Theodore Rex Orth

orth.rex@gmail.com | (425) 466-5810 | Seattle, WA | linkedin.com/in/-rex

EXPERIENCE

Mechanical Engineer Apr 2021 – Apr 2023

Meta - Redmond, WA

Led mechanical prototyping for novel haptics and sensing research. Worked independently or in small teams to design, fabricate, and demonstrate functional prototypes for internal demos and published research.

- Designed and built devices including soft force sensors, piezoelectric actuators, and an EMG-integrated wristband with electrostatic feedback
- Created custom tools and molds using DFMA and GD&T principles to optimize for small-batch manufacturability, ease of assembly, and low-cost production; increased actuator throughput by 10×
- Conducted mechanical testing and analysis (tensile, FEA, thermal) to validate designs and material performance
- Collaborated with researchers and interns to integrate optics, sensing, and electronics
- Co-authored a peer-reviewed paper in Advanced Functional Materials on electro-elastic wetting for droplet control

Mechanical Engineer Jun 2019 – Jan 2021

Robodub Drones - Seattle, WA

Primary mechanical designer at a startup developing reconfigurable drones for improved stability and efficiency. Supported rapid prototyping cycles and coordinated hands-on integration with technicians.

- Designed and improved structural components in response to flight test failures and performance needs
- Collaborated with technicians to test, repair, and iterate drone hardware across multiple platforms
- Reduced arm carriage weight by 20% via FEA while maintaining structural integrity
- Repackaged the drone to support tethered high-voltage power, with thermal FEA guiding ventilation and fan design
- Integrated PCB, power, and cooling systems to replace battery-based architecture and improve reliability

Instructor and Equipment Specialist Jul 2018 –Jan 2020

UW CoMotion MakerSpace – Seattle, WA

Supported a university makerspace focused on hands-on prototyping. Trained users and maintained fabrication tools to enable rapid iteration and safe equipment access.

- Mentored clients in prototyping software, equipment usage, and safety
    - Hosted educational workshops for Solidworks, Adobe Illustrator, 3D Printing, Laser Cutting, Sewing, CAM, Milling, Soldering
- Led workshops on CAD, 3D printing, milling, laser cutting, soldering, and CAM
- Mentored students and researchers on digital fabrication tools and design workflows
- Authored documentation and SOPs for equipment use and troubleshooting
- Maintained CNC mills, printers, and laser cutters to maximize uptime

EDUCATION

University of Washington 2020

BS Mechanical Engineering, Controls & Embedded Systems Focus *Seattle, WA*

SKILLS

Design & CAD: SolidWorks, Siemens NX, Injection Mold Design, GD&T, CAM, CNC Machining
Simulation & Analysis: FEA (ANSYS), Thermal Analysis
Electronics & Controls: Motor Control, PID Tuning, Soldering, Electrical Prototyping
Programming & Tools: MATLAB, Python, C
Fabrication: 3D Printing, Vacuum Forming, Laser Cutting, Manual Machining
Soft Skills: Technical Writing, Team Coordination, Cross-functional Collaboration