Rachel Brockman

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EDUCATION

University of Southern California, Los Angeles, CA
M.S. Mechanical Engineering **GPA:** 4.00 Expected May 2024
B.S. Biomedical Engineering (Mechanical Emphasis), Computer Programming Minor **GPA**: 3.86

Relevant Coursework: Mechatronics, Advanced Mechanical Design, Design for Manufacturability and Assembly
Honors/Awards: Advancing Women in Technology Scholarship, USC Ahrens Family Scholarship, Dean's List

SKILLS

SolidWorks (CSWA Certified), CETOL, C++, Python, Arduino, Java, Javascript, LabVIEW, MATLAB, Swift, Minitab, Discrete Event Simulation (Simul8), HTML/CSS, Photoshop, Microsoft Suite, Conversational Spanish

EXPERIENCE

Medtronic, Northridge, CA
Mechanical Design Engineer I August 2022-Present

- Leading technical effort to develop rework methods for $16 million of defective pump inventory
- Informing mechanical drawing updates through tolerance analysis and testing of insulin pump components using CETOL and Excel-based analyses
- Designing and manufacturing test fixtures to support development of next-generation pumps in SolidWorks
- Engineering novel insulin delivery system via internal crowdsourced innovation initiative after successfully pitching and securing project development approval from Senior VP of Product Innovation
- Prototyping design changes of continuous glucose monitor patch liner to reduce patient complaints and improve usability of product

Mechanical Engineering Intern June-August 2021

- Designed charger and latching mechanism in SolidWorks for next generation insulin pump programs to improve usability of products, resulting in filing of two patent applications
- Developed Python code for sensing and tactile feedback improvements for next generation pumps
- Collaborated with Human Factors, UX, Marketing, and Manufacturing teams to ensure design outcomes and features addressed user needs and reduced patient burden prior to production of physical prototypes

ENGINEERING PROJECTS

MEDesign Speculum Redesign August 2019 - May 2022

- Led team of three undergraduate students in development of novel vaginal speculum for obese patients
- Moderated team discussions with 20+ physicians and industry professionals to inform design of device
- Created prototype in SolidWorks based on physician input and team research
- Competed in USC Viterbi Maseeh Entrepreneurship Prize Competition Finals and pitched product to panel of investors and senior engineering faculty

Next Level Grip (USC BME Senior Design Project) August - December 2021

- Spearheaded product development process, encompassing needs finding, requirement definition, functional decomposition, concept screening, and software state diagramming and wireframing
- Utilized SolidWorks and LabVIEW to develop a device to aid stroke survivors recover grip strength in both flexion and extension
- Led manufacturing efforts of device, including 3D printing, CNC milling, and assembly

LEADERSHIP

USC Associated Students of Biomedical Engineering (ASBME) Executive Board May 2019-May 2022
Mentorship Chair ('19-'20), Secretary ('20-'21), Corporate Chair ('21-'22)

- Organized corporate development workshops and networking events for members of organization, including annual corporate dinner event with 17 industry representatives
- Developed corporate sponsorship solicitation packet and facilitating relationship between ASBME and corporate sponsors to form a mutually beneficial relationship resulting in $2000 in sponsorship
- Planned general meetings and events for 100+ Biomedical Engineering students

USC MEDesign Medical Device Design Team Executive Board May 2019-May 2022
Funding Chair ('19-'20), Corporate Chair ('20-'21), Vice President ('21-'22)

- Led discussions during 14-member executive board meetings
- Coordinated logistics for interviews of 100+ member candidates
- Planned and facilitated general meetings and workshops for 30+ general members on eight design teams