Kaj Grant-Mathiasen

TECHNICAL SKILLS

Languages

- C/C++
- Python
- SQL
- JavaScript
- HTML/CSS

Software

- Jasmine, Jest, and JUnit testing
- Node.js, React, and Webpack
- Maven and Jenkins build tools
- Prometheus and Grafana logging
- Git and Gerrit version control

Systems + Design

- Knowledge of PCOIP and large-scale datacenter technologies
- Familiar with microservices architecture
- Cuda & multi-threaded execution
- Linux and Windows operating systems

WORK EXPERIENCE

Agile Developer Co-Op — **May 2022 to Dec 2022**
SAP Canada Inc. — **Vancouver, BC**

- Assigned to the core infrastructure team involved with development, maintenance, and on-call support
- Responded to 80+ concurrent Jira tickets involving new features or fixes to existing systems
- Conducted code reviews and knowledge transfer sessions to improve existing practices and code quality
- Collaborated with senior engineers to implement a cache resiliency system to ensure >99% uptime
- Created and maintained several automated testing suites to achieve >95% code coverage
- Tested proposed changes in Jenkins voter system, local Docker and Kubernetes cloud environments

Systems Engineer Co-Op — **Jan 2020 to Sep 2020**
Sony Pictures Imageworks — **Vancouver, BC**

- Initiated 5+ projects in C, Python and JavaScript to assist with production and senior engineer workflows
- Resolved 200+ tickets relating to performance or configuration issues on production level Linux machines
- Created a custom task management system using a SQL-based database and a custom API client
- Deployed several emergency projects for the transition of 800+ employees to a work-from-home workflow

PROJECTS

Engineering Capstone Project: Chairable — **May 2023 to Dec 2023**

- Developed an attachment for office chairs utilizing a spherical wheel to enable powered movement
- Led a team of 5 students to iteratively create a proof-of-concept and final engineering prototype
- Implemented a fully enclosed electrical circuit with 14+ motor control, logic, and safety elements
- Devised a mechanical system with machined steel and 3D printed materials to control 2200W motor

Hardware Accelerated Guitar Tuner — **Jan 2023 to Mar 2023**

- Designed a custom ARM based architecture using the Xilinx Zedboard FPGA for a guitar tuner program
- Interfaced 9+ Audio Codecs, FFT blocks, GPIO blocks, and VGA controllers with C-based software
- Created an optimized hardware block in VHDL to perform the Harmonic Product Spectrum calculation

Homelab Server — **Jan 2022 to Mar 2022**

- Launched a VMware ESXi hypervisor server to explore 10+ personal projects and experimental softwares
- Implemented a Kemp Load Balancer with Cloudflare DNS to securely expose public facing resources
- Optimized GPU clocks and fan curves to achieve a 38% increase in cryptocurrency mining profits
- Utilized a Google Cloud VM instance to securely proxy custom internal game servers with <5ms latency

EDUCATION

BASc Engineering Science – Computer Engineering (3.18 GPA) — **Sep 2018 to Dec 2023**
Simon Fraser University — **Burnaby, BC**