Caleb Adams

Programmer - Scientist - Musician

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Interests

I am a curious and passionate individual who enjoys the process of science and creative problem solving. My career goal is to assist with the long term exploration and monetization of space though the use of innovative technologies. I want to help lay the foundations to explore and colonize our solar system.

Education

The University of Georgia; Athens, GA – Computer Science, Astrophysics - 2017

Hope Scholarship Recipient
Zell Miller Scholarship Recipient
Redcoat Band Scholarship Recipient

Skills

Programming Languages

C, C++, Objective-C, Java, Javascript, HTML5, CSS, PHP, Python, Ruby, Bash and Shell Scripting

Operating Systems

Mac OSX, GNU/Linux (Debian, Redhat, CentOS, Ubuntu, Puppy), IOS, Android

Physics

Orbital Mechanics, Classical Mechanics, General Undergraduate Astronomy

Engineering

Server construction, LAN/WAN networking, Arduino, Raspberry Pi, Remote Communications

Other Related

NASA Core Flight Software, CCSDS packet communications, OpenGL, OpenGL ES 2.0, WebGL, Apache 2.0, MySQL, OpenSSH, Gradle, XML, JQuery, Library Construction, API development, Ruby on Rails, Bootstrap

Experience	**Core Flight Software Development, NASA; Houston, TX – Summer 2015**

I worked in NASA's Avionics Systems Division to design audio communications for the new Orion space capsule. I worked in the HIVE (Human Integrated Vehicles and Environments) lab as a Core Flight Software developer and networking specialist.

- Core Flight Software Development: This required extensive use of the C programming language in a linux development environment. Low level process/application scheduling was required. Command and telemetry packets needed to be formatted in both UDP and CCSDS. Custom CFS apps were made and internal BUS communications were used to send telemetry within the CFS.
- Audio Communications and Network : I had to design an Audio network over LAN and integrate it into the NASA Johnson Space Center's WAN. This had to interface with the Mission Control Center. In the end this will allow users in various labs across the NASA campus to communicate with the MCC and the HIVE.

Founder, Spacey; Athens, GA – 2015 - Present

Spacey is a startup founded with the intention of bringing astronomy closer to the public. We focus on the development of space observation for popular astronomical purposes.

- Remote Telescopes; The Elon Series: We have developed a prototype telescope that is the cheapest and most versatile remote observation telescope on the market. When we develop the next iteration of our telescope we will have a Kickstarter campaign for funding.
- Earth Observation; LEO Cubesat: We are currently developing and prototyping a LEO (Low Earth Orbit) Cubesat to be launch with NASA's ELANA (Educational Launch of Nanosatellites) program. Our Cubesat will be used for earth observation and will be the first truly crowd owned satellite.

Head Undergraduate Researcher, Hodgson Research Lab; Athens, GA - 2014 - Present

I am currently working as the head undergraduate researcher of the Hodgson Research Lab. I assist and advise Dr. Turner with technical research and logistics.

- Music and Google Glass; A HUD Score Viewer: We have developed the words first music score viewing application for Google Glass. The music appears in a Heads Up Display and is controlled with eye movement.
- Smart Music Podiums; Electronic Score Manipulation: We are currently developing a smart touchscreen podium that can be interfaced with various devices. The podium will be able to push updates to other electronic scores.
- Website Development; UGA Band's New Website: I developed the Website for The University of Georgia Bands. I built it from the server level to the front end user experience. The site is live at bands.uga.edu.

Research and Development Intern, The Home Depot; Atlanta, GA – Summer 2014

I have worked for The Home Depot as an IT intern in their Experimental Development Lab. I worked with a team on cutting edge technologies. Some of my achievements are still in use at the company today.

- Google Glass Development; Retail Glass Usage: I helped to develop retail applications and use cases for Google Glass. This required knowledge of optics and Android Development.
- Virtual Reality; Retail VR Usage: I helped to develop retail applications and use cases for Google Cardboard. This required knowledge of OpenGL and Android Development.
- Smart Home Devices; Potential Smart Device Research: I experimented with the viability of various devices and helped to evaluate them as potential products.

Leadership & Organizations

Redcoat Band; Section Leader and Rank Leader

I lead, manage, and rehearse 60+ band members. I leaded my section's musical and marching practices.

Phi Mu Alpha Professional Music Fraternity; Webmaster

I developed the website for my Music Fraternity. I also teach younger members how to manage and update the website.

UGA Hacks; Chief Technology Officer

I am a founding member of the first Hackathon to be hosted at UGA. I manage a team of programmers who maintain our website, communications platforms, and physical networking needs.

UGA IEEE; Webmaster and Head of Web Committee

IEEE is the Institute of Electronic and Electrical Engineers. I maintain and improve our website and I teach web development to 20+ of my peers. I also assist the IEEE robotics team with programming.

UGA ACM; Public Relations Officer

ACM is the Association of Computational Machinery. I perform community outreach and advertise public events for ACM.

Scientific Outreach & Public Speaking

Astronomy and Physics Blog; The Most Popular Astronomy blog on Tumblr

I run the most popular Astronomy blog on the Tumblr blogging platform. I have over 160,000 followers who read my posts about astronomical phenomenon and recent astronomy news.

Computer Science Blog; The Most Popular Computer Science blog on Tumblr
I run the most popular Computer Science blog on the Tumblr blogging platform. I have over 5,000 followers who read my posts and ask me questions about the technical aspects of Computer Science.

Interdisciplinary Research Conference; A presentation of Technology and Music
As the head Undergraduate Researcher of the Hodgson Research Lab I aided with the presentation of our Score Viewing Google Glass application. I gave a live demonstration of our product and our findings.

Engineering in Space; A talk to UGA's School of Engineering
I gave a talk to UGA's Multiple Engineering Clubs and professors about the basics of Orbital Mechanics and the importance of Space Exploration.

Awards

Virginia Tech Hacks; First Place Hack and Overall Winner
I lead a team of programmers, scientists, and engineers to develop a low cost and versatile remote telescope. This telescope caused the formation of my startup company, NeoGalactics.

Hack FSU; Winner of Best Veteran Hack
I lead a team of programmers, scientists, and engineers to develop a low cost and reusable small satellite testing platform. We developed a high altitude balloon which can communicate via radio waves and contain a maximum payload of a 3U Cubesat.

Team Excellence; NASA Avionics Systems Division
I stayed late to preform thermal testing and experiments on a video system that would be attached to the outside of the International Space Station. My division recognized by late lights by giving me this award.

References

Available Upon Request