

Dr. Sebastian Andreas Scherer



Background

- Since January 2010: Research assistant at the Department of Computer Architecture, University of Tübingen
- 2006-2007: Exchange Student at David R. Cheriton School of Computer Science, University of Waterloo
- 2003-2009: Studies of Computer Science, University of Tübingen

Research Interests

- Computer Vision
- Visual Simultaneous Localization and Mapping
- Autonomous Flying Robots

Publications

- [1] Shaowu Yang, Sebastian A. Scherer, Xiaodong Yi, and Andreas Zell. Multi-camera visual {SLAM} for autonomous navigation of micro aerial vehicles. *Robotics and Autonomous Systems*, 93:116 -- 134, 2017. [[DOI](#) | [link](#)]
- [2] Sebastian Otte, Christian Weiss, Tobias Scherer, and Andreas Zell. Recurrent Neural Networks for Fast and Robust Vibration-based Ground Classification on Mobile Robots. In *IEEE International Conference on Robotics and Automation (ICRA)*, Stockholm, Sweden, May 2016.
- [3] Sebastian A. Scherer, Shaowu Yang, and Andreas Zell. Dctam: Drift-corrected tracking and mapping for autonomous micro aerial vehicles. In *Unmanned Aircraft Systems (ICUAS), 2015 International Conference on*, pages 1094--1101, Denver, CO, USA, June 2015. [[link](#)]
- [4] Shaowu Yang, Sebastian A. Scherer, and Andreas Zell. Robust onboard visual SLAM for autonomous MAVs. In *2014 International Conference on Intelligent Autonomous Systems (IAS-13)*, Padova, Italy, July 2014.
- [5] Shaowu Yang, Sebastian A. Scherer, and Andreas Zell. Visual SLAM for autonomous MAVs with dual cameras. In *2014 International Conference on Robotics and Automation (ICRA'14)*, Hongkong, China, June 2014.
- [6] Shaowu Yang, Sebastian A. Scherer, Konstantin Schauwecker, and Andreas Zell. Autonomous Landing of MAVs on Arbitrarily Textured Landing Sites using Onboard Monocular Vision. *Journal of Intelligent & Robotic Systems*, 74(1-2):27--43, 2014. [[DOI](#) | [link](#)]
- [7] Lixing Jiang, Artur Koch, Sebastian A. Scherer, and Andreas Zell. Multi-class fruit classification using RGB-D data for indoor robots. In *IEEE International Conference on Robotics and Biomimetics (ROBIO)*, Shenzhen, China, December 2013.
- [8] Sebastian A. Scherer and Andreas Zell. Efficient Onboard RGBD-SLAM for Fully Autonomous MAVs. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2013)*, Tokyo Big Sight, Japan, November 2013.
- [9] Sebastian A. Scherer, Alina Kloss, and Andreas Zell. Loop Closure Detection using Depth Images. In *European Conference on Mobile Robots (ECMR 2013)*, Barcelona, Catalonia, Spain, September 2013.
- [10] Shaowu Yang, Sebastian A. Scherer, Konstantin Schauwecker, and Andreas Zell. Onboard Monocular Vision for Landing of an MAV on a Landing Site Specified by a Single Reference Image. In *2013 International Conference on Unmanned Aircraft Systems (ICUAS'13)*, pages 317--324, Atlanta, GA, USA, May 2013. [[link](#)]

- [11] Shaowu Yang, Sebastian A. Scherer, and Andreas Zell. An onboard monocular vision system for autonomous takeoff, hovering and landing of a micro aerial vehicle. *Journal of Intelligent & Robotic Systems*, 69(1--4):499--515, January 2013. [[link](#)]
- [12] Konstantin Schauwecker, Nan Rosemary Ke, Sebastian A. Scherer, and Andreas Zell. Markerless Visual Control of a Quad-Rotor Micro Aerial Vehicle by Means of On-Board Stereo Processing. In *22nd Conference on Autonomous Mobile Systems (AMS)*, pages 11--20, Stuttgart, Germany, September 2012. Springer. [[link](#)]
- [13] Shaowu Yang, Sebastian A. Scherer, and Andreas Zell. An Onboard Monocular Vision System for Autonomous Takeoff, Hovering and Landing of a Micro Aerial Vehicle. In *2012 International Conference on Unmanned Aircraft Systems (ICUAS'12)*, Philadelphia, PA, USA, June 2012.
- [14] Sebastian A. Scherer, Daniel Dube, and Andreas Zell. Using Depth in Visual Simultaneous Localisation and Mapping. In *IEEE International Conference on Robotics and Automation*, St. Paul, Minnesota, USA, May 2012.
- [15] Sebastian A. Scherer, Daniel Dube, Philippe Komma, Andreas Masselli, and Andreas Zell. Robust Real-Time Number Sign Detection on a Mobile Outdoor Robot. In *Proceedings of the 6th European Conference on Mobile Robots (ECMR 2011)*, Örebro, Sweden, September 2011.

Competitions

- DLR SpaceBot Cup 2015
- SICK robot day 2012 (2nd place with Team Attempto)
- SICK robot day 2010 (1st place with Team Attempto)
- Robocup World Cup 2006 (1st place free technical challenge with Team Attempto)

Address, Phone, Fax, Email

Eberhard-Karls-Universität Tübingen
Wilhelm-Schickard-Institut für Informatik
Lehrstuhl Rechnerarchitektur
Sand 1
D - 72076 Tübingen

Germany
Tel: (+49/0) 7071 / 29 78982
Fax: (+49/0) 7071 / 29 5091
Email: sebastian.scherer@uni-tuebingen.de