< Alexander Christian DeRieux />

Scientist + Engineer + Developer
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Education

Bachelor of Science in *Electrical Engineering*, Minor in *Mathematics – cum laud* [8/2012 – 5/2016]
Virginia Polytechnic Institute and State University, Blacksburg, Virginia
In Major GPA: 3.437, University GPA: 3.407

Bachelor of Science in *Computer Science – cum laud* [8/2012 – 12/2016]
Virginia Polytechnic Institute and State University, Blacksburg, Virginia
In Major GPA: 3.793, University GPA: 3.456

Employment Experience

Electronics Engineer [2/2017 – Present]
U.S. Naval Research Laboratory (NRL), Washington DC, Secret clearance
Research, design, and develop space-system technologies for the U.S. Navy in the areas of rocketry, advanced navigation satellite technology, critical communication system timing, space surveillance, precision tracking from space and ground, and Precise Time and Time Interval (PTTI) theory and techniques.

Electrical Engineering Co-op [7/2012 – 2/2017]
U.S. Naval Research Laboratory (NRL), Washington DC, Secret clearance
Created an off-the-shelf system for high altitude naval vessel tracking. Designed image processing algorithms to identify naval vessels and their location using Python and OpenCV. Wrote technical documentation and how-to guides for various projects.
Developed alternative modes of satellite propulsion using natural and induced magnetic fields. Created custom payload deployment systems for small satellites. Designed an off-the-shelf system for controlling robotic arms used in spacecraft docking and other tele-operation applications.

Resident Advisor [8/2016 – 12/2016]
Virginia Polytechnic Institute and State University
Managed a residence hall floor of 37 undergraduate students. Scheduled and coordinated weekly events among residential staff and residents of multiple hall communities. Resolved conflicts amongst residents and residential staff. Documented nightly hall inspections and important student conduct information.

Academic Tutor [1/2012 – 5/2012]
Tutoring Services, Germanna Community College, Fredericksburg, VA
Developed bookkeeping and interpersonal skills by working in a tutoring office at the community college. Tutored all academic levels in the subjects of Math, English, Physics, Chemistry, Computer Programming, French, and Economics.

Engineering Projects

Capstone: MITRE [8/2016 – 12/2016]
Created 'ERIS', a wearable emergency responder information system for first responders in the field. Developed companion applications for Android mobile, Android Wear-powered Moto 360 smartwatch, and Android-powered Recon Jet heads-up display. Collaborated in a 5-person team using face-to-face and virtual meetings. Employed use of GitHub for version control. Learned ethnography and project demonstration techniques towards both technical and non-technical audiences.

Capstone: General Motors & VTTI [8/2015 – 5/2016]
Created a wireless off-the-shelf device for interfacing with vehicle OBDII system. Developed companion Linux and mobile application software for wireless data acquisition and interaction. Learned project management, project documentation such as request for proposal, and customer relations from instructors that have extensive backgrounds in the corporate world.

Communication Systems [1/2015 – 5/2015]
Developed a RTL-SDR receiver system called 'RadioPi' to process local FM transmissions. Signal processing algorithms are written in Python using GNURadio API and custom signal blocks. Design elements include the Raspberry Pi, USB RTL-SDR antenna, and breadboard circuitry for user interface.

Mobile Application Development [7/2015 – 08/2015]
Developed 'Velo', an Android mobile and wearable application that navigates exclusively using onboard GPS modules, thus bypassing the need for wireless data. Users can logon using Facebook and store their routes to local SQLite and online SQL databases using AWS. Crash detection is implemented using onboard gyroscope and accelerometer sensors, notifying a set of emergency contacts of your situation upon detection of the crash.

Skills and Abilities

Programming
Systems: Linux, macOS, Windows, iOS, Android
Languages: Python, *C, C++, LaTeX, FORTRAN, SQL, Java, Objective-C, HTML, XML, CSS, Javascript, Arduino, Ruby, Lisp, Scheme*
Frameworks: *Google Glass, Google Maps, AngularJS, SendGrid, MailChimp, Parse, OpenCV, AWS, Google Sign-In*

Electronics
Circuits: Soldering, Breadboarding, Eagle
Microcontrollers: Arduino, Raspberry Pi, PIC
Communications: Digital Signal Processing (DSP), Software-Defined Radio (SDR)

Honors and Awards

Dean's List
Virginia Tech: *Fall 2013, Spring 2014, Spring 2015*, Fall 2015, Spring 2016*, Fall 2016**
(*) = with distinction
Germanna Community College: *Fall 2011, Spring 2011, Spring 2012*

Academic Honors
Germanna Community College: *Fall 2010*

Activities and Leadership

Virginia Tech Fencing Club [2013 – 2014]
Trained in the Epee fencing style and competed in tournaments.

Chi Alpha Campus Ministries [2012 – 2016]
Co-lead Life Groups of eight students. Organized and coordinated meetings and events with other Life Groups within Chi Alpha.

Unicyclist [2013 – Present]
Avid sport unicyclist.

Musician [2010 – Present]
Self-taught musical knowledge of the piano.