

# BERNARD KIM

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## EDUCATION

### UNIVERSITY OF WASHINGTON

*B.S. in Computer Science and Engineering*

*Seattle, Washington*

*Fall 2014 - Spring 2018*

- Coursework: [Operating Systems](#) [Embedded Systems](#) [Distributed Systems](#) [Computer Security](#)  
[Computer Networks](#) [Compiler Construction](#) [Machine Learning](#) [Data Management](#)

## PROJECTS

**xk Operating System:** Built a UNIX-like operating system from the base code of [xv6](#). Implemented a handful of system calls, made the operating system capable of running multiple processes, and add a relatively full-featured virtual memory system. [C](#)

**KV Store:** Built a highly available, scalable, fault tolerant key-value store. Implemented an at-most-once RPC protocol, utilized the multi-Paxos algorithm for system replication, and partitioned the key set to improve performance. [Java](#)

**MiniJava Compiler:** Built a compiler for the [MiniJava](#) programming language. Implemented the scanning, parsing, semantic checking, and code generation phase utilizing the JFlex/CUP tools and generating x86 assembly code. [Java](#)

**PTrade:** Developed a web application for paper trading. Built a REST API in Golang to handle user transactions stored in a MySQL database. Client-side built using React.js and Material-UI for a responsive, minimalist UI. Link: <https://p-trade.herokuapp.com>. [Golang](#) [React.js](#) [MySQL](#)

## RESEARCH

**xk Microkernel:** Worked on migrating the virtual memory system from the kernel into user level space. Continuing off the xk OS project, our team added support for system call redirection from the kernel to a libOS. Physical Memory was statically partitioned for a predefined number of libOS instances. [C](#)

## SKILLS

### Languages and Technologies:

- [Java](#) [C](#) [Python](#) [Golang](#) [JavaScript](#) [React.js](#) [SQL](#) [Git](#) [Linux](#)