
RYAN EBERHARDT

ryan@reberhardt.com

http://reberhardt.com

SKILLS

Software: Python, Java, Javascript, AngularJS, React, Sass, C++, Cuda C++, OpenMP, PHP, MySQL, SQLite, PostgreSQL, Redis, Git, Mercurial, Matlab, LaTeX

Systems administration: Ubuntu, CentOS/RHEL, Amazon AWS, Google Cloud Platform, Xen, Docker, Apache, Nginx, BIND, Dovecot, Postfix, LDAP

EDUCATION

STANFORD UNIVERSITY **EXPECTED JUNE 2018**
Pursuing BS in Computer Science.

WILLIAM RAINEY HARPER COLLEGE **MAY 2016**
Associate of Science. GPA: 4.0/4.0

ILLINOIS MATHEMATICS AND SCIENCE ACADEMY **2011-2014**
Received diploma.

SELECTED EXPERIENCE

SOFTWARE DEVELOPMENT INTERN, KHAN ACADEMY **2016**

- Worked to revamp an A/B testing framework using Python, Google App Engine, and BigQuery.
- Developed an end-to-end test framework that runs Selenium tests in parallel and provides network logs and a video of tests running when tests fail (see Beehive below).
- Extended the publishing system to support publishing localized content to specific regions.

COMPUTATIONAL SCIENCE RESEARCH INTERN, SANDIA NATIONAL LABORATORIES **2015**

- Researched optimization of high-performance sparse linear algebra kernels for CPUs, GPUs, and Xeon Phi accelerators.
- Developed a block sparse matrix-vector kernel outperforming the comparable algorithms in Intel Math Kernel Library (MKL) by 3x and Nvidia cuSPARSE by 4x. Research published in IPDPSW '16 proceedings.
- Contributed to development on the Kokkos project, a parallel computing platform and programming model that supports x86, ARM, GPUs, APUs, Blue Gene/Q, and others via OpenMP, CUDA, Pthreads, and other backends.

COFOUNDER & LEAD BACKEND DEVELOPER, NAVIER INC. **2013-2015**

- Created a platform enabling web developers to interact with consumers to improve prototype versions of apps.
- Designed distributed, secure infrastructure with Xen and Docker to host users' applications.
- Consulted for JARST LLC, contributing to development of an encrypted peer-to-peer messaging service with end-to-end elliptic-curve cryptography written in Go and AngularJS.
- Consulted for the Chicago Sun-Times and Congressman Jared Polis, developing secure Bitcoin payment systems.

SELECTED PROJECTS

BEEHIVE

An integration testing platform written in Python and Java that runs Selenium tests in parallel in headless Docker containers. Captures network and console logs and records a video of the browser running the test to help debug failing tests.

SOFA

A Python micro-framework that uses a unique declarative style to quickly create flexible REST API endpoints. Also includes a code generator that produces client libraries (currently generates an AngularJS client).

MUSE

A procedural music generator that composes music with algorithmically generated chord progressions, rhythms, and melodies. Produces music with varying tempo, feel (straight vs swing), and instrumentation.