MENGWEI ZHANG

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EDUCATION

University of Pennsylvania *August 2018 - Present*
Master's Degree in Robotics Present GPA: 3.93
Xi'an Jiaotong University *September 2014 - July 2018*
BEng in Mechanical Engineering Overall GPA: 3.94, Ranking: 1/234

HONORS & AWARDS

2017   **National Scholarships of China,** Proportion: 230/3000

2017   **Pacemaker to Excellent Students of Xian Jiaotong University,** Proportion: 0.06%

2015 - 2016 **Outstanding Student of Xian Jiaotong University**

2015 - 2016 **Fast Auto Drive Special Level Scholarship,** Proportion: 1/234

2015 - 2016 **Schneider Electric SA First Prize Scholarship**

2014 - 2015 **Chinese National Endeavor Scholarship**

RESEARCH EXPERIENCE

2020 **Lawn Management Robot Based on Deep Learning and Reinforcement Learning**

- Researched on robot navigation using reinforcement learning method, object(trash) detection using single-shot detector(SSD), semantic segmentation using Mask-RCNN, object gripping based on reinforcement learning and robotic arm control under ROS and MoveIt.

2019 **Quori Research on Face Tracking, Emotion Detection and Rendering in GRASP**

- Researched on the application of computer vision and deep learning. Based on OpenCV, I finished the algorithm of human face tracking based on KCF filter, emotion detection by TensorFlow.

- Completed the algorithm of spcacial transformation from 2D image plane to 3D shperical screen and the code of rendering different images according to the location and emotion of the person using OpenGL.

2018 **Brain-Computer Interface(BCI) Technology in Patient Rehabilitation Application**

- Researched on the working principle of the brain and collecting and processing EEG signals. It would help the disabled or the patient complete the rehabilitation process with mechanical aids.

- Set up the experimental platform and carried out experiments with 20 suitable volunteers.

- Established Asynchronous Hybrid Brain-Computer Interface Based on SSVEP and SSAEP. Optimized the algorithm of feature extraction using FFT and CCA. Wrote an application to control the mouse cursor through the EEG signal.

2017 **Fault Diagnosis and Detection of Mechanical Rotor with Elastic Support**

- Analyzed mechanical fault and noise signals using MATLAB and found the relationship between the supporting type and lag angle.

- Proposed a field balancing method of the flexibly supported rotor according to vertical vibration of bearing seat.

WORK EXPERIENCE & ACTIVITIES

2019	Worked as Teaching Assistant under EE departpent and MEAM department in Upenn
2019	Worked as Research Assistant in Modlab in Upenn

COMPETITION ACHIEVEMENTS

2017 **The 10th National College Student Social Practice and Technological Energy Saving Competition in China**

- Studied on a new phase-change heat storage unit based on the ultrasonic strengthening method of new particles in porous media which no one studied, and applied the product into practical engineering applications like aerospace.
- Won the National First Prize (Proportion: 1.87%)

2017 **Interdisciplinary Contest in Modeling (ICM)**

- Optimized the airport security process and reduced the queue length based on Two- stage Multi-server tandem queuing model and won the Meritorious (Proportion: 15%)

2017 **National College Student Mechanical Products Digital Design Competition in China**

- Designed an autonomous robot with functions of tableware collection, table cleaning, leftovers removal, tableware classification.
- Won the First Prize(Proportion: 2.5%)

2016 **Internet Plus Business Competition**

- Made a set of plans to run a company with 10 staffs, 400 thousand registered capital, and 150 thousand Venture capital, to sell the product Restaurant Sweeper.
- Won the Bronze Prize.

EXTRA-CIRRUCULAR

2016	Worked as a volunteer for Centenary Celebration of Xian Jiaotong University
2015	Served as the minister of Mathematical Modeling Club
2015	Participated in Xi'an Jiaotong University Robot Team
2014	Participated in Warm School Workers volunteer activities with 90 hours
2014	Worked in Student Union and Student Council of Xian Jiaotong University
2014	Served as class monitor of Applied Physics Class

COMPUTER SKILLS

• GNU/Linux	• C / C++	• Python	• Deep Learning
• Pytorch/TensorFlow	• MATLAB	• Computer Vision	• Computer Graphics