

Dr. Sebastian Buck



Background

- 2012 - 2017: Research assistant at the Department of Cognitive Systems, University of Tübingen
- 2010 - 2012: Master of Science in Computer Science at the University of Tübingen
- 2007 - 2010: Bachelor of Science in Computer Science at the University of Tübingen

Research Interests

- Wheel based mobile robots
- Robot vision
- High level robot control

Projects

- cs::APEX - Algorithm Prototyper and Experimentor
- GeRoNa: Generic Robot Navigation
- Personenerkennendes Autonomes Transportsystem zum Containertransport in Krankenhäusern (PATSY)
- DLR SpaceBot Camp 2015
- SICK robot day

Robot Competitions / Events

- DLR SpaceBot Camp 2015 with Team Attempto
- 2nd place in SICK robot day 2014 with Team Attempto
- 2nd place in [SICK robot day 2012](#) with Student Team Attempto
- 5th place in [Field Robot Event 2011](#) with Team Attempto
- 8th place in SICK robot day 2010 with Student Team sTuebingerRobotle

Publications

- [1] Goran Huskić, Sebastian Buck, Matthieu Herrb, Simon Lacroix, and Andreas Zell. High-speed path following control of skid-steered vehicles. *The International Journal of Robotics Research*, page 0278364919859634, 2019.
- [2] Goran Huskić, Sebastian Buck, and Andreas Zell. Gerona: Generic robot navigation. *Journal of Intelligent & Robotic Systems*, pages 1--24, 2018.
- [3] Sebastian Buck and Andreas Zell. Cs::apex: A framework for algorithm prototyping and experimentation with robotic systems. *Journal of Intelligent & Robotic Systems*, Apr 2018. [[DOI](#)]
- [4] Goran Huskić, Sebastian Buck, Luis Azareel Ibargüen González, and Andreas Zell. Person following at higher speeds using a skid-steered mobile robot. In *Intelligent Robots and Systems (IROS), 2017 IEEE/RSJ International Conference on*, Vancouver, Canada, September 2017.
- [5] Sebastian Buck, Richard Hanten, Karsten Bohlmann, and Andreas Zell. Multi-sensor payload detection and acquisition for truck-trailer agvs. In *Robotics and Automation (ICRA), 2017 IEEE International Conference on*, Singapore, 2017.

- [6] Goran Huskić, Sebastian Buck, and Andreas Zell. Path following control of skid-steered wheeled mobile robots at higher speeds on different terrain types. In *IEEE International Conference on Robotics and Automation (ICRA)*, Singapore, 2017.
- [7] Sebastian Buck, Richard Hanten, Karsten Bohlmann, and Andreas Zell. Generic 3d obstacle detection for agvs using time-of-flight cameras. In *Intelligent Robots and Systems (IROS), 2015 IEEE/RSJ International Conference on*, pages 4119 -- 4124, Daejeon, Korea, October 2016. [[DOI](#)]
- [8] Goran Huskić, Sebastian Buck, and Andreas Zell. A simple and efficient path following algorithm for wheeled mobile robots. In *Intelligent Autonomous Systems (IAS), The 14th International Conference on*, Shanghai, CN, July 2016. [[DOI](#)]
- [9] Richard Hanten, Sebastian Buck, Sebastian Otte, and Andreas Zell. Vector-amcl: Vector based adaptive monte carlo localization for indoor maps. In *Intelligent Autonomous Systems (IAS), The 14th International Conference on*, Shanghai, CN, July 2016.
- [10] Sebastian Buck, Richard Hanten, C. Robert Pech, and Andreas Zell. Synchronous dataflow and visual programming for prototyping robotic algorithms. In *Intelligent Autonomous Systems (IAS), The 14th International Conference on*, pages 911--923, Shanghai, CN, July 2016. [[DOI](#)]
- [11] Sebastian Buck, Richard Hanten, Goran Huskić, Gerald Rauscher, Alina Kloss, Jan Leininger, Eugen Ruff, Felix Widmaier, and Andreas Zell. Conclusions from an object-delivery robotic competition: Sick robot day 2014. In *Advanced Robotics (ICAR), The 17th International Conference on*, pages 137--143, Istanbul, TR, July 2015. [[DOI](#) | [link](#)]
- [12] Karsten Bohlmann, Andreas Beck-Greinwald, Sebastian Buck, Henrik Marks, and Andreas Zell. Autonomous person following with 3d lidar in outdoor environments. In *1st International Workshop on Perception for Mobile Robots Autonomy (PEMRA 2012)*, Poznan, Poland, September 2012.

Theses

Modeling Robotic Systems with Activity Flow Graphs
PhD thesis, University of Tübingen, 2017

Visuelles Tracking mobiler Outdoor-Roboter mittels lokaler Deskriptoren
Master's thesis, University of Tübingen, November 2012

3D-Simulation eines Teams von Outdoor-Robotern
Bachelor's thesis, University of Tübingen, August 2010

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