

## Background

- Since August 2009: Research Assistant at the Department of Cognitive Systems of the University of Tübingen (LGF scholarship)
- 2008 - 2009: Teaching Practice at the Staatliches Seminar für Didaktik und Lehrerbildung Tübingen
- Fall 2007: Internship at Robert Bosch GmbH in Gerlingen/Schillerhöhe
- December 2006: Diploma thesis: "Visuelle Selbstlokalisierung eines mobilen Outdoor-Roboters" (Visual self localisation of a mobile outdoor robot)
- 2003 - 2004: Stay abroad in Eugene, OR, USA (DAAD scholarship)
- 1999 - 2007: Studies of Computer Science (Bioinformatics) at the University of Tübingen



## Research Interests

- Outdoor Mobile Robots (UGVs and UAVs)
- Vision-based Self-Localization

## Awards

- October 2012: Second place at the SICK Robot Day challenge
- October 2010: Winner of the SICK Robot Day challenge
- June 2003: Winner of the technical challenge of the RoboCup

## Current Projects

- 3D Mouse - A device which allows the user to manipulate virtual 3D Objects in all six degrees of freedom fast and intuitively.
- SICK Robot Day - We regularly participate at the international robot competition organized by the SICK AG in Germany.
- Tracking Vehicles with Autonomous Flying Robots - A method for self-localization and controlling the pose of MAVs. Our onboard solutions deal with limited payload capacity and little processing power but allow visual indoor and outdoor flights and carrier tracking.<

## Supervised theses

2013 Bachelor thesis Anflug von beweglichen Objekten durch einen Quadrocopter

2013 Bachelor thesis GPS-Navigationssystem mit Flugdatenvisualisierung

2013 Master thesis Luftbildbasierte Navigation eines Quadrocopters

2013 Diploma thesis Verfolgung dynamischer Objekte mit einem Quadrocopter

2011 Diploma thesis Visuelle Odometrie auf einem mobilen Roboter

## Publications

- [1] Andreas Masselli and Andreas Zell. A new method for solving the perspective-three-point problem. In *International Conference on Pattern Recognition (ICPR 2014)*, Stockholm, Sweden, August 2014. Accepted for publication.
- [2] Andreas Masselli, Richard Hantén, and Andreas Zell. Localization of unmanned aerial vehicles using terrain classification from aerial images. In *2014 International Conference on Intelligent Autonomous Systems (IAS-13)*, Padova, Italy, July 2014.
- [3] Andreas Masselli, Shaowu Yang, Karl Engelbert Wenzel, and Andreas Zell. A cross-platform comparison of visual marker based approaches for autonomous flight of quadrocopters. *Journal of Intelligent & Robotic Systems*, 73(1-4):349--359, 2014. [ [DOI](#) ]
- [4] Jacobo Jimenez Lugo, Andreas Masselli, and Andreas Zell. Following a quadrotor with another quadrotor using computer vision. In *European Conference on Mobile Robots (ECMR 2013)*, Barcelona, Catalonia, Spain, September 2013.

- [5] Andreas Masselli, Richard Hanten, and Andreas Zell. Robust Real-Time Detection of Multiple Balls on a Mobile Robot. In *European Conference on Mobile Robots (ECMR 2013)*, Barcelona, Catalonia, Spain, September 2013.
- [6] Andreas Masselli, Shaowu Yang, Karl Engelbert Wenzel, and Andreas Zell. A cross-platform comparison of visual marker based approaches for autonomous flight of quadcopters. In *Proceedings of International Conference on Unmanned Aircraft Systems*, pages 1--9, Atlanta, Georgia, USA, May 2013.
- [7] My Vo Duc, Andreas Masselli, and Andreas Zell. Real time face detection using geometric constraints, navigation and depth-based skin segmentation on mobile robots. In *2012 IEEE International Symposium on Robotic and Sensors Environments*, Magdeburg, Germany, November 2012.
- [8] Karl Engelbert Wenzel, Andreas Masselli, and Andreas Zell. Visual tracking and following of a quadcopter by another quadcopter. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2012)*, pages 1--6, Vilamoura, Algarve, Portugal, October 7-12 2012. IEEE.
- [9] Yasir Niaz Khan, Andreas Masselli, and Andreas Zell. Visual terrain classification by flying robots. In *IEEE International Conference on Robotics and Automation (ICRA)*, pages 498--503, St. Paul, Minnesota, USA, may 2012. [ [DOI](#) ]
- [10] Andreas Masselli, Karl Engelbert Wenzel, and Andreas Zell. Verfahren zur Bestimmung der relativen Lage eines Objektes im Raum sowie optisches Eingabesystem, 2012. Patent, PCT/EP2012/057446, Submitted 2012.04.24.
- [11] Andreas Masselli and Andreas Zell. A Novel Marker Based Tracking Method for Position and Attitude Control of MAVs. In *Proceedings of International Micro Air Vehicle Conference and Flight Competition*, pages 1--6, Braunschweig, Germany, 2012. DGON.
- [12] 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.
- [13] Andreas Masselli, Karl Engelbert Wenzel, and Andreas Zell. Verfahren zur Bestimmung der relativen Lage eines Objektes im Raum sowie optisches Eingabesystem, 2011. Patent, DE 10 2011 075 253.6, Submitted 2011.05.04.
- [14] Karl Engelbert Wenzel, Andreas Masselli, and Andreas Zell. Automatic Take Off, Tracking and Landing of a Miniature UAV on a Moving Carrier Vehicle. *Journal of Intelligent & Robotic Systems*, 61:221--238, 2010. [ [DOI](#) ]
- [15] Karl Engelbert Wenzel, Andreas Masselli, and Andreas Zell. Automatic Take Off, Tracking and Landing of a Miniature UAV on a Moving Carrier Vehicle. In *Proceedings of UAV'10 3rd International Symposium on Unmanned Aerial Vehicles*, pages 1--18, Dubai, UAE, 2010. Kimon P. Valavanis.
- [16] Karl Engelbert Wenzel, Andreas Masselli, and Andreas Zell. A Quadcopter Hovering above a Person Wearing a Modified Cap. In *Proceedings of International Micro Air Vehicle Conference and Flight Competition*, pages 1--7, Braunschweig, Germany, 2010. DGON.
- [17] Christian Weiss, Andreas Masselli, and Andreas Zell. Fast vision-based localization for outdoor robots using a combination of global image features. In *6th Symposium on Intelligent Autonomous Vehicles (IAV 2007)*, Toulouse, France, September 2007.
- [18] Christian Weiss, Andreas Masselli, Hashem Tamimi, and Andreas Zell. Fast outdoor robot localization using integral invariants. In *5th International Conference on Computer Vision Systems (ICVS 2007)*, pages 21--24, Bielefeld, Germany, March 2007.
- [19] Christian Weiss, Hashem Tamimi, Andreas Masselli, and Andreas Zell. A hybrid approach for vision-based outdoor robot localization using global and local image features. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2007)*, pages 1047--1052, San Diego, CA, USA, 2007.
- [20] André Treptow, Andreas Masselli, and Andreas Zell. Real-time object tracking for soccer-robots without color information. In *European Conference on Mobile Robotics (ECMR 2003)*, pages 33--38, Radziejowice, Poland, 2003.

## Contact

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