Chaim Halbert

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GOALS

- Backend, full-stack, cloud, or embedded systems engineering
- Protect privacy, empower the customer

SKILLS

Coding: More than 20 years of experience; first website at age 11. Recent experience in *Go, C#, JavaScript/Node.js, TypeScript, Java, Python, MySQL, bash, zsh, ash and dash;* less recent work in *Perl, PHP, Ruby, Visual Basic .Net, ladder logic, PLC structured text, LISP.* Education and personal project experience in *most of these and also C, C++, Objective-C, Swift, awk, Scheme, Matlab/Octave, Verilog.* Can write parallel and concurrent code. Creates *parsers, compilers and interpreters* for new mini-languages. >50 languages.

Web technologies: Full stack web and cloud development using *GCP and AWS; MySQL, NoSQL, React, Angular, jQuery, Webpack, npm/yarn, Docker.*

Team process and systems engineering: Designs systems and procedures for the problem and the team, some of which have been battle-tested for six years and are still going strong.

Security and privacy: Catches potential attack vectors at code review. Protects coworkers' and customers' privacy as a matter of deep personal conviction to "do no harm," while allowing the power and flexibility to get the job done, and done well.

Algorithms and Data Structures: *MaxMSP music synthesis and analysis, robot control, machine learning, OCR, pathfinding, 3D graphics and raytracing, operating systems*

Continuous Integration Testing: *Jenkins, TravisCI, CircleCI*

Other: Uses Arch Linux as daily driver. This resume was written in vim using Markdown and rendered with a Makefile.

WORK EXPERIENCE

Cloud Software Engineer, Evernote (June 2016 - February 2023; Redwood City, CA four years; then remote in Phoenix, AZ)

Re-architected and migrated evernote.com from PHP with AWS to Go with Google App Engine My system design has been in production for six years so far. Recursive component template system; 26-language localization system; CMS integration for non-programmer edits to site; tooling for deploy, preview, unit test, and code quality; query tools to answer frequent questions, like "What URLs do we serve?" "What assets are unused?" *Google Cloud Platform, AWS, Ubuntu, Debian and Alpine Linux, Docker, git, Go/Golang, C#, Perl, PHP, Java, bash, dash, zsh, Python, MySQL, NoSQL, JavaScript/Node.js, Jenkins CI, webpack, React, yarn/npm, SASS, awk, grep, sed, jq*

Content Delivery Network (CDN): For images in Iterable emails. *Google Cloud Storage*

Browser-based note editor and checkout flow: *Typescript, React, Java*

Google Cloud Platform: load distribution, scaling, hosting, URL routing and event routing. *App Engine, Cloud Functions, Cloud Storage, Pub/Sub, StackDriver, BigQuery, KMS secrets management, HAProxy*

Communication: *Slack (+ API), Atlassian JIRA and Confluence, BitBucket, DataDog, PagerDuty*

Software Engineer, Coupa Software (May 2015 – January 2016; San Mateo, CA)

Optimized RSpec test harness to work 30% faster; in-browser integration tests and unit tests; cooperated via AGILE with hundreds of developers using GitHub and Atlassian JIRA. *Ruby on Rails, RSpec, MySQL and migrations, Turnip unit tests, Jenkins, bash, JIRA*

Software Engineer Intern, Rustici Software (June 2014 - August 2014; Nashville, TN)

Created Python client library for TinCan API (xAPI 2.0) and created a JSON object verifier and recognizer using JSON Schema and Node.js/JavaScript. Worked on five-person team using GitHub.

Industrial Controls Engineer, Bridgestone (May 2012 - December 2012; Nashville, TN)

Designed fail-safes, safety and machine control systems. *Embedded systems, RTOS, electrical schematics, AutoCAD Electrical (incl. plugin development in C# .Net, Visual Basic .Net, and AutoLISP), CoDeSys, RSLogix, PLC, structured text a.k.a. IEC 61131-3, ladder logic*

Computer Programmer Intern, Oak Ridge National Laboratory Physics Division (June 2010 - August 2010; Oak Ridge, TN)

Modernized a browser-based experiment log system. *PHP, JavaScript, MySQL, TinyMCE, ssh, vim, Red Hat Linux*

NOTABLE PERSONAL AND SCHOOL PROJECTS

github.com/chaimleib/intervaltree, 2014 onward. Modify and query intervals in logarithmic time in pure Python 2/3. This is the industry reference implementation of interval trees in Python, cited in numerous academic research papers for genome research, computer vision applications, etc. *Python, data structures, open source, GitHub*

github.com/chaimleib/dotfiles, 2014 onward. Portable, multi-OS environment setup scripts and automatic installers. *bash, dash, zsh, busybox, Linux (Ubuntu, Debian, Mint, Arch, Alpine, Red Hat), POSIX, Solaris, CentOS, macOS, MinGW, vim/neovim script, Language Server Protocol*

github.com/chaimleib/rpn, 2023 onward. Calculator project to teach compiler tools. *C, flex, bison, parsers, compilers, interpreters, CircleCI, SonarCloud*

Pyenv v2.3.14, github.com/pyenv/pyenv February 2023. Added patches for Python's source code, versions 3.6 and 3.5, fixing for the world compilation for modern OSes on x86_64 and Apple M1 processors. *C, patchfiles, GitHub, pyenv, Python, open-source*

Completed Linux From Scratch twice, in 2006 and 2021 (https://www.linuxfromscratch.org/lfs/). Compiled and configured a complete OS from C/C++ source code. *Linux, OS, boot sequence, bash, Makefile, X11*

chaimleib.com personal website and jQuery audio player (zichronos), 2014 onward. *TLS/HTTPS, Ruby, JavaScript, jQuery, React, Jekyll, GitHub Pages, bash, SCSS*

USB Nintendo 64 Cartridge reader, 2014. Allows backups of N64 games to the computer using Atmega32u4 (Teensy 1.0). *Embedded systems, C, Atmel microcontrollers, USB protocol, Linux device development*

2-axis gimballed spotlight with IR camera target tracker, UC Berkeley EECS 149 Intro to Embedded Systems, 2014. *Embedded systems, C, Python, FSM program architecture, Raspberry Pi, Bluetooth, Nintendo Wii controller, RS485 serial servos*

Handwritten digit recognizer, Coursera.com Machine Learning, August 2012 with Prof. Andrew Ng. *Octave (open-source clone of Matlab), computer vision, directed machine learning, matrix algebra*

Lua-like interpreter, parser generator and bytecode compiler, UC Berkeley CS 164 Compilers, 2010. *Python 2, compilers, parsers, interpreters, vimscript, vim syntax highlighting*

EDUCATION

University of California, Berkeley – B.S. program in Electrical Engineering and Computer Science (August 2008 - March 2014)

Projects were completed in *Python, C, C++, Java, JavaScript, GNU Makefile, Matlab, Scheme, Verilog, and Latex.* Courses covered *physics, calculus, matrix algebra, recursive data structures and algorithms, AI, computer graphics, compilers, embedded systems, DSP, FPGAs, analog and digital circuits.*