

Fenglong Song

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EDUCATION

School of Mechanical Engineering, Shanghai Jiao Tong University

Sept. 2016 - Present

Major in Mechanical Engineering (International Pilot Class)

Ranking: 3/57(major) 3/57(program) GPA: 88.32/100 (3.77/4.3)

Zhiyuan College, Shanghai Jiao Tong University

Sept. 2016 - Present

Zhiyuan Honors Program of Engineering

School of Electronics, Information and Electrical Engineering, Shanghai Jiao Tong University

Mar.2018 - Present

Double Major in Computer Science

HONORS & AWARDS

The NSK Award of International Design Contest ROBOCON	<i>Aug. 2018</i>
Honorable Mention, Mathematical & Interdisciplinary Contest in Modeling	<i>May. 2018</i>
Li Tianhe Scholarship (First Class)	<i>Sept. 2017</i>
Zhiyuan Honors Scholarship (3 times)	<i>Dec. 2016, 2017, 2018</i>
Huawei Scholarship	<i>Sept. 2018</i>
Second Class, Chinese Undergraduate Mathematical Contest in Modeling	<i>Oct. 2018</i>
First Class, Shanghai Undergraduate Students Mechanics Competition	<i>Jun. 2018</i>
Outstanding Student Cadres of Shanghai Jiao Tong University	<i>Oct. 2017</i>

PUBLICATIONS

PATENTS

Yaou. Zhang, Xiaoshen. Yan, **Fenglong. Song**, Wansheng. Zhao, patent pending 2018, "A new structure of wheeled 3D-moveable supporting fixture tooling", CN201811338598.X (Under review)

RESEARCH EXPERIENCE

Participant, Mobile Autonomous Antenna Tracker

Feb. 2016 - Feb. 2017

School of Aeronautics and Astronautics, SJTU, China

*Shanghai Undergraduate Students Innovation Project (**Outstanding Project**)*

Description: Mobile Auto Antenna Tracker is designed to enlarge the flying range of the model plane or unmanned aircraft. It also brings about the convenience for the following service for the unmanned-aircraft by coupling antenna tracker with the moving car or mobile platform. The progress is made by obtaining the GPS information of both the plane and the ground tracker.

- Design and test the mechanism of rotational platform.
- Responsible for the communication between the UAV and ground station based on Mavlink protocol.
- Design algorithms to control the motion of rotational platform.

Research Assistant, A Micron-accuracy Positioning Method for Aero Engine Turbine Blades

May. 2018 - Present

State Key Laboratory of Mechanical System and Vibration, SJTU, China

Institute of Manufacturing Technology and Equipment Automation

Advisor: Prof. Wansheng Zhao

Description: The process of air film holes of aircraft engine turbine blade has a high rejection rate due to the error in the position and posture of workpiece. In this research, we acquire point cloud data using laser displacement sensor, then use matching algorithm to calculate the position and posture of the blade, and finally make adjustments accordingly during the processing. We have finished the primary test in a factory in Guizhou Province and obtained satisfactory results.

- Proposed a calibration method for micrometer laser displacement sensors. Built a mathematical model to calculate the installation posture of laser displacement sensor to meet the requirement of micron precision.
- Participated in the research of surface feature points extraction algorithms for 3D wing-shaped objects.
- Develop a point cloud registration algorithm base on Iterative Closet Point algorithm. Accelerate the computation using k-dimensional tree.

Participant, [International Design Contest ROBOCON 2018](#)

Aug. 6th - Aug. 18th 2018

Tokyo Institute of Technology, Tokyo, Japan

Advisor: Asso. Prof. Masaki Yamakita

Description: IDC ROBOCON (International Design Contest) is one of the three major competitions of NHK Robocon in Japan. It was the communication between Tokyo University of Technology and MIT mechanical creative design course in the United States at the earliest in 1990, and later extended to several top engineering colleges in the world. IDC focuses on the communication between students from different countries and has a high requirement on the ability to design and manufacture in mechanical, circuit, software, etc.

- Captain of team RED.
- Figure out the strategy for the competition.
- Design and manufacture the *Sky robot* to grasp balls and put it into a nest on the ramp.
- Participated in the design and manufacture of control system of robots.

LEADERSHIP

Monitor of Class Eight, School of Mechanical Engineering.

Aug. 2016 - Sept. 2017

Minister of department of innovation, Students' Innovation Center.

Nov. 2017 - Nov. 2018

Minister of Center of Intercultural Communication, Students' Union.

Oct. 2017 - Oct. 2018

SKILLS

Programing: C++, MATLAB, Python (numpy, scipy), LabView

Software: Solidworks, UG, Simulink