Yaoxian SONG

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OVERVIEW

I am a joint PhD student at Fudan University and Westlake University currently studying towards my doctor's degree in Computer Science and Technology. My master research focused on unmanned aerial vehicle (UAV) navigation and formation control. I am very interested in mobile robotic visual perception considering my master's robotic research experience. I am highly self-motivated with a thorough approach to my work. I enjoy working in a team environment. At the same time, I am also capable of using initiative to work independently. I am a quick learner with strong attention to detail.

EDUCATION

Fudan University **Shanghai, China** **2017.9—now**
Westlake University **Zhejiang，China** **2017.9—now**
Ph.D. student，Computer Science and Technology GPA 3.514/4
Technical University of Munich **Munich, Germany** **2019.05—2019.06**
Research at Chair of Information-Oriented Control (ITR)
Hangzhou Dianzi University **Zhejiang, China** **2014.09—2017.04**
Master of Science, major in Control Science and Engineering GPA 86.86/100（top 4）
The Australian National University **Canberra, Australia** **2016.06—2016.09**
Visiting research master student, Networked Systems group, Research School of Engineering
Nantong University **Jiangsu, China** **2010.09—2014.06**
Bachelor of Science, major in Electrical Engineering and Its Intellectualization for Building, GPA 84.55/100

RESEARCH PROJECTS

- **Robotic grasping in unstructured environment**
  Fudan University & Westlake University Current topic
  - Multimodal fusion algorithm research for robotic perception.
  - Learning-based robotic grasping policy generation research.
  - Uncertainty-based robotic control strategy.

- **Multi mobile manipulation control**
  Westlake University & Technical University of Munich Current topic
  - Mobile robotic arm control.
  - Multi mobile platform setup.
  - Multi mobile arm cooperation.

- **Time-Varying Formation Control for Unmanned Aerial Vehicles**
  Hangzhou Dianzi University **Master's thesis 2017.04**
- Designed a formation control protocol based on multi-agent system.
- Took charge of simulation using MATLAB and Irrlicht.
- Took charge of experiments conditioned on three *Crazyflies* platforms, cooperating ROS (Robot Operating System) and motion capture system.

- **Line Tracking Quad-rotor based on infrared camera**
  Team Leader 2015.08—2016.04
  Hangzhou Dianzi University, Northwestern Polytechnical University
- Designed an intelligent UAV flight controller and realized visual line tracking using OpenCV
- Took charge of hardware and software development

- **Heat Resistant Quad-rotor (Project funded by Shandong Computer Science Center)**
  Team Member 2014.05—2014.09
  Shandong Computer Science Center
- Took charge of product development and test.

- **Micro-medicine infusion pump (funded by Student Research Training Program)**
  Team Leader 2013.09—2014.05
  Nantong University
- Took charge of designing motor control algorithm
- Took charge of the development of the human-machine interface

- **Laser based high-speed tracing intelligent car (7th Freescale Intelligence Car Competition)**
  Team Leader 2012.03—2012.08
  Nantong University
- Took charge of software development, including sensor data processing and programming of control algorithm

SKILLS

Programming Language: C, C++, Python, Matlab
Language: Chinese, English
Framework: ROS, Tensorflow, Keras, Pybullet

INTERNSHIP

- **ZEROTECH Corporation, Beijing, China**
  2016.03—2016.05
- Worked on digital video stabilization and rolling shutter correction algorithms

- **Shandong Computer Science Center, Jinan, China**
  2014.05—2014.09
- Hardware development for UAV

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- Design of data visualization module

HONORS&AWARDS

2015.08 The 1st China Graduate Future Flight Vehicle Innovation Competition, Nation Final, Second Prize (Top 16 of China)
2012.07 The 7th "Freescale Cup" Smart Car Competition of China, Eastern China, Second Prize (Top 14 of eastern China)
2012.05 The 5th Caring for China - the Google China Social Innovation Cup national finalist teams (Team leader)
2016.10 The 8th College Students career planning and entrepreneurship competition in Zhejiang Province, Third Prize

2017.04 Outstanding Graduate Student in Hangzhou Dianzi University
2016.10 **National Scholarship for Graduate Student**
2015.11 Nokia Academic Scholarship
2016.10 Hangzhou Dianzi University Second Academic Scholarship
2015.10 Hangzhou Dianzi University First Academic Scholarship
2014.10 Hangzhou Dianzi University Freshman Scholarship
2013.11 Nantong University Second Academic Scholarship
2012.10 Nantong University Advanced individual subject competitions

PUBLICATION

Y. Song, Y. Fei, C. Chen, X. Li, C. Yu, "UG-Net for Robotic Grasping using Only Depth image" to appear at the IEEE International Conference on Real-time Computing and Robotics 2019(RCAR2019)

C. Cheng, Y. Song, C. Yu, "Group Pressure Leads to Consensus of Hegselmann-Krause Opinion Dynamics" The 38th Chinese Control Conference (CCC2019).

K. Yan, S. Huang, Y. Song et al. "Face recognition based on convolution neural network" The 36th Chinese Control Conference (CCC2017).

F. Yu, G. Chen, N. Fan, Y. Song, L. Zhu "Autonomous flight control law for an indoor UAV quadrotor" The 29th Chinese Control and Decision Conference (CCDC2017).

N. Fan, N. Huang, F. Yu, Y. Song et al. "An improved target tracking scheme via integrating mean-shift with TLD algorithm" The 29th Chinese Control and Decision Conference (CCDC2017).

Y. Song, Y. Wang et al. "An intelligent visual line tracking system via quadrotor platform" The 28th Chinese Control and Decision Conference (CCDC2016).

G. Li, Y Wang, H Yang, F. Yu, N. Fan, Y. Song, "Second-order consensus of multi-agent systems with time delay and heterogeneous topologies" To appear at the 35th Chinese Control Conference (CCC2016).

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