Zihlweg 22
8712 Stäfa
Switzerland
+41 (0)79 581 46 90
062.127@gmail.com
andreasaziegler.github.io/
andreas-ziegler

Andreas Ziegler

Personal details

Date of birth 25.03.1988
Nationality Swiss

Education

09.2014–04.2018 **Zurich**, *ETH*, MSc ETH in EEIT

Courses taken:
- Computer Vision
- Machine Learning, Data Mining, Signal and Information Processing
- Recursive Estimation, Dynamic Programming & Optimal Control
- Distributed Control
- Robot Dynamics
- How to write fast numerical code

Master Thesis: A Representation for Exploration that is Robust to State Estimate Drift
- Topics: Robotics, Exploration, Localization, Mapping
- Examiner: Prof. Dr. Roland Siegwart and Prof. Dr. Davide Scaramuzza

Semester Project 2: Map Fusion for Collaborative UAV SLAM
- Topics: Computer Vision, Robotics, Optimization
- Examiner: Prof. Dr. Roland Siegwart and Prof. Dr. Margarita Chli

Semester Project 1: Robust object tracking in 3D by fusing ultra-wideband and vision
- Topics: Computer Vision, Sensor Fusion, Robotics
- Examiner: Prof. Dr. Luc Van Gool and Prof. Dr. Otmar Hilliges

09.2009–09.2013 **Rapperswil, Switzerland**, *University of Applied Science Eastern Switzerland (HSR)*, BSc FHO in Electrical Engineering

Courses taken:
- Digital Signal processing
- Digital Image processing
- Embedded Systems / Embedded Software Engineering
- Mobile Communication

Semester thesis: Zuverlässige Sturzdetektion mit 9DOF-Schuhen
- Topic: Digital Signal processing
- Examiner: Prof. Dr. Guido Schuster

Bachelor thesis: Mobile datalogger for recording decentral captured dynamic motor vehicle data
- Topic: Embedded Software Engineering
- Examiner: Prof. Reto Bonderer

09.2011-08.2012 **Shanghai, China**, *Shanghai Jiao Tong University*, Exchange student, *School of Electric Information and Electrical Engineering*

Courses taken: Chinese language course, Electrical engineering and Computer Science courses

08.2004–08.2008 **Uster, Switzerland**, *Bildungszentrum Uster*, Technische Berufsmatura

Independent Coursework

edX DT-01x: Self-Driving Cars with Duckietown by ETHx on edX. Specialization Certificate earned on Auguts 15, 2021

Coursera Deep Learning, a 5-course specialization by deeplearning.ai on Coursera. Specialization Certificate earned on March 16, 2018

edX Autonomous Mobile Robots by ETHx on edX. Certificate earned on April 17, 2014

Work experience

08.2022–10.2022 **Paris, France**, *Prophesee*, *Computer Vision & ML Research Intern*, 100%
Worked on slow motion from frame and event data under the supervison of Dr. Amos Sironi
Technologies used: Python, PyTorch, OpenCV, numpy, git, Atlassian tools

06.2021–present **Tübingen, Germany**, *University of Tübingen*, *PhD Candidate*, 100%
Working on Event-based computer vision for fast robot control in collaboration with Sony AI Zürich under the supervision of Prof. Dr. Andreas Zell and Prof. Dr. Andreas Geiger
Technologies used: C++, Python, Julia, PyTorch, OpenCV, numpy, Eigen, ROS1/2, git, LaTeX

09.2018–05.2021 **Zwingen, Switzerland**, *MT Robot AG*, *Robotics Engineer*, 100%
Accomplished tasks:
- Development of a computer vision based safety field intrusion detection system
- Improvement of a multi robot collision avoidance system
- Development and maintenance of software for automated guided vehicle (AGVs), including topics such as multi sensor fusion, mapping, path planning, (multi robot) obstacle avoidance, etc.
- Deputy Scrum Master

Technologies used: C++, Python, ROS1/2, DDS, OpenCV, CMake, git, Atlassian tools

06.2018–09.2018 **Zurich, Switzerland**, *University of Zurich, Robotics and Perception Group*, *Research Assistant*, 100%
Accompmlished tasks:
- Research on mapping for exploration.

