

GEORGE ENGELBRECHT

3028 Josephine St.
Denver, CO 80205
engelbr@gmail.com

SKILLS

Present Focus

Software lead on a signal propagation toolkit, the “Propagation Modeling Website” currently in use by U.S. Government agencies including the Joint Warfare Analysis Center, First IO Command of the Army, the National Security Agency, and the National Weather Service. Instrumental in development of an HTML\CSS\Javascript front and back end. The product utilizes a multiprocessing service architecture to schedule many thousand signal propagation predictions, and allow users to quickly and easily query produced analyses. This system is an order of magnitude more efficient than the system it replaced. My role in the PMW project requires daily coordination of a full-time team of at least five engineers, programming, code review, scrum\agile workflow, and sponsor communication. A Secret-level federal security clearance is held and maintained.

Programming Languages

Knowledge of high and low-level programming languages compiled and scripted, both functional and imperative. Skill with data structures, algorithms, Big-O notation, BNF forms, regular expressions, compiler design, parsing, and lexical analysis. Developed a Python → C compiler. My knowledge of computer science fundamentals allows me to quickly understand and become proficient in new languages.

Computer Engineering

In-depth knowledge of the internal workings of computers, including CPU, RAM, Disk, RISC\CISC, opcodes, assembly language, scheduling, and interrupts. Wrote a Linux kernel module to take time lapse video from Logitech C310 camera using a RTOS-oriented custom Linux embedded system. Deadlines and performance guarantees were crucial in the operation of this project. Foundational understanding of the hardware\software interface allows me insight to make sound engineering considerations when producing higher level software.

Linux Systems Development

GNU\Linux has been my primary operating system for personal and professional endeavours for ten years. Experience managing boot sequence, init levels, file systems, RAID, configuration files, permissions, bash scripting, backup, and daemons. Five years administering critical infrastructure for a laboratory environment of 80+ users (storage, processing, shell access etc). Experience configuring and managing large file systems (20TB+), multi processing, load balancing, and more. Management of a private git server and internal website as a repository for code developed within the Institute.

Miscellaneous and Personal Interests

Numerical Analysis, Linear Algebra, Cryptography, Chaotic Dynamics, C, Python, Bash, Git, ASP.NET, C#, operating systems, German, Software Defined Radio, audio codecs, travel, fermented food, the outdoors, doggies.

EMPLOYMENT

Computer Engineer,

United States Department of Commerce
Institute for Telecommunication Sciences
Boulder, CO
2008 to Present

Independent Contractor,

Various CS\Programming
Point-of-Sale admin, tutoring, etc.
2004-2007

EDUCATION

University of Colorado Boulder

B.S. Computer Science, 2009

University of Colorado Boulder

Center for Advanced Engineering
M.S. credits in progress