SEOWON JEONG

Austin, Texas | 469-605-6955 | seowonj320@gmail.com | linkedin.com/in/sj320/ | Portfolio: https://seowon32.github.io/seowon.github.io/

PROFESSIONAL SUMMARY

Mechanical design engineer specializing in user-centered product development, prototyping, and manufacturable hardware systems. Experienced translating user and system requirements into validated mechanical designs across medical, consumer, and experimental hardware platforms.

EDUCATION

University of Texas at Austin

B.S. in Mechanical Engineering Honors | GPA 3.85

M.S. in Mechanical Engineering for Advanced Design and Manufacturing | GPA 3.78

PRODUCT & MECHANICAL DESIGN EXPERIENCE

ClearScope Medical Laparoscopic Simulator - Mechanical Design Lead Jan 2025 - May 2025

- Led end-to-end product development of a laparoscopic training simulator, translating clinical user requirements into validated, manufacturable mechanical architecture and SolidWorks assemblies.
- Reduced system cost to ~10% of comparable commercial platforms through material and manufacturing process selection.
- Fabricated and iterated CNC-machined and additively manufactured prototypes, resolving tolerance stack-ups and improving assembly reliability.
- Conducted structured user testing with clinical trainees, achieving >90% satisfaction in usability and realism.

Battery Defect Detection & Control System — Mechanical/Systems Engineer Sep 2024 - May 2025

- Designed and fabricated mechanical housings, fixtures, and mounting hardware for custom battery testing hardware, improving workflow efficiency by 50%+ and enabling repeatable experimental alignment.
- Developed Python-based automated defect inspection pipeline analyzing 10,000+ X-ray images, reducing manual analysis time by 24+ hours.
- Integrated mechanical hardware with electrical and data acquisition systems to ensure safe, repeatable experimental operation.

Reverse Engineering & Product Redesign - Sonicare Toothbrush Oct 2023 - May 2024

- Conducted Voice-of-Customer interviews and translated user pain points into engineering requirements using House of Quality methodology.
- Performed full product teardown and subsystem functional analysis to identify manufacturable redesign opportunities.
- Designed and validated prototype improvements using DOE methodology to reduce splatter and improve usability while maintaining cleaning performance and manufacturing feasibility.
- Generated DFM-focused design recommendations minimizing part count, improving hygiene, and simplifying assembly.

EcoCar EV Program — Mechanical Systems Integration Engineer Oct 2023 - May 2024

- Modeled EV subsystem packaging and wiring in Siemens NX, resolving >20% mechanical interference conflicts across multi-subsystem integration constraints.
- Supported vehicle teardown, subsystem integration, and reassembly within a multidisciplinary team environment.

INDUSTRY EXPERIENCE

Infineon Technologies - Manufacturing Engineering Intern | Austin, Texas May 2024 - August 2024

- Performed DOE and statistical process optimization using JMP to improve semiconductor etch yield by 10%.
- Increased production efficiency by 120% by eliminating bottlenecks and optimizing cleaning schedules, generating ~$50K annual savings.
- Developed data-driven recommendations balancing yield stability, equipment uptime, and manufacturing cost constraints.
- Collaborated with cross-functional engineering and operations teams to implement validated manufacturing improvements.

SKILLS

CAD: SolidWorks, Siemens NX, OnShape, AutoCAD

Mechanical Engineering: GD&T, DFM/DFA, tolerance analysis, prototype validation, machining, additive manufacturing, mechanical system integration

Programming / Analysis: Python, MATLAB, JMP, Java