Technologies used: Python, git, LaTeX

04.2018–06.2018 **Zurich, Switzerland**, *Disney Research Zurich*, *Research Associate Intern*, 100%
Accomplished tasks:
- Worked on localization and sensor fusion for a UAV

Technologies used: C++, Python, ROS, Ceres, CMake, git

03.2017–08.2017 **Lausanne, Switzerland**, *Pix4D SA*, *Computer Vision & Robotics Research Intern*, 100%
Accomplished tasks:
- Worked on indoor navigation for UAVs
- Implementation of a filtering method for a robust target detection
- Participation on an indoor mapping project with an industrial partner
- Investigation of barcode localization and detection algorithms for automatic inventory
- Participation on a development of a target detection library for radiometric corrections
- Worked on various computer vision applications (Barcode localization/detection, 3D reconstruction, Camera calibration)

Technologies used: C++, ROS, OpenCV, Eigen, Conan, CMake, Jenkins, git

08.2015–06.2018 **Zürich, Switzerland**, *Accelerom AG*, *Software Engineer & System Administrator*, 20%-30%

Accomplished tasks:
- Extended and modified a Web-Tool
- Administration of the Linux Server Architecture

Technologies used: Java, Groovy, JavaScript, jQuery, CSS, Grails, Hibernate, MySQL, git, Redmine, Tomcat, Apache, SAMBA

02.2014–08.2015 **Zürich, Switzerland**, *Laboratory for Orthopaedic Biomechanics at the University and ETH Zurich*, *Research Assistant*, 100%

Accomplished tasks:
- Developed and implemented a new stretcher system
- Extended and adapted a microscope control software

Technologies used: C++, Qt, wxWidgets, CMake, git

11.2013–02.2014 **Zürich, Switzerland**, *Computer Assisted Research and Development, University Hospital Balgrist*, *Research Assistant (Civil service)*, 100%

Accomplished tasks:
- Implementation of segmentation algorithms
- Implementation of new features in existing software

Technologies used: Matlab, C#, VTK, CVS

08.2013–11.2013 **Zürich, Switzerland**, *Laboratory for Orthopaedic Biomechanics at the University and ETH Zurich*, *Research Assistant (Civil service)*, 100%

Accomplished tasks:
- Extended and adapted a microscope control software
- Developed and implemented a stretcher control software

Technologies used: C++, Qt, wxWidgets, CMake, git

08.2008–03.2009 **Wallisellen, Switzerland**, *ERPsourcing AG*, *Computer Science (Internship)*, 100%

08.2004–08.2008 **Rüti ZH, Switzerland**, *Hch. Kündig & Cie. AG*, *Electronics engineer (Apprenticeship)*, 100%

Publications

2022 Ziegler, Andreas et al. (2022). *Real-time event simulation with frame-based cameras*. DOI: 10.48550/ARXIV.2209.04634. URL: https://arxiv.org/abs/2209.04634.

2021 Horvath, Aron et al. (Jan. 2021). "Focus on time: dynamic imaging reveals stretch-dependent cell relaxation and nuclear deformation". In: *Biophysical Journal*. DOI: 10.1016/j.bpj.2021.01.020.

2020 Horvath, Aron N. et al. (Mar. 2020). "Time-controlled Multichannel Dynamic Traction Imaging of Biaxially Stretched Adherent Cells". In: DOI: 10.1101/2020.03.02.972919. URL: https://doi.org/10.1101/2020.03.02.972919.

2019 Cieslewski, Titus, Andreas Ziegler, and Davide Scaramuzza (2019). "Exploration Without Global Consistency Using Local Volume Consolidation". In: *IFRR International Symposium on Robotics Research (ISRR), Hanoi, 2019*. IFRR: IEEE. URL: https://doi.org/10.5167/uzh-197724.

Languages

German	Mother tongue
English	Excellent, Level C1
French	Good, Level B1,

Chinese	Basics, Level A2
Korean	Basics, Level A2

Technical skills

Languages	C++, Python, Julia, C, Java
Software packages	OpenCV, ROS1/2, PyTorch, Eigen, boost, DDS, pcl, scikit-learn, wxWidgets, Qt, MATLAB
Infrastructure	Microsoft Windows, Mac OS X, Linux
Office	Microsoft Office Package, LibreOffice Package, LaTeX, Markdown

Hobbies

Mountaineering	Sportclimbing, Mountain tours, Skiing, Snowboarding, Skitouring
Other sports	Yoga, Kung Fu
Music	Drums, Piano, Vocals

Extra-Curricular activities

- Board member *jevp (Junge Evangelische Volkspartei Schweiz)
- Foodsaver at Foodsharing
- Managing a Labdoo acceptance point