FUJUN RUAN

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EDUCATION

Virginia Tech, Blacksburg, VA
Bachelor of Science, Mechanical Engineering (GPA: 3.61/4.0) — Sep 2017 – May 2021

Carnegie Mellon University, Pittsburgh, PA
Master of Science, Mechanical Engineering (GPA:4.0/4.0) — Aug 2021 – Present

RESEARCH EXPERIENCE

Biorobotics Lab-The Robotics Institute – Pittsburgh, PA — Jan. 2021 – Present
Graduate Research Assistant for Robot design-Boeing Additive Manufacturing/ rWAAM

- Developed a fixed multi-arm platform with additive and inspection end effector to apply in the hybrid manufacturing process.
- Built a "3D copier" system based on the fixed multi-arm platform.
- Working on simulate a multi-robot arms system with path coverage planning with constraints to apply on the fly Inkjet Painting process.
- Design the sensing system in the Lincoln Electric arc metal 3D printer for closed-loop control
- Assembled modular robots and designed new modular robot sensing foots.
- Build the calibration tool system for a custom-developed 3D scanner.

Research Team Sponsored by E – Wave Technologies LLC, Partnered with Virginia Tech and InnovaSea – Blacksburg, VA
Engineer for Self-Reactive Marine Energy Converter to Power Ocean Aquaculture — Dec. 2019 – May. 2020

- Design the electricity generating system with ocean wave energy to power the intelligent fish farm
- Design the Power Take-Off System for the fish farm and Built the Power Take-Off System scale down version for prototype

Research Team Sponsored by the Field and Space Experimental Robotics Laboratory – Blacksburg, VA — Aug. 2020 – May.2020
Engineer for the In-Space Robotic Assembly Infrastructure Development

- Designed the Stewart Platform — the parallel robots capable of high-precision manipulation
- Build a closed-loop control system for position calibration using vision sensors

Hybrid Dynamic Systems and Robot Locomotion Lab – Blacksburg, VA — Jan. 2019 – Apr.2020
Engineer for Balto and Togo, Four-Legged Robot Locomotion Project

- Added swerve drive modules at the joints of the Legged robot to improve the mobility of the robot
- Design the experimental environment and assist in completing the robot test

WORK EXPERIENCE

Makeblock – Shenzhen, China
Advisor & Competition R&D intern& Operational intern — Jun. 2018– Aug. 2019

- The solution helped to increase the business scale by 35 times in two years (the third in the world in business), the company's largest revenue growth point, with an annual sale of 50 million.
- Design competition topic base on students' level and needs, and design the robots to verify the topic
- Speaking as an advisor about American robot competitions, such as: team management, community building, competition management

"ThinkRed" Media Studio – Guangzhou, China — Dec. 2017 – Present
Founder

- Build the only 3D modeling sharing website based on the FRC robot competition in China; self-made 3D modeling courses for Chinese high school students
- Promote the FRC competition on text and video form to help Chinese teams improve their own strength
- Self-made and republic more than 500 technical teaching videos for teams, the total number of views has exceeded 250,000

PUBLICATION

A self-reactive ocean wave energy converter with winch-based power take-off: design, prototype, and experimental evaluation -IDETC 2022

SKILLS

Proficient in Solidwork, MS Excel, Autodesk Inventor, MATLAB, Siemens NX, ANSYS, Adobe software, C++, Onshape
Bilingual – Fluent in English and Mandarin