David Penn Zmick

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Education

B.S. in Computer Science, Minor in Mathematics — Graduation: May 2016
University of Illinois at Urbana-Champaign — GPA: 3.62
Senior Thesis: Macros for straightforward parallelism in Clojure

Work Experience

Software Developer — Jump Trading — January 2016 – Present

- HPC Infrastructure: Led team of 7+ working on I/O systems, historical market data storage
- AI/ML Research: Created central team

ExtremeBlue Technical Intern — IBM — Summer 2015

- Implement at–rest data encryption for IBM Connections to meet changing data security needs of IBM's customers
- Avoid trading collaboration features (collab. document editing) for security
- Use **NodeJS** to develop an encrypting file service for the Connections cloud
- Notable Libraries: **Mocha**, **Q**, **Restify**

Course Assistant — CS 241: Systems Programming — August 2014 – May 2016

- Taught **Linux** system concepts in discussion sections
- Helped students with **C** programming language in office hours
- Created new parallelism, interprocess communication, and high—performance, event driven networking assignments.

Software Development Intern — BP High Performance Computing Team — Summer 2014

- Demonstrated feasibility of **HDF5** for storage of seismic data
- Implemented a variety of **C MPI** programs to understand performance impacts of various data storage schemes
- Worked with large (terabyte) datasets on a **Linux** cluster

Systems Administration Intern — BP High Performance Computing Team — Summer 2013

- Performed systems administration tasks for 5500 node **Linux** cluster
- Evaluated software options for internal data warehousing solution
- Deployed **Logstash** + **elasticsearch** + **Kibana** system monitoring tool

Researcher — National Center for Supercomputing Applications — August 2012 – April 2013

- Explored how different types of information move through the Twitter network
- Created data visualizations using **Python** and **R**
- Other Technology: **MongoDB**, **Ruby**

Notable Side Projects

Othello Machine Learning

- Train small nets to play Othello
- Produced highly optimized / vectorized Othello bitboard engine for simulations

Software Support for RPi Synthesizer Project

- Develped low-latency **Rust** thread-pools, queues, etc
- Created properly-patched and configured OS images

Eurorack synthesizer

- Various hardware/software generative music experiments; controlling hardware synthethesizer from software