Felix Taubner – Résumé

AI Research Scientist working on the intersection of 3D Computer Vision and Deep Learning

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EDUCATION

PhD in Computer Science, *University of Toronto*.   **09/2024 — present**
Supervised by David B. Lindell. Specializing in 4D generative models with a focus on digital human avatars.   Toronto, Canada

MSc in Robotics, Systems and Control, *ETH Zurich*.   GPA: 5.96/6.00   **09/2019 — 08/2022**
Supervised by Roland Siegwart. Focus: 3D computer vision, perception, and artificial intelligence   Zurich, Switzerland

BSc in Mechanical Engineering, *ETH Zurich*.   GPA: 5.72/6.00   **09/2015 — 05/2019**
Focus: Robotics, control and computational methods   Zurich, Switzerland

RESEARCH EXPERIENCE

PhD Student and Research Assistant @ University of Toronto   **05/2024 — present**
Supervised by David B. Lindell.   Toronto, Canada

- Generating controllable 4D human avatars from reference images using morphable multi-view diffusion models and deformable 3D Gaussian splatting. SOTA performance on single-image and few-image 4D head avatar reconstruction. Published in CVPR 2025.

AI Research Scientist @ LG Electronics   **10/2022 — 02/2024**
Supervised by Jinmiao Huang and Kevin Ferreira.   Toronto, Canada

- Developed a vision-transformer-based 3D face tracking pipeline that achieves 54% better motion capture performance and 8% better 3D reconstruction accuracy over SOTA. Published in CVPR 2024.
- Led a team of 4 researchers (after October 2023), responsible for aligning and planning research directions with HQ across various projects in generative AI for digital human animation.

Visiting Graduate Student and Research Assistant @ University of Toronto   **11/2021 — 09/2022**
Supervised by Igor Gilitschenski.   Toronto, Canada

- Master Thesis: developed a novel representation for event-based data for downstream deep learning tasks. Improved classification accuracy on the *N-Caltech101* dataset by 2.3% over SOTA.
- Explored visual odometry applications with event-based cameras using neural radiance fields (NeRFs).

Graduate Student Research @ ETH Zurich   **01/2020 — 08/2020**
Supervised by Roland Siegwart.   Zurich, Switzerland

- Semester Thesis: Created a place recognition pipeline that uses attention-based neural networks to cluster and describe 3D line segments obtained from RGB-D cameras. Published in 3DV 2020.

OTHER EXPERIENCE

Robotics Intern @ Amazon   **04/2021 — 10/2021**
Created a control algorithm for a fleet of autonomous ground vehicles using linear programming.   Vercelli, Italy

Perception Intern @ incon.ai   **09/2020 — 04/2021**
Design and implementation of an AR assistant for sculptors using RGB-D cameras.   Zurich, Switzerland

Teaching Assistant @ ETH Zurich   **03/2017 — 09/2020**
Taught classes on undergrad level for the subjects *Innovation Project*, *Dynamics* and *Thermodynamics*.   Zurich, Switzerland

PUBLICATIONS AND SUBMISSIONS

- **Felix Taubner**, Ruihang Zhang, Mathieu Tuli and David B. Lindell: **"CAP4D: Creating Animatable 4D Portrait Avatars with Morphable Multi-View Diffusion Models"**, *CVPR 2025*   **12/2024**

- **Felix Taubner**, Prashant Raina, Mathieu Tuli, Eu Wern Teh, Chul Lee and Jinmiao Huang: **"3D Face Tracking from 2D Video through Iterative Dense UV to Image Flow"**, *CVPR 2024*   **06/2024**

- **Felix Taubner**: **"WARPS: Representing Asynchronous Event-based Data as Images of Warped Events"**, *Master Thesis*   **05/2022**

- **Felix Taubner**, Florian Tschopp, Tonci Novkovic, Roland Siegwart and Fadri Furrer: **"LCD – Line Clustering and Description for Place Recognition"**, *3DV 2020*   **11/2020**

AWARDS

- **DiDi Graduate Student Award in Computer Science** (10'000 CAD) for academic merit.   **01/2025**
- **Master Thesis Grant** from the Zeno Karl Schindler Foundation (12'000 CHF) for academic merit.   **03/2022**
- **Outstanding D-MAVT Bachelor Award** for excellent grades in first year exams (2'000 CHF).   **09/2016**