

Matthew Rodencal

4095 Lawsons Ridge Rd.
Apartment 1306
Huntsville, AL 35757

Electrical Engineer
mgr0003@uah.edu
matt.rodencal@gmail.com

(404) 229-4203
740 Butlers Gate
Marietta, GA 30068

Job Experience

- Research Assistant* UAHuntsville PRC *Jan. 2015 -May 2015*
- Design, Fabrication, and Testing of UHF/VHF Dual Band, Resonance Radar Testbed
 - Development and Characterization of UHF/VHF Radar System
- Research Assistant* UAHuntsville CSPAR *May 2013 -Dec. 2014*
- Design, Fabrication, and Testing of Calibration Light Source and Helicopter/Balloon Tracking System for the BALLOON-EUSO Missions
- Electrical Engineer (Intern)* Sanmina-SCI *May 2012 - Aug. 2012*
- Debugged and brought prototype portable laser devices to operational status
 - Designed testing equipment for portable medical devices
- NASA MSFC Intern* Marshall Space Flight Center *May 2011 - Aug. 2011*
- Designed and tested state-of-the-art particle detectors for identifying trapped and solar energetic particles from a sub-orbital platform

Professional Conferences and Publications

- 7th Werher von Braun Memorial Symposium Student Poster Competition* Oct. 2014
- [Calibrating Balloon EUSO \(1st Place\)](#)
- 6th Werher von Braun Memorial Symposium Student Poster Competition* Oct. 2013
- [Developing the ChargerSat-1 Electrical Power System](#)
- 5th Werher von Braun Memorial Symposium Student Poster Competition* Oct. 2012
- [ChargerSat-1 Prototype Development \(1st Place\)](#)
- 63rd International Astronautical Congress* Sept. 2012
- [Maximizing Overall Electrical Power System Efficiency in Pico/Nano Satellites with Innovative Plug-and-Play Battery Charging System](#)
- 9th Annual CubeSat Developers' Workshop* May 2012
- [Innovative Plug-and-Play Battery Charging System to Maximize Overall Electrical Power System Efficiency in 1U and 2U CubeSats](#)
- NASA Marshall Space Flight Center Intern Poster Exposition Summer 2011* Aug. 2011
- [Validation of Novel Particle Spectrometer for Measuring Trapped and Solar Energetic Particles \(3rd Place\)](#)
- 8th Annual CubeSat Developers' Workshop* May 2011
- [An Affordable, Efficient 1U CubeSat Electrical Power System Scalable for 2U and 3U Systems](#)

Research Experience

- [International CanSat Competition \(2nd Place\)](#) Oct. 2014 - May 2015
- Embedded System Programming Lead, wrote +26,000 lines of code
 - Successful Design and Implementation of Nested Nonlinear Control Laws
- [UAHuntsville ChargerSat-1 1U CubeSat Project](#) Aug. 2010 - May 2014
- Electrical Systems Lead, Electrical Power System Design
 - Responsible for the design, prototyping, and debugging of all electrical systems
 - Conducted ChargerSat-1 deployment tests in microgravity aboard the G-Force One

UAHuntsville Space Hardware Club Neutron Counter *Jan. 2010 - Dec. 2012*
- Responsible for the fabrication, debugging, and systems integration of the joint Space Hardware Club/NASA Neutron Detector High Altitude BalloonSat Payload

Education

University of Alabama in Huntsville *Jan. 2014 - ongoing*
- College of Engineering
- M.S. in Electrical Engineering
- Expected Graduation Date: Spring 2016

University of Alabama in Huntsville *Aug. 2009 - Dec. 2013*
- College of Engineering
- B.S. in Electrical Engineering
- Graduation Date: December 2013 Overall GPA: 3.4

Awards, Scholarships, Leadership Positions and Certifications

Space Hardware Club President *Aug. 2012 - Sept.2013*
- Responsible for overseeing the Space Hardware Club's +40 members and the completion of the club's 8 active projects

Treasurer of the Space Hardware Club *Aug. 2011 - Aug. 2012*
- Responsible for overseeing the Space Hardware Club's +\$70,000 annual budget

UAHuntsville Deans List *2009 - 2011*

UAHuntsville Presidential Scholarship *Aug. 2009 - May 2013*

Level 1 High Power Rocketry Certification (Tripoli) *Jan. 2015*

Amateur Radio Operator KK4NAK *Nov.2012 - ongoing*

NAUI Open Water Scuba Diver *Aug. 2011 - ongoing*

Key Words

Embedded System Design and Programming, Project Management, C/C++ Programming, Computer Programming, HTML, php, MySQL, Database, Networking, Web Design, Laser Systems, High Altitude Weather Balloon, BalloonSat, CubeSat, GPS Systems, Radio Systems, Control Systems, Solar Panel, Maximum Power Point Tracker Design, Alternative Energy Systems, MATLAB, Micro-controller, Micro-processor, Amateur Radio, ARISS, Test Engineering, Mission Management, LabVIEW, Micro-Gravity Testing, Amateur Rocket Design, Avionics Design, Radio Transceiver Design, Optical Systems, NASA, UAHuntsville, Space Hardware Club, NSSTC, MSFC, Marshall Space Flight Center, National Space Science and Technology Center, Communications, Wireless Communications, CanSat, Integrated Systems PCB Fabrication, Microelectronics Fabrication, SMT/SMD Soldering, Printed Circuit Board Design, Circuit Design, Sensor Systems, Excel, Word Processing, Power Point, Solid Edge, Solid Works, CAD