

GEORGE B HAFF

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Pittsburgh PA

OBJECTIVE

To obtain a position engaging my intellect and utilizing my skills, enabling me to produce and improve upon cutting edge technology, preferably within bicycle commuting range and/or remote.

SKILLSETS

Languages: Python, SQL, Ruby, Java, C/C++, JavaScript/Node.js, SML, Matlab, LISP, PHP, Perl, bash/Shell Scripting, VB, Alpha Assembly, COBOL, OpenGL, proprietary DSLs

Tools: NumPy/SciPy/pandas, MySQL/PostgreSQL, Git/Mercurial/SVN, Elastic Stack, Docker, Nginx, Apache httpd/Tomcat, AWS S3/EC2, GCP/App Engine, Wireshark, Emacs/vi/Eclipse, \LaTeX , Photoshop/GIMP/mspaint

Environments: RHEL/Ubuntu, macOS/BSD, Android, cygwin/WSL

PROFESSIONAL EXPERIENCE

Carnegie Mellon University - Delphi Group

June 2020 - Present

Senior Software Engineer

Pittsburgh PA

As part of the Delphi Research Group, helped advance data-driven epidemic tracking and forecasting, especially relating to COVID-19. Discovered and addressed inefficiencies of DB and API runtime performance. Organized (on a multibillion-row database) design of, validation of, and migration to a streamlined and adaptable schema, resulting in better client experience and resource usage. Optimized periodic routines with techniques like batching, parallelism, caching, and redundant code elimination. Verified and maintained correctness of data pipeline processes, performing repairs in-place while maintaining data ingestion jobs and serving client requests. Participated in group software development practices, including unit testing, continuous integration, and code review. Led technical projects. Guided team members and mentored student interns. Found and enumerated code issues and potential improvements for other staff to work on.

Carnegie Mellon University - Locus Lab

January 2017 - April 2021

Software Engineer / Research Programmer

Pittsburgh PA

Developed software applying AI and ML techniques to power grid systems data to identify problematic, malicious, or other anomalous conditions. Produced meaningful analysis and visualization of such data including derived features and detected events. Corresponded with governmental organizations, individuals, and contractors to ensure safe and secure delivery of aforementioned data and analysis as well as telemetry, topology, configuration, and other associated metadata. Assisted CMU Computer Science graduate students (typically PhD candidates) with some of their more complicated programming tasks. Created and executed IRB-approved experimental protocols for user-based studies, involving technical constructions for presentation to subjects, collection of data, and later analysis.

Google Inc.

September 2013 - January 2016

Site Reliability Engineer / Software Engineer (SWE/SRE)

Pittsburgh PA

Worked as a member of the Site Reliability Engineering team for Hardware Operations. Supported critical systems for the datacenters behind one of the world's largest service and content providers. Conducted complex troubleshooting and performance analyses. Improved reliability, availability, resiliency, scalability, and quality through process automation and capacity planning. Designed tools for quicker and easier problem detection and response. Developed measurements and signals for more precise and accurate monitoring and alerting. Collaborated with development teams to add features and with customers to create (and negotiate) policy and SLAs. Deployed new releases and other changes to production systems.

Carnegie Mellon University - Computing Services

November 2008 - August 2013

*Network Systems/Software Engineer**Pittsburgh PA*

Managed and monitored thousands of infrastructure and tens of thousands of end-user devices on the campus network. Wrote software to interface with Cisco switches and routers, and multiple vendors' 802.11 wireless access points. Programmatically measured usage and determined presence of actors on the network, and enforced policies based on that data; built a RESTful, distributed information collection and retrieval system to accomplish these aims. Integrated COTS and OSS products for DNS, DHCP, RADIUS, and other fundamental network services.

Carnegie Mellon University - RADAR Project

August 2006 - November 2008

*Software Engineer**Pittsburgh PA*

Contributed to one of the most successful sub-projects on a \$200 million DARPA PAL program. Developed technology that automatically adapts to users' input and actions. This involved applying machine learning techniques to email and web-based form systems, producing an assistive application that reduces data entry and increases speed and accuracy. Employed Agile methodologies to augment group development effectiveness, involving automated testing cycles. Redesigned and rewrote an AJAX front-end for the aforementioned system, using an MVC Pattern.

EDUCATION

Carnegie Mellon University, Pittsburgh PA

Bachelor of Science degree in Mathematics, with Discrete Math and Logic concentration

Additional Major in Computer Science

Relevant Coursework

Software Engineering	Mobile and Pervasive Computing Services
Algorithm Design and Analysis	Formal Languages, Automata and Computation
Controversies in the History of Computing	Computer Science in the Community
Computer Networks	Artificial Intelligence
Recursion and Hierarchies	Algebraic Structures
Graph Theory	Combinatorial Analysis
Calculus in 3D	Linear Algebra
Databases	

PERSONAL ACHIEVEMENTS

Trained two of my cats to jump through hoops

Never owned a Facebook account

Taught myself to downhill ski backwards, and to execute multiple linked 360° standing spins (in either direction) while in motion

Can successfully perform many songs on Rock Band pro drums at expert difficulty

Singlehandedly completed Portal 2 multiplayer mode when the Sony Playstation Network was down for a month in 2011 (well... two-handedly, using separate controllers)

Captain of Mathletes & President of Computer Club

Glen Cove High School, Glen Cove NY