [1] **S.Bahmani***, I. Skorokhodov*, G. Qian, A. Siarohin, W. Menapace, A. Tagliasacchi, D. B. Lindell, and S. Tulyakov, “AC3D: Analyzing and improving 3d camera control in video diffusion transformers”, *arXiv*, 2024.
- [2] K. Namekata, **S.Bahmani**, Z. Wu, Y. Kant, I. Gilitschenski, and D. B. Lindell, “SG-I2V: Self-guided trajectory control in image-to-video generation”, *arXiv preprint arXiv:2411.04989*, 2024.
- [3] **S.Bahmani**, I. Skorokhodov, A. Siarohin, W. Menapace, G. Qian, M. Vasilkovsky, H.-Y. Lee, C. Wang, J. Zou, A. Tagliasacchi, D. B. Lindell, and S. Tulyakov, “VD3D: Taming large video diffusion transformers for 3d camera control”, *arXiv*, 2024.
- [4] **S. Bahmani***, X. Liu*, W. Yifan*, I. Skorokhodov, V. Rong, Z. Liu, X. Liu, J. J. Park, S. Tulyakov, G. Wetzstein, A. Tagliasacchi, and D. B. Lindell, “TC4D: Trajectory-conditioned text-to-4d generation”, *ECCV*, 2024.
- [5] **S. Bahmani**, I. Skorokhodov, V. Rong, G. Wetzstein, L. Guibas, P. Wonka, S. Tulyakov, J. J. Park, A. Tagliasacchi, and D. B. Lindell, “4D-fy: Text-to-4d generation using hybrid score distillation sampling”, *CVPR*, 2024.
- [6] **S. Bahmani**, J. J. Park, D. Paschalidou, X. Yan, G. Wetzstein, L. Guibas, and A. Tagliasacchi, “CC3D: Layout-conditioned generation of compositional 3d scenes”, *ICCV*, 2023.
- [7] **S. Bahmani**, J. J. Park, D. Paschalidou, H. Tang, G. Wetzstein, L. Guibas, L. Van Gool, and R. Timofte, “3D-aware video generation”, *TMLR*, 2023.
- [8] **S. Bahmani***, O. Hahn*, E. Zamfir*, N. Araslanov, D. Cremers, and S. Roth, “Semantic self-adaptation: Enhancing generalization with a single sample”, *TMLR*, 2023.
- [9] Y. Liu, R. Cadei*, J. Schweizer*, **S. Bahmani**, and A. Alahi, “Towards robust and adaptive motion forecasting: A causal representation perspective”, *CVPR*, 2022.