Alfredo Muniz

EMBEDDED SYSTEMS ENGINEER
TECH ENTREPRENEUR

PUSHING THE LIMITS OF EMERGING TECHNOLOGY

muniza.github.io
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EDUCATION

University of Pennsylvania
Philadelphia, PA

B.S.E Electrical Engineering &
Mechanical Engineering
GPA: 3.10 Grad: May '16

M.S.E Robotics & Engineering
Entrepreneurship Cert.
GPA: 4.00 Grad: May '16

HARDWARE SKILLS

BeagleBone Black
ZedBoard Zynq
ARM Cortex-M
ARM Cortex-A
Raspberry Pi
BLE NRF51
MSP430
HCS12
AVR

SOFTWARE SKILLS

CMake/Make
SolidWorks
GNU Radio
MATLAB
Vivado
Saleae
KiCad
Linux
Git

LANGUAGES

C/C++
VHDL
Python
iOS Swift
Android Java
Spanish (Native)

WORK EXPERIENCE

Electrical Design Intern – Lime Lab, San Francisco, CA Summer 2015
- Advanced the critical path, enhanced effective team project execution, and formulated key software/hardware decisions for six unique projects

Google Summer of Code – Ettus Research, Santa Clara, CA Summer 2014
- Integrated Texas Instruments' radio accelerators into the GNU Radio tool to enable novel applications in software defined radio experimentation

Technical Advisor – University of Pennsylvania Summer 2013
- Created a data network lab that was later incorporated into the Electrical Engineering curriculum & provided hands-on-mentoring to 50+ students

Robot Systems Researcher – Rice University, Houston, TX Summer 2012
- Pioneered robot skirts and quick chargers to accelerate development on swarm robots that produced highly cited publications in robotics research

MLab Rachleff Scholar – University of Pennsylvania Sept 2012 – Aug 2013
- Redesigned the hardware circuit & controls software of an electric vehicle battery-capacitor system achieving 23+ percent improved battery life

SELECT PROJECTS

APRO: Application-Based Robot ('14-'15) **Rapid Out-of-Box Ideation**
- Streamlined technical solutions on a cylindrical robot designed for home automation, social robotics, computer vision, and data acquisition tasks

Mechatronic Kinematic Lute ('14) **Mission Critical Design**
- Spearheaded development on electrical hardware and software aspects of a light-and-sound instrument showcased at Slought Foundation's art show

UPenn Wireless Club ('13-'15) **Visionary Project Management**
- Established the only Amateur Radio Volunteer Examiner team in Philly and licensed new ham radio operators while teaching them radio best practices

GNU Radio Guided Tutorials ('14) **Creative Community Collaboration**
- Directed the planning, writing, testing, and supporting of the number one recommend tutorials for learning the open source software GNU Radio

AWARDS & PUBLICATIONS

University of Pennsylvania School of Engineering & Applied Science
- **2012 Rachleff Scholar** – Honors research program attracts extraordinary engineering students & produces lifelong leaders in technology innovation
- **2015 Walter Korn Award** – Awarded annually by the faculty of the School of Engineering to an outstanding senior continuing to graduate studies
- **2015 Honorable Harold Berger Award** – Senior design project that best combines conceptual/technical innovation with entrepreneurial possibility

Muniz, A. (Sept 2015). "**Enhancing GNU Radio w/ Heterogeneous Computing**" Association for Computing Machinery (ACM). DOI: 2801676.2801689

More Available Online at **muniza.github.io**