

Jacob Frankenstein

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SUMMARY

Motivated Biomedical Engineering student with a strong foundation in biology, engineering principles, and medical device design. Experienced in laboratory research, CAD modeling, and data analysis through academic projects and internships.

EDUCATION

LeTourneau University- Longview, TX

- B.S. Engineering, Biomedical Concentration (Expected Graduation: May 2019)
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- Dual Minor: Applied Sciences, Mathematics

ENGINEERING EXPERIENCE

Development Engineering Co-op K2M Inc., Leesburg, Va (05/2018-07/2018)

- Communicated with surgeons and sales representatives to gather design inputs and user needs
- Utilized Solidworks to design, develop, and manufacture instruments
- Reduced reworking and increased lead times by creating a searchable database with an intuitive user interface that contained over 3000 instruments
- Developed test protocols, test reports, trace matrices, design history files, and engineering change notices
- Performed mechanical/cadaveric testing in order to verify product design

Manufacturing Engineering Co-op K2M Inc., Leesburg, Va (01/2018-05/2018)

- Developed and tested solutions to meet FDA UDI (unique device identification) requirements
- Streamlined the laser marking process by developing a database containing over 100 laser marking templates
- Developed a validation plan for additively manufactured 17-4 stainless steel for prototyping instruments
- Operated wire EDM, laser marking machines, and post processing equipment
- Performed preventative maintenance on CNC mills, lathes, wire EDM, and laser marking machines.

Biomedical Equipment Technician Intern Longview Regional Hospital, Longview, Tx (09/2016-12/16)

- Performed PM's (Preventative Maintenance) on a variety of medical devices including IV Pumps, Panda IRES Infant Warmers, and Medical Beds
 - Repaired Stryker medical bed motors, control units, and air bladders as well as calibrated IV Pumps
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ENGINEERING PROJECTS

Course – Senior Design (Fall 2018)

- Sub-team lead for the development of non-invasive hemoglobin measurement device
- Developed the first prototype utilizing MATLAB and Arduino to successfully acquire two PPG (Photoplethysmography) signals using infrared and red light
- Presented results in technical report and presentation to external reviewers

Course - Biomedical Engineering Research (Fall 2018)

- Developed keen understanding of the Vicon Motion Capture System
- Utilized the Vicon Motion Capture system in concert with multiple force plates to test if knee and ankle bracing would affect the external knee adduction moment on the contralateral leg.
- Collected, processed and visualized data using MATLAB and presented results in technical reports

Course - Project Management Design and Entrepreneurship (Fall 2017)

- Selected to lead a five-person team for the design and development of an electronic device for the visually impaired - an electronic cane that utilizes infrared and ultrasonic sensors to detect obstacles, walls and stairs
- Created and successfully maintained project schedules, oversaw budget and expense reports

SKILLS

Test Equipment: Oscilloscopes, function generators, force plates, motion capture systems, circuit analysis equipment

Computer Skills: SolidWorks (CSWA), LabVIEW, MATLAB, Maple, Minitab, Access, and Microsoft Office Suite

Manufacturing: Lathe, Wire EDM, CNC machining, welding, and 3D printing