

Andrew J. Olson

(Address Omitted)

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Summary

Multidisciplinary engineer with experience in electro-mechanical design, system modeling, firmware and embedded systems, design and implementation of control systems, opto-mechanical design, and research and development. Has a passion and interest in seeing younger/future engineers/scientists succeed and develop their skills through mentoring, tutoring and teaching.

Education

- **California Polytechnic State University** San Luis Obispo, CA
M.Sc., Mechanical Engineering 2011 - 2012
 - Graduated Summa Cum Laude
 - Relevant courses: Adv. Mechatronics, Gas Dynamics, Finite Element Method, Composites, Adv. Vibrations, Rotor Dynamics, Applied Math, Numerical Analysis, Mechatronics, Linear Control Theory, System Dynamics
- **California Polytechnic State University** San Luis Obispo, CA
B.Sc., Mechanical Engineering 2007-2012
 - Graduated Magna Cum Laude
 - Concentration: Mechatronics

Work Experience

- **SA Photonics** Los Gatos, CA
Electro-Opto-Mechanical Engineer Jun. 2012 - Present
 - Performed self-managed work in a variety of disciplines including mechanical, software and electrical engineering.
 - Worked on interdisciplinary teams to design complete systems.
 - Designed opto-mechanical components for Free Space Optical (FSO) Communication systems (space-based and terrestrial) and other optical systems.
 - Designed electro-mechanical systems (Brushless motors, VCAs) for beam steering.
 - Designed control systems for beam stabilization and ran simulations to test the algorithms.
 - Wrote firmware in C for various microcontrollers and DSPs to perform motor control, beam stabilization, laser system control, and other functions.
 - Converted the company's FSO PAT algorithm from floating point to fixed-point math and fixed bugs that plagued the company for years.
 - Assisted with board bring-up for custom designed electronics in both hardware and software.
 - Worked with consultants to integrate and test their code into the company's electronic hardware.
 - Mentored a new engineer by giving guidance on problems that they encountered and helped to improve their skill set.
 - Assisted with writing Small Business Innovative Research (SBIR) and DARPA proposals.
- **Cal Poly State University** San Luis Obispo, CA
Research Assistant Jan. 2011 - Sep. 2011
 - Assisted with the design, construction and testing of HTPB based hybrid rocket fuel grains.
 - Assisted in the development and setup of an apparatus for a Rayleigh flow experiment.

- Performed initial testing of the Rayleigh flow experiment with air (instead of Helium) to identify leaks, sensor errors, and verify system performance.
- Performed boundary layer flow measurement collection on airfoils in a wind tunnel and test sections mounted to RC planes.

Teaching Experience

- **Self** San Jose, CA
Private Tutor 2012 - Present
 - Tutored college, high school, middle school students in calculus, algebra, geometry, physics (STEM classes).
 - Explained concepts, helped review for tests/quizzes, and tailored explanations to suit students learning style.
 - Used industry experience to relate concepts to real life applications.

Teaching Interests: Statics, Dynamics, C programming, Embedded Programming, Embedded Systems, Physics, Calculus, Algebra

Skills

Embedded Systems: AVR, ARM (M3, M4, A9), Xilinx Zynq, TI MSP430, TI C6000, Communication Protocols (UART, I²C, SPI), RTOS (FreeRTOS, custom)

Programming: C, Python, Assembly, MATLAB

Computer: Solidworks, Solidworks Simulation, MATLAB/Octave, iPython, FEMM, L^AT_EX, git, OpenOffice, MS Office, EagleCAD, Code Composer Studio, Xilinx SDK, Vivado, Linux, Windows

Lab Skills: Digital/Analog Scopes, Spectrum Analyzers, Function Generators, AWGs, Debugging

Fab Skills: Mill, lathe, shop tools, soldering

Miscellaneous: Self-motivated and managed, excellent troubleshooting and debugging skills, exceptional problem solving skills, good teams skills

Interests

Academic: Microcontrollers, control systems, system modeling, math

Computers: Enjoy using and learning Linux systems, building embedded projects at home

Musical: Piano, violin, building a violin

Activities: Trail running, hiking, swimming

Other: Origami, reading

References available on request