Gabriel Gonzalez

621 West Cota Street Unit B
Santa Barbara, Ca 93101
(805) 895-4626

gabeg@bu.edu
Website: gabegonzalez.me
Github: github.com/gabeg805
LinkedIn: linkedin.com/in/gabeg805

Objective

I am seeking a software engineering position where I can make a positive contribution to the technology industry by applying my knowledge of programming, mathematics, and astrophysics.

Computer Skills

Languages: C, C++, Java, Python, Bash, IDL, LaTeX, Assembly
Software: Git, SVN, GNU Debugger (GDB), Valgrind
Operating systems: Unix, Windows, OS X

Education

Boston University **May 2015**
BA : Astronomy and Physics

Work Experience

NASA Goddard Space Flight Center **Greenbelt, MD**
Software Engineer *June 2015 – present*

- Integrating an orbit simulation program, 42, with flight software in order to enable CubeSat Hardware-in-the-Loop testing.

Boston University Computer Science Department **Boston, MA**
Software Engineer *January 2015 – May 2015*

- Implemented a programmable interval timer (PIT) clock for the kernel of the Elastic Building block Runtime (EbbRT), a multi-node library runtime.
- Completed the EbbRT clock interface which initializes the correct clock (PIT or paravirtualized clock), depending on the device's hardware.

Boston University Satellite for Applications and Training **Boston, MA**
Software Engineer *September 2014 – May 2015*

- Created a simplified day-in-the-life simulation for the command and data handling subsytem.
- Developed the communications protocol between the main ANDESITE nanosatellite and eight picosatellites.
- Implemented the sensory data collection algorithm for eight picosatellites.

Boston University Center for Space Physics **Boston, MA**
Lab Assistant *May 2014 – February 2015*

- Developed an algorithm to express the wavelength of light as a function of pixel location on the Venus Spectral Rocket (VeSpR) imager CCD.
- Created a model of the expected spectra (1000 – 2500$\AA$) for Venus and Altair.
- Created a model for the payload quantum efficiency, reflectivity, and prism efficiency.

Boston University Center for Space Physics **Boston, MA**
Research Assistant *September 2014 – October 2014*

- Developed an algorithm to automatically remove scattered background light in images taken by the Mars Atmosphere and Volatile Evolution (MAVEN) Imaging Ultraviolet Spectrograph (IUVS) instrument.

Boston University Center for Space Physics **Boston, MA**
Lab Assistant *June 2014 – August 2014*

- Developed software for a microcontroller to control the inner housing that holds items placed in the vacuum chamber.

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Work Experience

Boston University Center for Space Physics **Boston, MA**

Lab Assistant *June 2014 – August 2014*

- Created a CAD model of the vacuum chamber's switchboard.
- Tested the operating state of the damaged vacuum chamber.
- Replaced defective vacuum chamber equipment.

Boston University Center for Space Physics **Boston, MA**

Research Assistant *February 2012 – December 2013*

- Developed an algorithm to analyze the response of the Mars ionosphere to solar flares, utilizing radio occultation measurements made by the Mars Global Surveyor (MGS).
- Categorized solar flare intensities based on the Flare Irradiance Spectral Model's (FISM) flare strength and the electron density enhancement in the M2 region of the ionosphere.
- Analyzed the relationship between solar flare intensity and Earth-Sun-Moon angle, as well as solar flare intensity and solar zenith angle.
- Created a map of the electron density in the Venus upper ionosphere using Pioneer Venus Orbiter (PVO) Ion Mass Spectrometer (OIMS) data.
- Compared the OIMS data to the Orbiter Electron Temperature Probe and Orbiter Retarding Potential Analyzer (ORPA) ionospheric data.
- Determined the potential invalidity of the PVO dataset due to its skewed results when compared to VIRI and VEX.

Projects

Elysia

Login Manager

A highly configurable login manager.

Atlas

Status Bar

Meant to be a replacement for the dwm text statusbar.

Aria

Notification Bubble

Meant to be a replacement for the dwm text statusbar.