James Houghton

Contact Information

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Experience

Jun 2019 - Aug 2019 — Software Engineering Intern at Google, LLC.
Actions on Google Developer Platform
My goal was to decrease user-perceived latency as much as possible. Designed and created the streaming responses feature, allowing third-party applications to send responses in parts. Made significant improvements to overall performance, reducing overall system latency by about 25%. Achieved using both static and dynamic analysis, working in C++11.

Jun 2018 - Sep 2018 — Junior Software Consultant 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.

Education

May 2020 — **University of Virginia** - B.S. in Computer Science, B.A. in Mathematics - GPA: 3.88
Relevant Coursework: Algorithms, Operating Systems, Learning Theory, Statistical Machine Learning, Computer Architecture, Internet Scale Applications, 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, PHP, Django, CSS3, HTML, EC2, GCP, GKE
Programming:	C++17, C, R, Python, Java, x86 Assembly
Version Control and Build Systems:	git, CMake, GNU Make, Perforce
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 BFS, 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.