Fei Gao

CONTACT INFORMATION	Robotics Institute,	
	Department of Electronic and Computer Engineering,	
	Room 2014A, CYT Building,	Tel: 852-54989426
	Hong Kong University of Science and Technology	E-mail: fgaoaa@ust.hk
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RESEARCH INTERESTS — Aerial Robotics, Autonomous Navigation, Motion Planning and Control, Applied Convex Optimization

EDUCATION

Hong Kong University of Science and Technology, Kowloon, Hong Kong

Ph.D., Electronic and Computer Engineering, *Expected:* Summer 2020
- Thesis Topic: *Quadrotor Online Motion Planning and Fast Autonomous Navigation*
- Advisor: Shaojie Shen, Ph.D.
- CGA: 4.18/4.3

Zhejiang University, Hangzhou, Zhejiang Province, P.R. China

B.Eng., Control Science and Engineering, June 2015
- GPA: 3.92/4.0
- Rank: 7/132
- Final Year Project: Research on Digital Control of Power Electronics

PUBLICATIONS

Journal Papers

1. **Fei Gao**, William Wu, Wenliang Gao, Shaojie Shen, "Flying on Point Clouds: Online Trajectory Generation and Autonomous Navigation for Quadrotor in Cluttered Environments." *Journal of Field Robotics* (JFR), to appear, 2018.

2. Yi Lin*, **Fei Gao***, Tong Qin,*, Wenliang Gao*, Tianbo Liu, William Wu, Zhenfei Yang, Shaojie Shen, "Autonomous aerial navigation using monocular visualinertial fusion." *Journal of Field Robotics* (JFR), 35(1), 23-51, 2017. * equally contributed authors.

Conference Papers

1. **Fei Gao**, William Wu, Jie Pan, Boyu Zhou, Shaojie Shen, "Optimal Time Allocation for Quadrotor Trajectory Generation." *IEEE/RSJ International Conference on Intelligent Robots and Systems* (IROS), 2018.

2. Daqian Cheng*, Luqi Wang*, **Fei Gao**, Fengyu Cai, Jixin Guo, Mengxiang Lin, Shaojie Shen, "A Collaborative Aerial-Ground Robotic System for Fast Exploration." *International Symposium on Experimental Robotics* (ISER), 2018.

3. **Fei Gao**, William Wu, Yi Lin, Shaojie Shen, "Online Safe Trajectory Generation For Quadrotors Using Fast Marching Method and Bernstein Basis Polynomial." *IEEE International Conference on Robotics and Automation* (ICRA), 2018.

4. Chong Huang, **Fei Gao**, Jie Pan, Shaojie Shen, Kwang-Ting (Tim) Cheng, et al, "ACT: An Autonomous Drone Cinematography System for Action Scenes." *IEEE International Conference on Robotics and Automation* (ICRA), 2018.

5. Changsheng Shen, Yuanzhao Zhang, Zimo Li, **Fei Gao**, Shaojie Shen, "Collaborative Air-Ground Target Searching in Complex Environments." *IEEE International Symposium on Safety, Security, and Rescue Robotics* (SSRR), 2017.

6. **Fei Gao**, Yi Lin, Shaojie Shen, "Gradient-Based Online Safe Trajectory Generation for Quadrotor Flight in Complex Environments." *IEEE/RSJ International Conference on Intelligent Robots and Systems* (IROS), 2017.

7. **Fei Gao**, Shaojie Shen, "Quadrotor trajectory generation in dynamic environments using semi-definite relaxation on nonconvex QCQP." *IEEE International Conference on Robotics and Automation* (ICRA), 2017.

8. Zhenfei Yang, **Fei Gao**, Shaojie Shen, "Real-time Monocular Dense Mapping on Aerial Robots Using Visual-Inertial Fusion." *IEEE International Conference on Robotics and Automation* (ICRA), 2017.

9. **Fei Gao**, Shaojie Shen, "Online Quadrotor Trajectory Generation and Autonomous Navigation on Point Clouds." *IEEE International Symposium on Safety, Security, and Rescue Robotics* (SSRR), 2016.

AWARDS	SENG Top RPg Award 2017-18, *Top R(esearch) P(ost)-g(raduate) Award, School of Engineering, HKUST* Jun 2018

Best Conference Paper Award, *IEEE International Symposium on Safety, Security, and Rescue Robotics* (SSRR), 2016. Oct 2016

Best Dynamic Control & Best Technical Paper Award, *AUVSI Foundation's International Aerial Robotics Competition* (IARC), 2016. Sep 2016

First Prize, *AUVSI Foundation's International Aerial Robotics Competition* (IARC), 2015. Oct 2015

Student Awards — Zhejiang University
- Merit Final Yeart Project Award   2015
- Phoenix Contact Scholarship   2014
- Outstanding Student Scholarship   2012, 2013, 2014

PRESENTATIONS
- IROS 2018, Madrid, Spain   Oct 2017
- ICRA 2018, Brisbane, Australia   May 2018
- SSRR 2017, Shanghai, China   Oct 2017
- IROS 2017, Vancouver, Canada   Sep 2017
- ICRA 2017, Singapore   May 2017
- CSE Robotics Forum, Zhejiang University, Hangzhou, China   Nov 2016
- SSRR 2016, Lausanne, Switzerland   Oct 2016

TEACHING EXPERIENCE

Teaching Assistant   Fall 2016–17
    ELEC 6910P - Introduction to Aerial Robotics
    Instructor: Shaojie Shen, Ph.D.
    Department of Electronic and Computer Engineering,
    Hong Kong University of Science and Technology

Teaching Assistant   Spring 2015–16, Spring 2016–17
    ELEC 1110 - Introduction to Electro-Robot Design
    Instructor: Shaojie Shen, Ph.D. and Shenghui Song, Ph.D.
    Department of Electronic and Computer Engineering,
    Hong Kong University of Science and Technology

SKILLS

Programming:
- C, C++, Python, HTML, MATLAB, Mathematica

Language:
- Chinese (native), English (TOFEL 102)

References   Shaojie Shen Ph.D.

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