

BLAINE C. RIEGER

949-636-9497 ♦ blaine.rieger@gmail.com

76 Laurelhurst Drive
Ladera Ranch, CA 92694

EDUCATION

- Loyola Marymount University, Los Angeles, California** August 2019 - Expected 2024
Master of Science, Electrical Engineering
Graduate Thesis Title: "Modeling Driver Perception of Accelerator Pedal Input"
- Worcester Polytechnic Institute, Worcester, Massachusetts** August 2012 - May 2016
Bachelor of Science, Electrical and Computer Engineering
Undergraduate Major Qualification Project Title: "Smartphone-Based 12-Lead Electrocardiogram"

WORK EXPERIENCE

- Novanta, Irvine, California** November 2022 - Present
Electrical Engineer
- Novanta (Acquired Motion Solutions January 2024)** January 2024 - Present
Motion Solutions November 2022 - January 2024
- Collaborate with mechanical, electrical, and automation department to design and build custom electromechanical sub-assemblies for genomics, medical, life sciences, semiconductor and other industries.
 - Develop specialty hardware to test and measure life cycle, accuracy and repeatability of electromechanical hardware.
- Engineering Innovations, Rancho Santa Margarita, California** September 2021 - November 2022
Manufacturing Assistant
- Manufactured and inspected components for government and commercial contracts to specification while maintaining ISO 9001 quality management system.
- Loyola Marymount University, Los Angeles, California** May 2019 - December 2022
Graduate Research Lab Assistant
- Lab assistant at the Loyola Marymount University in the Rehabilitation, Assistive Tech and Human Control Theory Lab (REACT). Developed, manufactured, and tested electrical hardware and software for experiments conducted in the REACT lab. Maintained simulator and test fixtures.
- Rye Electric, Rancho Santa Margarita, California** May 2020 - August 2021
Engineering Consultant
- Consultant for electrical engineering contractor. Developed and programmed electrical hardware. 3D modeled and aided in the machining of components and assemblies.
- Rye Electric, Rancho Santa Margarita, California** July 2016 - August 2018
Project Engineer
- Engineer at electrical contractor. Carried out commercial electrical engineering projects in accordance with approved technical specifications.
- College Summer Internships**
Engineering Intern
- Rye Electric, Rancho Santa Margarita, California June 2015 - August 2015
 - Schneider Electric, Diamond Bar, California June 2014 - August 2014
 - Technologent, Irvine, California June 2013 - August 2013
 - Novak Electronics, Irvine, California June 2012 - August 2012

RESEARCH PROJECTS

Tripoli Level 3 High Power Rocket

Present

Personal Project - Level 3 Attempt Flight - Min. Total Impulse of 5,120.01 (N·s) - M Class Motor

- Develop bare-metal ARM based flight computer to log flight data and manage separation events during flight. Computer to be capable of communicating tracking and telemetry via down-link to base station.
- Design and fabricate composite structural and aerodynamic components for rocket. Simulate aerodynamic stability and performance with various payload and motor configurations.

Modeling Driver Perception of Accelerator Pedal Input

Present

Loyola Marymount Research Assistant / Master's Thesis

- Design software and hardware to investigate the relationship between the perceived accelerator pedal application to the measured input
- Proposed solution will be a model from which a reference table can be readily derived

Smartphone-Based 12-Lead Electrocardiogram

December 2015

Worcester Polytechnic Institute Major Qualifying Project

- Designed ECG analog circuitry and PCB which was manufactured and populated with components
- Interfaced analog PCB with embedded ARM processor to handle analog to digital conversion in addition to Bluetooth communication with smartphone

PUBLICATIONS

Friedman, J., Murphy, S., and **Rieger, B.C.** "Inexpensive, Portable, Smartphone-Based 12-Lead Electrocardiogram." *Worcester Polytechnic University*, 2015.

CERTIFICATIONS

Tripoli Level 1 & 2 High-Power Rocketry

2015

Tripoli Level 3 High-Power Rocketry

Expected Completion 2025

AWARDS AND SCHOLARSHIPS

Shu Family Endowed Scholarship, Academic Scholarship

2019 - 2020

Edward J. and Mildred P. Sydor Scholarship, Academic Scholarship

2013 - 2016

Worcester Polytechnic Institute Scholarship, Academic Scholarship

2012 - 2016

Eagle Scout, Boy Scouts of America

2011

SKILLS

Computer Software: EDA (Kicad, Eagle), MATLAB, GNU Octave, IDE (Eclipse, STM32 Cube IDE), CAD (Solidworks, Fusion 360), Microsoft Office

Programming Languages: C, C++, Python, G-Code. Limited exposure to: (VHDL, Verilog, Assembly)

Communication Interfaces: I2C, SPI, USB, CAN

Lab Equipment: Oscilloscope, Function Generator, Multimeter, Network Analyzer, Variable Power Supply, Soldering (Hand, Reflow)

Fabrication: PCB Assembly (Rigid / Flexible PCB, SMD / Through-Hole Components), Milling (Manual, CNC), Lathe (Manual, CNC), 3D Printing, Basic Welding (Arc, TIG, MIG), Various power and hand tools

ACTIVITIES

Tripoli Rocketry Association

2015 - Present

Loyola Marymount University IEEE Club

2020 - 2021