



Andreas Ziegler

Robotics & CV
Researcher/Engineer



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8712 Stäfa, Switzerland



+41 79 581 46 90



<https://andreasziegler.github.io>



062.127@gmail.com



Please find my full CV here

About me

I am passionate about a mix of robotics and computer vision research and industrial/commercial applications. My vision is to develop novel algorithms and make them work on real robots. I enjoy working independently on research and engineering projects, but I also appreciate the opportunity to exchange ideas with a variety of individuals from various backgrounds.

Skills

C++

Python

OpenCV

ROS

PyTorch

[The skill scale is in years of experience.]

Languages

German: Level C2

English: Level C1

French: Level B1

Korean: Level A2

Chinese: Level A1

education

- since 2021 PhD. Candidate in Robotics & Computer Vision University of Tübingen
Event-based computer vision for fast robot control
- 2014-2018 MSc. ETH in Electrical Engineering ETH Zürich
Specialized in: Robotics, Computer Vision and Machine Learning
- 2009-2013 BSc. FHO (HSR) in Electrical Engineering HSR
Specialized in: Digital Signal and Image Processing, Embedded Systems and Software Engineering and Mobile Communication
Did an exchange year at the Shanghai Jiao Tong University in China

publications

- [1] T. Gossard, J. Tebbe, A. Ziegler, and A. Zell, "Spindoe: A ball spin estimation method for table tennis robot," in *IEEE/RSJ Int. Conf. Intell. Robot. Syst. (IROS)*, IEEE, 2023.
- [2] A. Ziegler, D. Teigland, J. Tebbe, T. Gossard, and A. Zell, "Real-time event simulation with frame-based cameras," in *2023 International Conference on Robotics and Automation (ICRA)*, IEEE, May 2023, pp. 11 669–11 675.
- [3] A. Horvath, A. Ziegler, S. Gerhard, *et al.*, "Focus on time: Dynamic imaging reveals stretch-dependent cell relaxation and nuclear deformation," *Biophysical Journal*, Jan. 2021.
- [4] A. N. Horvath, A. A. Ziegler, S. Gerhard, *et al.*, "Time-controlled multichannel dynamic traction imaging of biaxially stretched adherent cells," Mar. 2020.
- [5] T. Cieslewski, A. Ziegler, and D. Scaramuzza, "Exploration without global consistency using local volume consolidation," in *IFRR International Symposium on Robotics Research (ISRR)*, Hanoi, 2019, IFRR: IEEE, Oct. 2019.

experience

- 2021- PhD Candidate University of Tübingen, Tübingen
Working on event-based computer vision for fast robot control in collaboration with Sony AI Zürich.
- 2022 Computer Vision & ML Research Intern Prophesee, Paris
Worked on slow motion from frame and event data under the supervision of Dr. Amos Sironi.
- 2018-2021 Robotics Engineer MT-Robot AG, Zwingen
Development and maintenance of software for autonomous mobile robots (AMRs), including topics such as multi sensor fusion, mapping, path planning, (multi robot) obstacle avoidance, etc., Deputy Scrum Master.
- 2018 Research Assistant University of Zürich, Robotics and Perception Group, Zürich
Continued working on my master thesis project which lead to [5].
- 2018 Research Associate Intern Disney Research Zürich, Zürich
Integrated a Leica total station in an existing ROS setup within the Paint-Copter project.
- 2018 Research Assistant Laboratory for Orthopaedic Biomechanics, Zürich
Developed an LED light controller for a microscope setup which contributed to [4].
- 2017 Computer Vision & Robotics Research Intern Pix4D SA, Lausanne
Worked on indoor navigation for UAVs, investigation of barcode localization and detection algorithms for automatic inventory.
- 2015-2018 Software Engineer & System Administrator (20%) Accelerom AG, Zürich
- 2013-2014 Research Assistant (Civil service) CARD, University Hospital Balgrist, Zürich
Worked on segmentation algorithms for computer-assisted surgical planning.
- 2013 Research Assistant (Civil service) Laboratory for Orthopaedic Biomechanics, Zürich
Extended and adapted a microscope control software which contributed to [3].
- 2004-2008 Electronics Engineer Apprentice Hch. Kündig & Cie. AG, Rütli

