Curriculum Vitae

Lukas Schmid

PhD Student
Autonomous Systems Lab (ASL)
ETH Zürich

LEE J 301
Leonhardstrasse 21
8092 Zürich
Switzerland

schmluk@ethz.ch
+41 44 632 74 74
https://n.ethz.ch/~schmluk/
ORCID: 0000-0002-3961-8145

Updated September 2022.

Education

7.2019-10.2022 **Ph.D. Student with Autonomous Systems Lab (ASL) at ETH Zürich**

- Thesis: Robust Active Perception and Volumetric Mapping in Unknown Changing Environments. Cumulative thesis of 6 first-authored papers.
- Supervised by Prof. Roland Siegwart, Cesar Cadena, and Juan Nieto, in collaboration with Prof. Marc Pollefeys, Jeffrey Delmerico, Johannes Schönberger, and Helen Oleynikova at Microsoft.
- Research exchange for 3M at Microsoft Mixed Reality AI Lab, Zürich.

9.2017-6.2019 **M.Sc. Robotics, Systems and Control (RSC) at ETH Zürich, Graduated with Distinction**

- Awarded the Willi Studer Prize for the best graduate in M.Sc. RSC.
- Awarded the ETH Medal for outstanding Master Theses.

9.2013-9.2016 **B.Sc. Mechanical Engineering at ETH Zürich**

9.2013-9.2016 **Grammar School in Frauenfeld, Graduated with Distinction**

- Honored with the Outstanding Matura Thesis Award.
- Matura Thesis "Hörvergleich und Erarbeitung einer Interpretation der Etüden Op. 10 Nr. 12, Op. 25 Nr. 1 und Op. 25 Nr. 7 von Frédéric Chopin" with grade 6.0.

Employment

11.2021-2.2022 Research Exchange at Microsoft Mixed Reality and AI Lab, Zürich.

- Working with Prof. Marc Pollefeys, Juan Nieto, Jeffrey Delmerico, and Johannes Schönberger on Panoptic Multi-TSDFs and Active Perception in Changing Scenes.
- Proposed and started two joint Master Theses, one on Incremental 3D Scene Graph Generation and one on Active Perception for Visual Long-term Re-localization.

9.2018-2.2019 Teaching Assistant at ETH Zürich, with Prof. Joachim Buhmann, D-INFK.

2.2017-6.2017 Maintenance Engineer at BOSCH, sia Abrasives Industries AG, 8500 Frauenfeld.

9.2016-2.2017 6 month Internship at BOSCH, sia Abrasives Industries AG, 8500 Frauenfeld, Department of Technical Functions.

1.2014-2.2014 5 week Workshop Intern, at Phoenix Mechano, 8260 Stein am Rhein.

Teaching

2019-current **Supervised 35+ students in projects.**
- Supervised 25+ student theses (Master-, Semester-, or Bachelor Thesis).
- Supervised 10 students in projects (Perception and Learning for Robotics).

2018-current **Teaching Assistant in Courses.**
- M.Sc. Course "Autonomous Mobile Robots" (2020, 2021, 2022)
- M.Sc. Course "Perception and Learning for Robotics" (2020, 2021, 2022)
- M.Sc. Course "Advanced Machine Learning" (2018)

2008-2015 **Supervised 10+ students in private mathematics and physics classes.**
- Middle school, grammar school, and adult qualification to university entrance (TSME) students.

2021-current **Representative of PhDs and Postdocs in the Teaching Commission of the Department of Mechanical and Process Engineering at ETHZ.**

2022-current **Member of the working group to restructure curriculum of B.Sc. Mechanical Engineering at ETHZ.**

2018-current **Didactic Education**
- Didactic Basics for Student Teaching Assistants, 1 week training at ETH Zürich, 2018.
- Power and Leadership, 6 month course at ETH Zürich, 2022.
- Workshop on Selection Procedures and Bias, 1 day training at ETH Zürich, 2022.

Awards

2020 Willi Studer Prize for the best graduate in M.Sc. RSC at ETH Zürich.
2020 ETH Medal for outstanding master thesis.
2013 Grammar School Frauenfeld Award for excellent graduates.
2013 Grammar School Frauenfeld Award for outstanding Matura Thesis.

Engagements

2020-current **20+ Reviews for Journals, Conferences, and Workshops.**
- T-RO (2022)
- Pattern Recognition (2022)
- RA-L (2020, 2021, 2022)
- ICRA (2021, 2022)
- IROS (2021, 2022)
- NeurIPS (2021)

2.2020-current **Member of Board, Association of Scientific Staff of the Department of Mechanical and Process Engineering (AV-MAVT), ETH Zürich.**
- Representative of PhDs and postdocs in the department conference.
- Representative of PhDs and postdocs in the departmental teaching commission.
- Representative of PhDs and postdocs in the working group restructuring the curriculum of B.Sc. Mechanical Engineering at ETHZ.

6.2018-6.2022 **Member of Board, Student Wine Association Zürich (SWAZ).**
- Joint association of ETHZ and University Zürich.
- Collaboration with industry partners (Landolt, Zweifel, Baur au Lac, Mövenpick, Smith&Smith, Rare Wines Zürich, Provins, and others).

2019-current **IEEE Robotics and Automation Society (RAS), Graduate Student Member.**

Languages

German	Mother Tongue. Also includes Swiss German.
English	Fluent. Level C2, Cambridge Certificate in Advanced English (CAE), Grade A, 2013. 5+ years of study and work in English.
French	Conversant. Level B2, Diplôme d'Études en Langue Française (DELF), 2012.

Skills

Programming Excellent programming in C++, Python, and LaTex. Worked with C#, Matlab, and VisualBasic.

Open-source Code I am a strong proponent of open-source code and make most of my projects publicly available. A selection of code-bases is given below:
`https://github.com/ethz-asl/panoptic_mapping`,
`https://github.com/ethz-asl/mav_active_3d_planning`,
`https://github.com/ethz-asl/glocal_exploration`,
`https://github.com/ethz-asl/unreal_airsim`,
`https://github.com/ethz-asl/config_utilities`

Simulation Unreal Engine 4, AirSim, Unity, Gazebo, CoppeliaSim, Siemens NX CAD, and COMSOL Multiphysics FEM.

Robotics ROS, Matlab, and Simulink.

Machine Learning PyTorch, Tensorflow, Keras, and SciKit Learn.

IT Maintained websites and newsletters for multiple associations.

Interests

Besides my studies, I am a passionate classical pianist (four times winner of the 1^{st} prize at the Thurgauer Youth Music Competition, 3 times with award). Furthermore, I enjoy team sports such as volleyball, especially beach volleyball during summer. For recreation, I relish various water sports such as scuba diving (PADI Advanced Open Water Diver), sailing (Swiss Yachting Certificate) as well as wave, wake, and wind surfing.