BREVIN BANKS

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ENGINEERING EXPERIENCE

R&D Engineering Intern at Stryker Sports Medicine – Provo, UT **Jan/2022 to Aug/2022**

- Designed an automated laparoscopic tool insertion and activation device for AI assisted surgical testing
- Tested, trained, and debugged surgical computer vision AI models used for shoulder and hip surgeries
- Modeled and manufactured hardware and mechatronics for testing apparatus and created professional drawings

R&D Engineering Intern at Becton Dickinson Medical – Sandy, UT **Mar/2021 to Dec/2021**

- Performed an engineering DOE to determine the effects of saline soak on catheter adapter strength
- Verified the Accucath safety override subsystem with a 1st principles model and tolerance stack analysis
- Designed and validated test protocols and Instron test methods for the Accucath safety override subsystem

BYU 2FT Prosthetics Research Director – Provo, UT **Jul/2018 to Dec/2021**

- Created an amputee prosthetic foot comparison study funded by a grant independently as a freshman
- Networked 3 prosthetics and orthotics clinics to donate free parts and prosthetist service to the study
- First Author Publication: "Low-cost prosthetic feet for underserved populations"

Research Assistant for BYU Applied Biomechanics Laboratories – Provo, UT **Jul/2019 to Aug/2021**

- Reconstructed complex spinal testing machinery and apparatus using manual machine prototyping
- Integrated IMU measurement techniques using LabVIEW and C++ increasing the speed and accuracy of testing
- Developed and presented on vertebral geometry measurement techniques at the UCUR Research Conference, 2020

EDUCATION

Johns Hopkins University – Baltimore, MD **Aug/2022 to May/2024**

MS Robotics *Emphasis:* Medical Robotics

LCSR LAB: Designed admittance controllers for Micro precision hand over hand surgical robots

Brigham Young University – Provo, UT **Jan/2018 to Apr/2022**

BS Mechanical Engineering

3.86 GPA

TECHNICAL SKILLS

- C++, Python, MATLAB, and LabVIEW Fluency
- ROS, Control Systems, and Robotics Algorithms
- Statistics, Minitab, DOEs, and Regression Models
- SolidWorks and Fusion 360 Certified
- Mechatronic Design
- Computer vision with OpenCV

SERVICE AND LEADERSHIP EXPERIENCE

Studied Engineering and Leadership Overseas in China – Guangzhou, China **May/2019 to July/2019**

Served in the Intermountain Healthcare Hospital ICU – Provo, Utah **March/2018 to Aug/2018**

Member of Tau Beta Pi