Kailin Huang

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Birth: 15.05.1993 in Beijing, China
Nationality: Chinese
Workpermit: Yes (Niederlassungsbewilligung C)

Education

09.2016 – 08.2019	**ETH Zürich, Switzerland** **Mechanical Engineering MSc – GPA 5.19/6** **Focus:** Robotics: Computer Vision and SLAM **Master Thesis:** Dense Object Simultaneous Localization and Mapping (SLAM) **Main Courses:** Machine Learning, Image Analysis and Computer Vision, Robot Dynamics, Recursive Estimation, Dynamic Programming and Optimal Control, Vehicle Propulsion System, Flight Dynamics, Fundamentals of CFD, Advanced CFD, Turbulent Flows
09.2012 – 08.2016	**ETH Zürich, Switzerland** **Mechanical Engineering BSc - GPA 5.27/6** • Focus Project: Formula Student Electric (Aerodynamics) • Bachelor's thesis: Feasibility study of an unsprung aerodynamic package on a Formula Student race car
08.2009 – 06.2012	**Gymnasium Marienthal, Hamburg, Germany** **German Highschool - Abitur grade 1.2 (best 1.0, pass 4.0, worst 6.0)** • Main courses: Physics, Chemistry and Biology • Extracurricular: Event AG: event management and stagecraft

Work / Project Experience

09.2019 – present	**Fixposition AG, Zürich: Sensor Fusion Engineer** • Sensor fusion for localization using VO/VIO, GNSS, IMU, V-SLAM • Embedded Linux software development • Tools for data organization, analysis and visualization
07.2019 – 08.2019	**Fixposition AG, Zürich: Working Student** • Sensor fusion for localization using GNSS and IMU • Developing software tools
12.2018 – 01.2019	**NIO, Shanghai: Autonomous Driving Internship** • Sensor fusion using particle filtering for lane level localization using Vision, GNSS and IMU data.
03.2018 – 10.2018	**Computer Vision and Geometry Group, ETH Zürich** **Master Thesis:** Dense Object Simultaneous Localization and Mapping (SLAM) Grade 5.5/6 • Supervisor: Prof. Marc Pollefeys • Dense SLAM using RGB-D cameras with semantic instance segmentation using deep learning. Using alignment of depth image to create a reconstruction of each object, which can be used as landmarks for localization and loop closure.
03.2016 – 09.2016	**MAHLE Behr GmbH Co. KG, Stuttgart, Germany** **Internship** CFD Method Development • Programming Java-Tools for automation of STAR-CCM+ workflow and Post-Processing visualizations

09.2013 – 08.2015	**Akademischer Motorsportverein Zürich (AMZ Racing Team)** • Design of the steering system • Design of the aerodynamic package (Siemens NX) and CFD simulation (STAR-CCM+) • Wind tunnel testing at RUAG automotive wind tunnel in Emmen, Switzerland Awards & Achievements • Winner in FSE Spain and FSE Austria and 2nd in FSE Germany • World Ranking No. 1 of Formula Student Electric
	ETH Zürich **Teaching Assistant** for following lecturers Leading exercise hours for groups of 20-25 students
02.2018 – 06.2018	• Informatics 1 for Mechanical Engineers (C++)
09.2016 – 12.2016	• Introduction in Programming 1 for Computer Science (Java)
09.2014 – 12.2014	• Engineering Design (Dimensioning) 1
05.2012 – 06.2012	• **Getriebebau NORD, Bargteheide, Germany** • Workshop Internship: Milling, Lathing, Drilling and Welding

Skills

Languages	German: native English: full working proficiency Chinese: native
Computer	**Programming Languages:** • C++ • Python • Java **Software:** • ROS • OpenCV • OpenCL (very limited experience) • Ceres • Git • MATLAB / Octave • Siemens UG NX: CAD Modeling and Structural FEM • STAR-CCM+: CFD Simulation • ANSYS: Structural FEM (basic knowledge) • Microsoft Office • LaTeX **Operating Systems:** • Linux • Microsoft Windows