**Timo Hinzmann**

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## MASTER THESIS *(Master student, 6 months full-time)*

- Pascal Schoppmann (2020): "Multi-Resolution Elevation Mapping and Safe Landing Site Detection for an Autonomous Rotorcraft", supervised by Roland Brockers (JPL), Michael Pantic, and Timo Hinzmann
- Sandro Berchier (2019): "Experimental Validation of State Estimation and Localization for Hybrid MAVs in Perceptually Degraded Environments", supervised by Abel Gawel, Timo Hinzmann, Luca Carlone (MIT), and Ali Agha (JPL).
- Daniel Hentzen (2018): "Robust Multirotor Precision Landing in Outdoor Environment", supervised by Thomas Stastny, Timo Hinzmann and Roland Brockers (JPL).
- Andreea Lutac (2018): "Optimal Pose Selection for Aerial Dense Reconstruction and Localization", supervised by Timo Hinzmann and Rik Bähnemann.
- Tobias Stegemann (2018): "Deep Learning-based Human Detection in Optical and Thermal Aerial Imagery", supervised by Timo Hinzmann and Cesar Cadena.
- Ruben Mascaro (2017): "Graph-Optimization Based Multi-Sensor Fusion for Robust UAV Pose Estimation", supervised by Lucas Teixeira (Vision for Robotics Lab, ETH Zurich) and Timo Hinzmann.
- Adam Radomski (2017): "Closed-Loop Multi-Sensor SLAM for Fixed-Wing UAVs", supervised by Timo Hinzmann and Thomas Schneider.
- Marius Huber (2017): "Autonomous Rotorcraft Landing with Structured Light Stereo Vision", supervised by Larry Matthies (JPL), Roland Brockers (JPL), Timo Hinzmann, and Thomas Stastny.
- Danylo Malyuta (2017): "Guidance, Navigation, Control and Mission Logic for Quadrotor Full-cycle Autonomy", supervised by Roland Brockers (JPL), Thomas Stastny, and Timo Hinzmann.
- Ryen Elith (2017): "Design of a Radar System for Sense and Avoid Applications", supervised by Amir Melzer and Timo Hinzmann.
- Ricardo Zurfluh (2016): "GNSS-Based Attitude Determination for Automatic Magnetometer Calibration Ricardo Zurfluh", supervised by Timo Hinzmann and Amir Melzer.
- Julius Kümmerle (2016): "Real-time Detection and Tracking of Multiple Human Targets from Aerial Vehicles Using Thermal Imagery", supervised by Timo Hinzmann and Anurag Vempati.
- Bastien Chatton (2016): "Thermal Updraft Prediction for a Fixed-Wing UAVs", supervised by Philipp Oettershagen and Timo Hinzmann.
- Nicolas El Hayek (2016): "Ridge Lift Exploitation for Small Unmanned Fixed-Wing Aircraft", supervised by Thomas Stastny, Philipp Oettershagen, and Timo Hinzmann.
- Mathias Gehrig (2016): "Robust and Efficient Loop-Closure Detection for Aerial Images", supervised by Timo Hinzmann and Elena Stumm.
- Pavel Vechersky (2016): "Development of a Comprehensive, Hardware-in-the-Loop Simulation Environment for Fixed-Wing UAVs", supervised by Timo Hinzmann, Thomas Stastny, and Philipp Oettershagen.
- Andreas Forster (2016): "Tightly Coupled GNSS Integration into a SLAM Framework", supervised by Timo Hinzmann and Amir Melzer.
- Felix Renaut (2015): "Vision-Based Autonomous Landing of an Unmanned Fixed-Wing UAV", supervised by Timo Hinzmann and Thomas Stastny.
- Andreas Schaffner (2015): "Demonstration of Visual Navigation with Fixed-Wing UAVs", supervised by Timo Hinzmann, Gabriel Agamennoni, and Tim Dawson-Townsend (Aurora).

## SEMESTER THESIS *(Master student, 3-4 months part-time)*

- Felix Graule (2019): "Towards Robust Cross-Spectral Optical-Thermal SLAM onboard a fixed-wing UAV", supervised by Timo Hinzmann, Florian Achermann, and Nicholas Lawrance.
- Balazs Nagy (2017): "Constrained, Non-rigid, Wide-baseline Stereo Vision for Fixed-wing Aerial Platforms (Continued)", supervised by Timo Hinzmann.
- Rudolf Metzler (2017): "High-quality Ground-Truth Generation for Fixed-Wing UAVs", supervised by Guillaume Sébastien (ETHZ, IGP) and Timo Hinzmann.
- Jingwei Tang (2017): "Mutual-Information-Based Direct Visual-Inertial Odometry", supervised by Timo Hinzmann.
- Patrik Frey (2017): "Multi-Sensor Multi-State Constraint Kalman Filter for Fixed-Wing UAVs", supervised by Timo Hinzmann.
- Tim Taubner (2017): "Constrained, Non-rigid, Wide-baseline Stereo Vision for Fixed-wing Aerial Platforms", supervised by Timo Hinzmann and Thomas Stastny.

## BACHELOR THESIS *(Bachelor student, 3-4 months part-time)*

- Laurent Braun (2016): "Robust Vision-Based Localization for Fixed-Wing UAVs", supervised by Timo Hinzmann.

**PROGRAMMING EXERCISES** *(Master students, 1 semester part-time)*

- Emilk Sempertegui, Cliff Li, and Giancarlo Di Biase (2019): "Towards Semi-Supervised Learning for Human Detection from Aerial Images", supervised by Timo Hinzmann, within the course "Perception and Learning for Robotics".
- Hrishikesh Gupta (2019): "Semantic Segmentation for Autonomous landing site detection using RGB Aerial Images", supervised by Timo Hinzmann, within the course "Perception and Learning for Robotics".
- Adrian Ruckli and Alberto Pennino (2018): "Deep Learning Enhanced Human Detection using RGB and Infrared Imagery onboard of Fixed-Wing UAVs", supervised by Timo Hinzmann, within the course "Perception and Learning for Robotics".

**SEMINAR** *(Bachelor or Master student, 3-4 months part-time)*

- Jingwei Tang (2017): "Long Range Landmark Observations and their Influence on the Convergence of Bundle-Adjustment Problems", supervised by Timo Hinzmann.

**FOCUS PROJECT** *(6-8 Bachelor students, 1 year project full-time)*

- Michael Arigoni (2015): "Control of a Wall Racing Robot for Agile Ground Maneuvers", supervised by Timo Hinzmann and Lennon Rodgers (MIT).

**TEACHING**

- Perception and Learning for Robotics (Exercises, 2018 and 2019)
- Autonomous Mobile Robots (Exercises, 2015-2018)
- Artificial Intelligence for Robotics (Exercises, 2017)
- Robot Dynamics (Exercises, 2015)