

Brevin Banks

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ENGINEERING EXPERIENCE

R&D Engineer at Laborie Medical Technologies: OB and UR— Provo, UT **Apr/2024 to Current Day**

- Spearheaded new development of Bluetooth IUPC cable; Technical lead in hardware, firmware, & software
- Managed remediation and PLM for Koala Cable Devices to complete IEC-60601-1 and obtain CB Certification
- Designed and programmed computer vision and automation equipment for product Lifetime testing
- Drafted product Requirements Trace Matrices and FMEAs and Performed Risk Management Reviews
- Planned and executed for design phase 0-2 deliverables under ISO 13485 for a new Urology Disposable in 1 year
- Involved in all design control phases and cross functional activities- most notably:
Bench top prototyping, DFM, Gama Sterilization, Ship Conditioning, Biocompatibility, Design Verification, Design Validation, Usability, Cleaning Validation, User Needs Assessment, Reimbursement, and Design Reviews

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 surgery with mm accuracy
- Tested, trained, and debugged surgical computer vision models used for shoulder and hip surgeries on 50+ datasets
- Developed a python computer vision threading application with a GUI for a robot operated mock surgery-removing the need for human interaction during testing

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
- Designed and validated test protocols and Instron test methods for the Accucath safety override subsystem

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

EDUCATION

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

MS Computer Science - Robotics *Emphasis:* Medical Robotics

LCSR: Admittance Switching for Stability and Transparency in Human-Robot Collaborative Microsurgery

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

BS Mechanical Engineering, Magna Cum Laude

TECHNICAL SKILLS

- Medical Device Design Controls & Product Design
- Statistics, Minitab, DOEs, & Regression Models
- FMEA & Risk Management including familiarity with the following industry standards:
IEC 60601-1, ISO 13495, ISO 14971
- C/C++, Python, MATLAB, LabVIEW
- CAD, SolidWorks (CSWP), Fusion
- Mechatronics, Hardware, Automation Design
- Computer Vision, Machine Learning, AI
- ROS, Control Systems, Human-Robot Interaction

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

Completed Fundamentals of Engineering