

# < Alexander Christian DeRieux />

Scientist + Engineer + Developer

(540) 419-7390 • acd1797@vt.edu • zanderman.github.io

**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*** [ Expected Graduation Date: 12/2016 ]  
Virginia Polytechnic Institute and State University, Blacksburg, Virginia  
In Major GPA: 3.738, University GPA: 3.407

**Joint-Enrolled High School Student** [ 8/2010 – 5/2012 ]  
Germanna Community College, Fredericksburg, VA  
University GPA: 3.79

**Employment** **Electrical Engineering Co-op** [ 7/2012 – Present ]  
**Experience** *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.

**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** **Capstone: General Motors & VTTI** [ 8/2015 – 5/2016 ]  
**Projects** Creating a wireless off-the-shelf device for interfacing with vehicle OBDII system. Developing companion Linux and mobile application software for wireless data acquisition and interaction. Learning 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: Android, iOS, *Macintosh, Linux, Windows*  
Languages: C, C++, *Java, Python, LaTeX, Objective-C, HTML, XML, CSS, Javascript, Arduino*  
Frameworks: *Google Glass, Google Maps, AngularJS, SendGrid, MailChimp, Parse, OpenCV, AWS*

**Electronics**  
Circuits: Soldering, Breadboarding  
Microcontrollers: Arduino, Raspberry Pi, PIC32  
Communications: Digital Signal Processing (DSP),  
Software-Defined Radio (SDR)

**Honors and Awards** **Dean's List**  
Virginia Tech: *Fall 2013, Spring 2014, Spring 2015 (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 as a member of the club team and competed in tournaments.

**Chi Alpha Campus Ministries** [ 2012 – Present ]  
Co-lead Life Groups of eight students throughout the school year. Organized and coordinated weekly meetings and events with other Life Groups within Chi Alpha.

**Unicyclist** [ 2013 – Present ]  
Avid sport and commuter unicyclist.

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