Jakob D. Gray

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EDUCATION

University of Virginia School of Engineering and Applied Science — Charlottesville, VA
B.S. Biomedical Engineering; Minor in Computer Science; GPA 3.5 — May 2018

Norfolk Collegiate — Norfolk, VA
Advanced Diploma; AP Scholar with Distinction; Valedictorian — Class of 2014

TECHNICAL SKILLS & LANGUAGES

- Microsoft Office, Autodesk Inventor, Mathematica, MathCAD, Matlab, Minitab, Arduino, and Eclipse.
- CS Languages having studied independently or in-class: Java, Python, MATLAB, C++, HTML5
- Languages: English, German

WORK EXPERIENCE

Center for Open Science Extern, Charlottesville VA — March 6th –March 10th, 2017

- Worked with a group to design improvements for COS's Open Science Framework project management service
- Designed "Ember Ignite", a user feed that improves accessibility to scientific projects and displays recommended material tailored to the user. Made using Django and Bootstrap, accessing data through requests to the OSF API

Undergraduate Lab Research, Charlottesville VA — Winter 2017—Present

- Working in UVA BME lab focusing in image data science
- Studying segmentation, feature extraction, and classification methods for determining cancer presence from cell nuclei images with end goal of combining processes within a single application

Programming Research Intern, Charlottesville VA — Summer 2016

- Internship with the UVA VIVA lab utilizing Matlab and Beanshell
- Designing a script that works with a microscope to automatically collect and analyze a sample, detect regions of interest in real time, and optimize image capturing sequence to collect higher resolution, more useful images in less time

Lifeguard, Norfolk/Portsmouth VA — May 2012—August 2015

- Maintained and oversaw pool operations 30 hr/week during Summer
- Trained and certified in First Aid, CPR, Emergency Oxygen, and Rescue skills

TECHNICAL PROJECTS & COURSEWORK

BME IDEAS Lab – Integrative Design and Experimental Analysis — Fall/Spring 2016-17

- Performed a number of projects including Western Blotting, Immunofluorescence, Reverse Transcription, Image Processing, Tissue Engineering, etc.
- Designed functional EKG, operated and measured ultrasound machine, segmented and de-convolved cell images

BME 4550 – Systems Bioengineering Modeling and Experimentation — Fall 2016

- Designed a Mass Action Kinetics model of the Fibrin Formation cascade using ODEs in Matlab
- Formed predictions on metabolic factor influences through sensitivity analysis

CS 2150 – Program and Data Representation — Spring 2017

- Intensive data structuring and representation using C++ in a Linux environment
- Implemented numerous data structures from the ground up