James Houghton

Contact Information

Address: 1720 Chesterbrook Vale Ct., McLean, VA 22101
Phone: +1 (571) 242 9362 | Email: jhoughton@virginia.edu
Website: jhoughton.me | GitHub: github.com/jamesthoughton

Experience

Jun 2018 - Present — Developer and Data Analyst at Treliant Risk Advisors, LLC.

Created foreign correspondent banking monitoring tool which detected various types of suspicious behavior. Back-end and command-line interface developed with R and `data.table`; front-end developed with `Rshiny`.

Jun 2016 - Jun 2018 — Lead Web Developer at Insight Interfaces, LLC.

Full-Stack Development and Cloud Deployment

Created a browser-based remote teleconferencing application built on top of WebRTC. Developed with the Django web application framework, the Node.js runtime, Socket.IO, Redis, and Docker. Became familiar with cloud deployment with AWS EC2/EB and Google's Compute and Kubernetes Engines. Honed front-end JavaScript development and webpage design skills in CSS.

Sept 2013 - Jun 2017 — Student Systems Administrator at TJHSST

Improved and maintained computer systems used by faculty and students including webservers, workstations, and parallel computing clusters. Made heavy use of AFS, KVM, slurm, and Nginx. Contributed to the student intranet project, a Django-based web application.

Education

May 2020 — **University of Virginia** - B.S. in Computer Science, B.A. in Mathematics - GPA: 3.98

Relevant Coursework: Algorithms, Operating Systems, Computer Architecture, Internet Scale Applications, Linear Algebra, Differential Equations, Probability Theory, Complex Analysis

Jun 2017 — **Thomas Jefferson High School for Science and Technology**

Fairfax County Advanced Studies Diploma - GPA: 4.5 (Weighted)

Relevant Coursework: Artificial Intelligence, Parallel Computing, Computer Vision, Quantum Mechanics and Electrodynamics, Advanced Math Techniques for Scientists and Engineers

Skills

Web Application Development:	JavaScript, CSS3, HTML, Django, AWS EC2, GCP, GKE
Programming:	C++17, C, R, Python, Java, x86 Assembly
Version Control and Build Systems:	git, CMake, GNU Make
Linux & System Administration:	nginx, Salt, Docker, Kerberos, KVM, Bash, GPG

Projects

Console-based video viewer (Jun 2018)

Created a console-based video display for use without an X server, typically over SSH. Used `libav` to read video frames, and displayed them using ANSI color escape sequences in supported terminals.

Multi-threaded Wikipedia indexer & Wikipedia game solver (Jan 2018)

Used with mutexes, condition variables, and atomic variables to create fast, synchronized multi-threaded code. Wikipedia graph searching is done using parallelized DFS, and HTML parsing is done using C++ regular expressions.

Persistent High Frequency Audio Removal in Music (Mar 2017)

Used `scipy` and `numpy` to run a DFT on many samples in audio files to find and remove persistent frequencies greater than 12kHz, common in studio recordings from the early 2000s.