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Kaiyu Shi

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EDUATION

JOHNS HOPKINS UNIVERSITY, Baltimore: **M.S.E in Robotics** Expected Graduation: **May 2021**

UNIVERSITY OF WASHINGTON, Seattle: **B.S. in Mechanical Engineering** (Mechatronics).
Graduated: June 2019 | Cumulative GPA: 3.73
Honorable Mention: Institute for Stem Cell & Regenerative Medicine Undergraduate Summer Fellowship.
Nominated: Best research and capstone project for Mechanical Engineering department graduation.

RELEVANT COURSEWORK: Robot Systems Programming, Robot Algorithms, System Dynamics, Robot Kinematics, Computer Vision, Machine Learning, Embedded Computing, Engineering Statistics, Control Systems, Vibrations, Artificial Intelligence, Computer Integrated Surgery, Machine Design Analysis

RESEARCH & EXPERIENCES

RESEARCH PROJECT: Human-AI Partnership in Robotic Surgery July – Present 2020
Developing novel and impactful methods for surgeon/AI interaction during robot-assisted surgery, using a human-centered approach. Utilizing DaVinci simulator and python API to quickly prototype solutions.

RESEARCH ASSISTANT: UW Cell Biomechanics Lab March 2018 – July 2019
Researched Engineered Heart Tissue maturity with dynamically applied stress. **Independently developed** and **manufactured** rig to mimic heart tissue contraction and to apply magnetic forces for characterization of sensors. Designed miniaturized heart cell test holder to support NIH (CASIS) sponsored experiment to the International Space Station.

CAPSTONE: Microsoft Robotic Eyes Project January – June 2019
Developed and implemented a software calibration solution for eye tracking testing rig. Solution demonstrated confidence in fidelity and accuracy. Project passed on for further development.

DYNAMIC SIMULATION PROJECT: PACCAR Twin-Steering Truck January – March 2019
Analyzed and simulated the dynamic response of a twin-steering truck CAD model. Results used by PACCAR R&D for product development of next generation truck.

RESEARCH ASSISTANT: UW Ultra-Precision Controls Lab March – August 2019
Created a Unity-based **simulation** of swarm flocking simulation. Visualized in virtual reality distance between two car models on a track, for purpose of comparing human response with automated control systems.

EMPLOYMENT

MAKERSPACE: McCarty Innovation Learning Labs & Area 01, Seattle Sep 2016 – June 2019
Worked in a makerspace with wide variety of equipment, including machine shop tools. Learned and applied new skills by **teaching** project-based and instructional workshops. Acted as a resource of technical expertise.

RELEVANT SKILLS

Programming: Git, Data Structures, C/C++, Python, ROS/Gazebo | **Software**: MATLAB, LabVIEW, SolidWorks
Prototyping: FDM, Laser-cutting, Mill & Lathe, Soldering, Sewing | **Languages**: English (native), Chinese (fluent)

LEADERSHIP

DONOR RELATIONS LEAD & TREASURER: 2015 – 2019
Served on student team that designs and builds mock mars rovers. Four years of experience on the team tackling complex and **long-term challenges** while collaborating with people of different backgrounds and proficiency. Designed the main structure and actuation design of the 2018-2020 rover's robotic arm.

FOUNDER & TEAM CAPTAIN: 2012 – 2015
Founded high school robotics team in 2012, Team Captain from 2013-2015. Led team to win Competition Champion and Innovation awards at a 24-team regional championship.