Joshua Lin

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Education

University of British Columbia Expected: December 2024

BSc In Computer Science

- Relevant Courses: Applied Machine Learning, Computer Vision, Computer Graphics, Relational Databases, Algorithms and Data Structures, Computer Hardware and Operating Systems, Internet Computing, Software Engineering.

EXPERIENCE

Amazon May 2023 - Aug 2023

Software Development Engineer Intern

- Developed and deployed a Java-based internal tool that retrieves and analyzes key buyer habits and past interactions, providing personalized product recommendations.
- Uplifted the core experience of **40 million** users on Amazon's mobile app by elevating the Your Orders Carousel through the implementation of weblabs that showcase buyer past interactions.

SAP Sept 2022 - Dec 2022

Software Developer Intern

- Developed Grafana and Prometheus monitoring tools in Kubernetes clusters for an asynchronous task service (ATS) and distributed job manager (DJM).
- Optimized performance by dynamically adjusting cluster nodes and pod deployment for ATS and DJM, resulting in a **30%** decrease in task execution time and a **20%** reduction in timeout jobs.
- Developed official and testing API endpoints for the Asynchronous Task Service and the Distributed Job Manager, while increasing unit testing coverage by **5%**.

Google Summer of Code May 2022 - Aug 2022

Software Engineer Intern

- Developed a command line tool and web application conformance checker to validate SPDX-formatted software bill of materials (SBOM) against the National Telecommunications and Information Administration's (NTIA) elements guidance.
- Integrated the NTIA Conformance Checker as a new feature into the SPDX Online Tool, utilized by industry leaders such as Microsoft, Intel, VMware, and others.

Teaching Assistant (Faculty of Computer Science) May 2022 - Aug 2022

CPSC 210 Software Construction @ UBC

- Designed programming questions in Java and constructed test suites with auto graders in Docker containers.

CPSC 110 Computation, Programs, and Programming @ UBC

- Designed auto-graded conceptual coding questions using Python, HTML, and Docker.

OPEN SOURCE PROJECTS/CONTRIBUTIONS

spdx/ntia-conformance-checker

The NTIA Conformance Checker checks for minimum elements that are "the essential pieces that support basic SBOM functionality and will serve as the foundation for an evolving approach to software transparency".

- Utilized existing SPDX libraries to parse and log errors while checking if the SBOM contains the minimum required data fields: supplier/component name, component version, unique identifiers, dependency relationships, author, and timestamps.
- Created a command line tool using Click that outputs machine-readable JSON containing the missing fields of an SBOM.

spdx/spdx-online-tools

The SPDX online tool provides an easy all-in-one place to upload and parse SPDX documents for validation, comparison, conformance check, conversion and search SPDX license list.

- **Contribution/Pull request**: Added the official NTIA Conformance Checker API endpoint to **tools.spdx.org**, allowing users to upload SBOMs to check for missing data fields.

spdx/tools-python

The tools-python library is a Python library to parse, validate, and create SPDX documents.

- **Contribution/Pull request**: Reimplemented the parse_file function to handle file names that end with spdx or documents with incorrect or unspecified file extensions.

Technical Skills

Languages: Java, Python, JavaScript, TypeScript, C, C++, HTML, CSS

Technologies: MySQL, SQL, Node.js, AWS (CloudWatch, CloudFormation), Docker, Kubernetes, Git, Github, Grafana, REST APIs, JSON, Django, React, Prometheus, Kata, Jenkins, Jira, Software Testing, Data Platforms, Linux, PostgreSQL