Bingbing LI Sep 10, 2017

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RESEARCH INTERESTS

Unmanned Aerial Vehicle: system modeling/real-time state estimation/classical control

(PID/LQR/MPC)/path planning.

System Simulation: visual simulation/dynamic simulation.

Machine Learning: reinforcement learning(in dynamic simulation environment).

**EDUCATION** 

Shenyang Institute of Automation (SIA), Chinese Academy of Sciences(CAS)
Shenyang, China
Sep 2014 – now

Ph.D candidate, State Key Laboratory of Robotics

• Major in Pattern Recognition and Intelligent System

• Advisor: *Prof.* Jianda Han

University of Science and Technology of China(USTC), Hefei, China Sep 2013 – Jul 2014

Visiting Student, Department of Automation, School of Information Science and Technology

Xidian University, Xi'an, China

Sep 2009 - Jul 2013

B.S., School of Electronic Engineering

• Major in Intelligence Science and Technology

RESEARCH EXPERIENCE

### Research Assistant

Nov 2016 – Aug 2017

State Key Laboratory of Robotics, Shenyang Institute of Automation (SIA)  $\,$ 

Supervisor: *Prof.* Yuqing He, Jizhong Xiao(City University of New York, CUNY) and Jianda Han

Projects: 1. Dynamic simulation system for Micro UAV platform

- 2. Precision Airdrop System for medical supply and automated battlefield casualty support
- 3. Simulation and experiments on coverage path planning.

#### Research Assistant

Sep 2014 – Oct 2016

State Key Laboratory of Robotics, Shenyang Institute of Automation (SIA)

Supervisor: Prof. Juntong Qi, Dalei Song and Jianda Han

Projects: 1. Visual simulation system design for Powerer Parafoil UAV

2. Development of equipment for earthquake emergency search and rescue.

### Research Assistant

Jun – Aug 2012

School of Electronic Engineering, Xidian University, China

Supervisor: Prof. Xin Yu and Licheng Jiao

Projects: Flight path planning research based on A star method.

Preprints

(\* means corresponding author and *Prof.* Jianda Han is my doctoral supervisor.)

1. Bingbing Li, Liying Yang, Yuqing He\*, Jianda Han, Jizhong Xiao., "A New Modeling Scheme for Powered Parafoil Unmanned Aerial Vehicle Platforms: Theory and Experiments," submitted to AIAA Journal of Guidance, Control and Dynamic. (GCD, SCI)

#### **PUBLICATIONS**

- 1. <u>Bingbing Li</u>, Liying Yang, Yuqing He, Jianda Han and Jizhong Xiao, "System Identification and Control of PPUAV," *IEEE International Conference on Cyber Technology in Automation, Control and Intelligent Systems* (CYBER), 2017.
- 2. <u>Bingbing Li</u>, Juntong Qi, Tianyu Li, Sen Mei, Dalei Song and Jianda Han, "Energy-based controller decoupling of Powered Parafoil Unmanned Aerial Vehicle," *IEEE International Conference on Cyber Technology in Automation, Control and Intelligent Systems* (CYBER), 2016.
- 3. Bingbing Li, Juntong Qi, Tianyu Li, Sen Mei, Dalei Song and Jianda Han, "Real-Time Data Acquisition and Model Identification for Powered Parafoil UAV," International Conference on Intelligent Robotics and Applications (ICIRA), 2015.
- 4. <u>Bingbing Li</u>, Fan Liu, Juntong Qi, Sen Mei, Tianyu Lin and Jianda Han, "Transfer Functions Model Identification and Flight Test for Powered Parafoil UAV," *Chinese Control Conference* (CCC), 2015.

#### Competitions

- 4<sup>th</sup> International UAV Innovation Grand Prix Anji, Zhejiang, China Oct 19 23 2016
   Hosted by Aviation Industry Corporation of China(AVIC)
   Bingbing Li(Team Leader)
   , Xiangdong Meng, Zhong Liu, Bo Dai, Bin Xiao, Lilong Huang

   First Prize(First Place) among 12 teams in Rotary-wing UAV groups.
- 2. 3<sup>th</sup> International UAV Innovation Grand Prix Anji, Zhejiang, China Oct 27 31 2015 Hosted by Aviation Industry Corporation of China(AVIC)

  Jun Jiang(Team Leader), <u>Bingbing Li</u>, Yu Zhou, Xiangdong Meng and Xiaoguang Zhao

Second Prize(Third Place) among 12 teams in Rotary-wing UAV groups.

# Honors and Awards

| • Second Prize Scholarship of Xidian University,               | 2011, 2012 |
|--|------------|
| • Advanced Individual of Social Work,                          | 2011       |
| • First Prize Scholarship of Xidian University,                | 2010       |
| • National Scholarship (Ministry of Education, China, Top 2%), | 2010       |
| • Advanced Individual of Civilized Dormitory Contribution,     | 2010       |
| • Excellent Student in Xidian University (Top 5%),             | 2009, 2010 |

## Professional Activities

## Conference Reviewer

- IEEE International Conference on Cyber Technology in Automation, Control, and Intelligent Systems (CYBER), Hawaii, USA

  Jul 2017
- IEEE IEEE International Workshop on Advanced Robotics and its Social Impacts (ARSO), Shanghai, China Jul 2016
- IEEE International Conference on Robotics and Automation (ICRA), Stockholm, Sweden. May 2016
- IEEE International Conference on Cyber Technology in Automation, Control, and Intelligent Systems (CYBER), Shenyang, China

  Jun 2015

Oral Presentations or Posters at Conferences

- IEEE International Conference on Cyber Technology in Automation, Control, and Intelligent Systems (CYBER), Chengdu, China

  Jun 2016
- Chinese Control Conference (CCC), Hangzhou, China Jul 2015

Teaching

**Teaching Assistant** Teaching Assistant, Autonomous Control of UAV, Shenyang Institute of Automation Fall 2014, 2015

SKILLS

- Programming: Matlab, C/C++, Python, Linux, LATEX, Visual Studio Code, Eclipse, Sublime
- UAV control and simulation tools: Pixhawk, ROS, MAVROS, Gazebo, VREP, Flightgear.
- Machine learning tools(in study): Gym(OpenAI), Universe(OpenAI), TensorFlow.