Jonathan Wallen

Mechanical Engineer

San Francisco, CA
(808) 295 9854
jonathan@insp-eng.com
www.insp-eng.com

Personal Summary

Innovative and fast-moving mechanical engineer with a strong background in full-cycle product development, from R&D to deployment. Known for crafting elegant, robust hardware solutions under tight timelines. A clear communicator with an instinct for critical questions that drive clarity and alignment with design intent. Passionate about merging user experience with engineering precision.

Experience

Apr 2023 – Present **OSARO**, *Lead Hardware R&D Engineer (Feb 2025 - Present)*, San Francisco, CA
Senior Mechanical Engineer (Apr 2023 - Feb 2025), San Francisco, CA

- Led hardware R&D, launching 5 unique products from concept to field deployment. Personally designed full robotic picking systems, multiple robotic end effectors, automatic tool changers, and a high-reliability rotary union for industrial automation systems.
- Owned all hardware for OSARO's most complex deployment, an international project with $1.2M in hardware COGS. Designed system optimizing for performance, scalability, and cost.
- Managed interdisciplinary technical efforts and schedules to align mechanical, electrical, and software systems. Owned programmatic requirement definition and feature request processes.

Jan 2022 – Oct 2022 **Built Robotics**, *Senior Robotics Hardware Engineer (May 2022 - Oct 2022)*, San Francisco, CA
Robotics Hardware Engineer (Jan 2022 - May 2022), San Francisco, CA

- Redesigned primary hardware product - a retrofit platform that converts a 30-ton excavator into an autonomous vehicle, integrating liquid-cooled computing, GPS, inertial sensors, and perception systems. Improved mechanical toughness, thermal performance, and mean time between maintenance by 8X.
- Piloted and field-tested first hydraulic pile-driving end effector that autonomously installs 400 lb steel I-beams. Concepted, prototyped and tested in < 2 months, to achieve new product-market fit.
- Optimized personnel safety system, doubling the range of wireless emergency stops and incorporating a rugged alarm system that quadrupled the safe operation area, reducing field labor by $<\%$ 50.

Aug 2019 – Dec 2021 **University of Hawaii at Manoa**, *Research Engineer*, Honolulu, HI

- Designed and deployed advanced underwater robotic platforms for autonomous research missions, integrating sensors, propulsion, and navigation systems.
- Conducted at-sea trials and iterative field testing to validate reliability and performance in harsh marine environments.

Education

2021 – 2023 **PhD Candidate, Mechanical Engineering**, *University of Hawaii at Manoa*
Focus: Design Optimization, Dynamics & Control, Autonomous Robotic Systems

2021 **MS, Mechanical Engineering**, *University of Hawaii at Manoa*

2019 **BS, Mechanical Engineering**, *University of Hawaii at Manoa*

Skills

- **Engineering:** Mechanical Design/Modeling, GD&T, DFM, FEA, Thermal Simulation, Prototyping, Composites, 3D Printing, Electrical Integration, Optics, Industrial Automation, Root Cause Analysis
- **Tools:** SolidWorks, Autodesk, MATLAB, Python, GitHub, Unix, LaTeX, Adobe Creative Cloud
- **Soft Skills:** Product Development, Technical Communication, Cross-functional Leadership

Portfolio

*Explore the full portfolio at **www.insp-eng.com**.*

- **Patents**: Integrated wave energy converter and docking station with ramped cloverleaf supplemental heave plate, Patent No. 11975811; Robotic tool changer (pending).
- **Teardrop Trailer Build**: Designed and fabricated a custom aluminum camping trailer.