Christian Fruhwirth-Reisinger

cfr@gmx.eu | +43 664 44 07 079| Web | LinkedIn | GitHub

Professional Summary

PhD candidate in Computer Science at the Institute of Visual Computing (IVC), Graz University of Technology, supervised by Prof. Horst Bischof. Specialized in 3D computer vision, LiDAR perception, self-supervised learning, and multi-modal large language models, with hands-on experience developing scalable deep learning systems using PyTorch and PyTorch Lightning. Author of multiple publications in top-tier conferences including CVPR, ICCV, BMVC, and WACV. Actively seeking opportunities as an Applied Scientist or Computer Vision Engineer to bridge cutting-edge research with impactful real-world applications.

Education

Doctor of Philosophy, Computer Science — **Nov 2019 - Present**
Graz University of Technology — *Graz, Austria*

Master of Science, Information and Computer Engineering — **Nov 2016 - Nov 2019**
Graz University of Technology — *Graz, Austria*

Bachelor of Science, Information and Computer Engineering — **Oct 2010 - Nov 2016**
Graz University of Technology — *Graz, Austria*

Skills

Programming	Python, C++, C
Frameworks	PyTorch, PyTorch Lightning, NumPy, SciPy, OpenCV, Hydra
Tools & System	ROS, Git, Docker, SLURM, Linux
Core Competencies	3D Computer Vision, LiDAR Perception, Object Detection, Tracking, Self-Supervised Learning Unsupervised Domain Adaptation, Sensor Fusion, Dataset Curation

Experience

Institute of Visual Computing, Graz University of Technology — **Nov 2019 - Present**
University / Project Assistant (full-time) — *Graz, Austria*

- Designed and implemented novel label-efficient 3D object detection algorithms using temporal and geometric priors, reducing manual annotation effort. Published 3 first-author papers and contributed to 5+ co-authored works in top-tier venues (CVPR, ICCV, BMVC, WACV).
- Contributed to the Christian Doppler Laboratory for Embedded Machine Learning (CDL-EML) as a project team member and co-organizer by writing technical reports and reports for 2 external evaluations.
- Organized the Computer Vision lectures and exercises at the Computer Science Faculty, ensuring a positive learning experience for 650+ students.

Institute of Visual Computing, Graz University of Technology — **Mar 2018 - Nov 2019**
Project Assistant (part-time) — *Graz, Austria*

- Master's thesis: Multiple Object Tracking in the context of Autonomous Driving.
- Exploration of probabilistic models (KF, UKF, IMM, JPDAF) and Recurrent Neural Networks (RNNs) for tracking multiple objects in traffic scenes from an ego perspective, resulting in a workshop publication.

Buchhaus GmbH — **Feb 2013 - Mar 2018**
Full Stack Developer (part-time) — *Krottendorf bei Ligist, Austria*

- Independently designed, developed, and deployed a traffic management control system based on a Java Web Application (Spring Boot) and a corresponding client software for embedded devices to remotely control roadside displays, eliminating the need for the dangerous operation of roadside displays, and saving costs.
- Developed a drawing tool with a GUI in Java, allowing traffic signs and roadside messages to be created, reducing the time per sign by a factor of 6 compared to commercial drawing products.

Selected Publications

- Dušan Malić, **Christian Fruhwirth-Reisinger**, Samuel Schulter and Horst Possegger, *"LiSu: A Dataset and Method for LiDAR Surface Normal Estimation"*, In *Proc. CVPR*, 2025.
- Dušan Malić, **Christian Fruhwirth-Reisinger**, Samuel Schulter and Horst Possegger, *"GBlobs: Explicit Local Structure via Gaussian Blobs for Improved Cross-Domain LiDAR-based 3D Object Detection"*, In *Proc. CVPR*, 2025.
- **Christian Fruhwirth-Reisinger**, Wei Lin, Dušan Malić and Horst Possegger, *"Vision-Language Guidance for LiDAR-based Unsupervised 3D Object Detection"*, In *Proc. BMVC*, 2024.
- Georg Krispel, David Schinagl, **Christian Fruhwirth-Reisinger**, Horst Possegger and Horst Bischof, *"MAELi: Masked Autoencoder for Large-Scale LiDAR Point Clouds"*, In *Proc. WACV*, 2024.
- David Schinagl, Georg Krispel, **Christian Fruhwirth-Reisinger**, Horst Possegger and Horst Bischof, *"GACE: Geometry Aware Confidence Enhancement for Black-Box 3D Object Detectors on LiDAR-Data"*, In *Proc. ICCV*, 2023.
- Dušan Malić, **Christian Fruhwirth-Reisinger**, Horst Possegger and Horst Bischof, *"SAILOR: Scaling Anchors via Insights into Latent Object Representation"*, In *Proc. WACV*, 2023.
- **Christian Fruhwirth-Reisinger**, Michael Opitz, Horst Possegger and Horst Bischof, *"FAST3D: Flow-Aware Self-Training for 3D Object Detectors"*, In *Proc. BMVC*, 2021.