ANTHONY FORD

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ME

A passionate Python developer with experience in Hardware/Software integration, web development, physics, user interfacing, and an interest in IT Security. Experience managing servers and small network design and management. Strongly interested in mentoring others, with experience in public outreach and teaching students. A strong public speaker, with experience presenting in a technical environment, as well as experience presenting technical topics to the public and non-technical audiences. Conversationally fluent in Spanish, with some technical vocabulary as well.

TECHNICAL SKILLS

Programming Languages	Python (6yrs), JavaScript (4yrs), HTML 5, CSS, BASH, PHP4/5, C++, AVR-C, MATLAB, IDL
Documentation	Markdown, LaTex, reStructuredText, Sphinx
Development Tools	Git, Mercurial, Bash, Vagrant
Operating Systems	Linux (11 yrs), Apple OSX (3 yrs), Microsoft Windows
Database Experience	MySQL, PostgreSQL, SQLite3, SQLAlchemy ORM
Digital Electronics	8-bit AVR and MSP430 microcontrollers, sensor monitoring and data logging, motion and control, Hardware/Software integration
Analog Electronics	RF signal conditioning, simple discrete filters, data acquisition
Design Tools	ECAD: Cadsoft Eagle, KiCad, DesignSpark; CAD: Autodesk Inventor

EXPERIENCE

Arecibo Observatory August 2013 - Present
Electronics Engineer

- Primary duties involved design of new control systems, development of control software, maintenance of existing RF system, characterization of RF systems using various RF test equipment.
- Projects:
  - **Radar Web Log** *(2015)*
    Web based data entry system for Planetary Radar Group, Python/jQuery/CSS
  - **HF Phase Synthesizer Control System** *(2015)*
    AVR based digital controller with Python and GTK based GUI
  - **Cryogenics Monitoring and Contol** *(2014)*
    Python based Web App and monitoring system with JavaScript plotting system for data exploration
  - **12m Up/Down Converter Control System** *(2013)*
    Python based Web App to control RF signal hardware over socket communications
- Also participated as a Mentor in the NSF Research Experience for Undergraduates program, summer of 2015

ARCC at Univ. of Texas at Brownsville Fall 2008 - July 2013
Lab Manager (Fall 2012-July 2013)
Student Researcher (Fall 2008-May 2013)

- As Lab Manager, I took on a management and coordination role in the Astronomy and Electronics lab, with duties including space management, inventory control, introduction of a standard parts system, promoted documentation (including an informal writing workshop)
- As a student researcher, I was responsible for conduction independent research in radio astronomy, mentoring lower classmen, presenting my research at the annual American Astronomical Society meetings, and developing software to facilitate operation of the research lab
- Projects:
  - **CARA Request Tracker - Developer** *(2012)*
    Custom web app for the Center for Advanced Radio Astronomy, somewhat of a helpdesk ticketing system crossed with an issue tracker. Based on the Flask web framework, jQuery front-end, and MySQL database.
  - **NanoBench - Project Leader** *(2010)*
    Led a small team of students in developing a PHP web app to perform simulations of stochastic gravitational wave detection. Using PHP4 and straight JavaScript.
  - **Gravitational Wave Data Analysis Workshop Registration Site - Developer** *(2008)*
    PHP4 based web app for event registration. Leveraged a MySQL database.

National Radio Astronomy Observatory - Charlottesville Summer 2010
REU student

- As an REU student, my primary task was exploring methods of mining and visualization of radio astronomy surveys. I experimented with using Google Sky and the Virtual Observatory, as well as utilizing Apache Solr and Project Blacklight to present a searchable index of survey observations.
- Visualization of survey data immediately led to the discovery of observational inefficiencies.

OPEN SOURCE PARTICIPATION

Flask-WTF - Maintainer 2012 - 2013
Flask extension integrating WTForms (an HTML form library for Python)

- Maintained extension for about a year before handing it off due to lack of time

Flask-Sendmail 2012 - present
Flask extension to simplify interfacing with Sendmail bin

- Originally written for use with an internal project at UT Brownsville, but open sourced

RGV Regional Science and Engineer Fair Registration - Developer 2011 - 2013
Online registration system for the Rio Grande Valley Regional Science and Engineering Fair

- Based on Python, Flask web framework, HTML5/CSS/jQuery, and PostgreSQL
- Was originally written in PHP4 (2010), but was migrated to Python and open sourced in 2011
- Prior to introduction of online system, all registration was handled by hand and had to be delivered to the Coordinator's office (which could be up to a 50 mile round trip)

EDUCATION

University of Texas at Brownsville Fall 2008 - Spring 2013
Physics and Computer Science