ZACHARY WOLF

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EDUCATION

Stony Brook University | Stony Brook, NY

- Master of Science in Biomedical Engineering (expected graduation May 2023)
- Bachelor of Engineering in Biomedical Engineering (graduated May 2022), GPA: 3.93
- *Relevant Coursework*: Advanced Numerical and Computation Analysis, Contemporary Biotechnology, Biomaterials, Computational Biomechanics, Biofluid Mechanics, Engineering Principles in Cell Biology, Bioinstrumentation, Mathematical Methods in Engineering, Biosystems Analysis, Magnetic Resonance

SKILLS

- Proficient in MATLAB, Julia and LabVIEW programming
- Frequent use of Microsoft Word, PowerPoint, and Excel

RELEVANT EXPERIENCE

Precipart **Farmingdale, NY**

Business Development Intern *June 2022- Present*

- Communicate with customers and suppliers to determine solutions for manufacturing precision, custom mechanical components for various applications within the medical device industry
- Collaborate with project management team to relay important technical information to customers
- Create and manage business opportunities in company customer relationship management (CRM) software
- Working on project to increase CRM software user efficiency to improve management of product quotation processes in Business Development department
- Identify potential customers in growing markets to develop strategies to promote future business growth

Stony Brook University **Stony Brook, NY**

Longitudinal Biodesign Internship *September 2020- July 2021*

- Learned about clinical needs finding process from University Hospital doctors and participated in a team-based prototyping project with fellow engineering students to understand how ideas become commercial products
- Participated in 3 clinical rotations of 3 hours in the University Hospital ER and OR with doctors, nurses, and other hospital staff to identify relevant clinical needs that could be addressed by engineering solutions
- Presented a one-year prototyping plan and market analysis of a shoulder reduction simulation device to industry, clinical, and engineering mentors and received approval to work on device development as part of a senior design project

PROJECTS

Fluid Structure Interaction (FSI) Research Applied to Patient-Specific Coronary Arteries and Aortas

Dr. Wei Yin, Biomedical Engineering Department at Stony Brook University *June 2021- Present*

- Segmented 3 atherosclerotic plaque-containing coronary artery geometries from patient-specific computed tomography angiography data using 3D slicer software to create 3D STL models
- Assisted with the editing and successful preparation of 9 healthy coronary artery meshes for implementation in FSI software (COMSOL Multiphysics) using Autodesk Meshmixer and Netfabb software
- Performed a literature search to summarize progress in computational modeling of arterial hemodynamics
- Prepare and compute FSI models of patient-specific aorta geometries to investigate links between biomechanical parameters such as arterial wall stress and ascending thoracic aortic aneurysm development and progression

Shoulder Reduction Simulator Prototype

Senior Design Project in Biomedical Engineering *August 2021- May 2022*

- Brainstormed ideas with 4 other engineering students to create a device/mannequin capable of simulating an anterior shoulder reduction procedure
- Functioned as team leader by delegating specific tasks to members, coordinating team meetings, communicating with advisors, and identifying the major technical requirements for successful shoulder reduction simulator design
- Used an iterative process to craft a working prototype with a 3D printed shoulder joint, a 3D printed torso to house internals, and an adjustable tension device to simulate muscle spasm