Yu Zhou

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Education

Joint Master of Northeastern University and Chinese Academy of Science, Shenyang, China
MEng, Control Engineering. Sep. 2014 — Jan. 2017
GPA: 3.59/4.00; Rank: 1/168.

Northeastern University, Qinhuangdao, China
BEng, Automation. Sep. 2010 — Jun. 2014
GPA: 4.10/4.33; Rank: 4/196.

Work Experience

Associate Scientist Mar. 2018 — present
Temasek Laboraties, Singapore

Research Engineer Mar. 2017 — Mar. 2018
Advanced Robotics Center, National University of Singapore

Research Assistant Sep. 2014 — Jan. 2017
State Key Laboratory of Robotics, Chinese Academy of Science, China

Engineering Intern Jul. 2014 — Aug. 2014
DJI, Shenzhen, China

Relevant Projects

Face detection and human tracking with a drone Mar. 2018 — Jun. 2018
Temasek Laboraties, Singapore

Using a drone for human tracking and detection.

- Generated trajectories with Reflexxes;
- Implemented a state machine to manage tasks.

UAV tracking and landing on a moving platform Mar. 2017 — Jan. 2018
Advanced Robotics Centre, National University of Singapore, Singapore

Autonomous UAV tracking and landing on a moving platform under GPS-denied environment.

- Visual marker detection;
- System integration and software implementation of a visual-guided UAV.

Unmanned Ground Systems Challenge Apr. 2016 — Sep 2016
Crossing Obstacles 2016, State Key Laboratory of Robotics, SIA CAS, China

Directed the UGV localization under GPS-denied conditions and part of the laser environment modeling.

- Integrated 64-line, 32-line, single-line laser data and vision for obstacle detection, built obstacle layer environment map information;
- Integrated laser and vision data, and added vision color information to the laser point cloud for segmentation;
- Leveraged laser odometry methods to achieve the UGV localization without GPS

Research on VIO-based localization algorithms Dec. 2015 — Oct. 2016
Northeastern University, China

Localization algorithm research based on the integration of visual, inertial and magnetic data. Algorithms include vision odometry, inertial navigation and sensor fusion.

- Integrated the IMU and magnetic data with an error state Kalman filter to obtain attitude estimation;
- Implemented visual odometry based on the feature method;
- Pose estimation obtained with vision and IMU integration via a multi-state Kalman filter simulation.

Unmanned Aerial Vehicle Grand Prix Dec. 2015 — Oct. 2016
The 3rd International UAV Innovation Grand Prix, State Key Laboratory of Robotics, SIA

CAS, China

Supervised the visual guidance program development.

- Achieved the detection and recognition of ellipses and 2D binary code markers;
- Achieved the acquisition of relative pose between mobile markers and the aircraft.

Publications

Development of nano UAV platform for navigation in gps-denied environment using snapdragon. **Yu Zhou**, Geng Qin, Feng Lin. IEEE IECON 2018.

Decentralized robust exact tracking control for 2-DOF planar robot manipulator. Zhenxing Sun, **Yu Zhou**, Xinghua Zhang, Haoyong Yu. IEEE ICARM 2018.

Visual Target Detection and Tracking Framework Using Deep Convolutional Neural Networks for Micro Aerial Vehicles. Mingjie Lao, Xudong Chen, Feng Lin, Geng Qin, Wenqi Liu, **Yu Zhou**. IEEE ICCA 2018.

A robust real-time vision based GPS-denied navigation system of UAV. Liying Yang, Bin Xiao, **Yu Zhou**, Yuqing He, Hongzhi Zhang, Jianda Han. IEEE CYBER 2016.

Honors & Activities

The 3rd International UAV Innovation Grand Prix — *2st prize*	Oct. 2015
Northeastern University Scholarship — *1st prize*	Sep. 2015
Outstanding Bachelor Paper Award	Jun. 2014
National Undergraduate Electronic Design Contest — *2nd prize*	Oct. 2013

Skills

Languages: C++/C, MATLAB, Python.
Frameworks/Libraries/Tools: ROS, OpenCV, PCL, Qt, Linux, Git, CMake.
Sensors: Vision, IMU, LASER, LIDAR.

Languages

Mandarin (native); English (full professional proficiency).