Alexander Wolfgang Hoppe

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Summary

Mechanical / mechatronics engineer with a passion for undersea systems and multidisciplinary, electro-mechanical design. Thrives on solving challenging problems in diverse environments.

Education

Embry-Riddle Aeronautical University, Prescott AZ, *2017 – 2022*

- Bachelor of Science in Mechanical Engineering, Robotics track
- 3.97 / 4.00 GPA, graduated Summa Cum Laude

MIT xPro Professional Certificate Program, Online, *2024*

- Architecture and Systems Engineering: Models and Methods to Manage Complex Systems

Experience

Research and Development Engineer, Penn State University, *2023 – present*

- Designed, built, operated and maintained Unmanned Underwater Vehicles (UUVs) and other underwater test vehicles throughout their lifecycles.
- Conducted field testing of undersea systems on small boats and ocean-going vessels, ensuring all assets, sensors, and personnel were in place for successful operations.
- Collaborated with scientists to translate experiments into functional hardware solutions and worked directly with technicians and fabricators to build and test marine systems.

Mechatronics Engineer, Planted Solar, *2022 – 2023*

- Developed mechanical, electrical, and software systems for autonomous industrial robots starting from conceptual design all the way to deployment in harsh field environments.
- Designed and fabricated electromechanical assemblies by selecting off the shelf parts and collaborating with vendors to fabricate, or personally fabricating, custom components.
- Authored and documented robot software and firmware to ensure seamless operation.

Research & Teaching Assistant, Embry-Riddle, *2019 –2022*

- Designed hardware and developed software for glare detection and mitigation research.
- Tutored students and graded assignments for MATLAB, CAD, and robotics classes.

Mechanical Engineer Intern, DEKA Research & Development, *2021*

- Developed and prototyped micro manufacturing systems for pharmaceutical products.

Mechanical Engineer Intern, Alphabet, *2020*

- Designed mechanical parts and assemblies for stratospheric telecommunication balloons.

Mechanical Engineer Co-Op, General Dynamics Mission Systems, *2019*

- Developed electromechanical systems that operate in harsh undersea environments.

Skills

Design

- Solidworks
- Siemens NX
- ANSYS Workbench
- SolidWorks Simulation
- GD&T, DFM, & DFA Experience

Programming

- C, C++, & Python
- Beckhoff TwinCAT
- MATLAB & Simulink

Fabrication

- FDM & SLS 3D Printing
- Waterjet & Laser Cutting
- Shop Tools (Mill, lathe, etc.)
- Forklift and Crane Certifications
- Soldering & Electronic Fabrication

Software

- Asana, Jira, & Confluence
- Microsoft Office & Google Suite
- Git, Solidworks PDM, & Teamcenter