

Michael Hilt

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Active Security Clearance

WORK EXPERIENCE

Lumasys, Inc.

Research & Development Engineer

East Falmouth, MA

March 2021 – present

- Provide engineering solutions for a start-up specializing in high bandwidth, low power optical communications solutions for underwater applications
- Improve optical designs to increase the light detection of the photomultiplier tube and decrease backscatter
- Serve as product manager for two of three offered communications packages handling roughly \$250,000 of annual sales
- Perform quality assurance as well as handle packaging and shipping for international deliveries
- Coordinate timelines to assure that products are assembled and verified properly to meet deadlines
- Orchestrate solutions and documentation for approximately 20 annual technical support inquiries
- Designed and assembled a high-density LED board for increasing underwater optical communications range

Woods Hole Oceanographic Institution

Electrical Engineer II

Woods Hole, MA

June 2020 – present

- Develop optical communications solutions for autonomous underwater vehicles
- Serve as lead electrical designer for a UUV capable of AUV docking using AutoCAD Electrical for wiring harness design
- Assemble and test approximately 25 optical modem systems annually while detailing build and analysis procedures
- Oversee dock tests to verify communications link quality and range performance of optical modems in undersea setting
- Procure and research replacement components for ten simultaneous board assemblies facing supply chain issues
- Automated a PIC16 microcontroller program for long-term underwater deployment of a microbial sampler paying special attention to robustness and low-power usage
- Architected a PIC24 microcontroller algorithm to wake optical modem from extreme power saving mode
- Integrated CAN bus into ROS container for a UUV to communicate with thruster motor controllers
- Designed electrical circuit and PCB layout for high voltage power protection circuit board using Altium Designer
- Designed a wiring harness capable of 900W for integrating a laser transmitter module onto an underwater vehicle

Raytheon Integrated Defense Systems

Systems Engineer I

Marlborough, MA

June 2018 – May 2020

- Programmed modeling and simulation algorithms using Java for the Air & Missile Defense Radar (AN/SPY-6)
- Modeled high fidelity jammer behavior by analyzing real-time data and implementing the results
- Received a technical innovation achievement award for introducing a new signal processing path to support future algorithm development efforts
- Oversaw the continued integration and interfacing of the simulator with a third-party combat management simulation

Purdue University Department of Horticulture

Research & Development Assistant

West Lafayette, IN

August 2017 – June 2018

- Engineered plant cuvette technology to be used in controlled growth environments for the International Space Station
- Programmed a growth chamber management system using C# for measuring small plant photosynthesis
- Developed a system to control factors such as LED light intensity and levels of CO2 concentration in cuvette atmosphere

EDUCATION

Purdue University

Bachelor of Science in Electrical Engineering Technology

Minor in Computer Information Technology

West Lafayette, IN

May 2018

TECHNICAL SKILLS

Programming Languages: Java, Embedded C, VHDL, Python, PLC Ladder Logic

Software and Version Control: MATLAB, Altium Designer, AutoCAD Electrical, MPLAB X, Git, Oracle VirtualBox, TortoiseSVN