

ESHAAN KUNCHUR

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Portfolio: <https://eshaankunchur.netlify.app/> | Github: <https://github.com/EshaanK8> | LinkedIn: <https://www.linkedin.com/in/eshaankunchur/>

EDUCATION

BASc. Software Engineering, University of Ottawa, 2020 - 2024

- Attained a cumulative GPA of 4.0 (A+). Dean's List Recipient, 2020 - Present.

TECHNICAL PROFILE

Languages: Java, Python, JavaScript, C, Swift, HTML/ CSS, Arduino

Tools and Technologies: Linux, Git, React.js, React Native, Next.js, Xcode, Maven, Docker, JUnit, JFrog Artifactory, Firebase, Jenkins, QNX

Project Management: Agile/Scrum, Azure DevOps, JIRA, Confluence, Github Issues

EXPERIENCE

Software Engineer Intern | Cisco - Productivity Tools Development

Summer 2023 (Present) | Ottawa, ON

Project: Algorithm Optimization and System Redesign

- Algorithm:** Developed and implemented a Python-based algorithm capable of recommending the optimal set of tests for validating code changes to router software, while maximizing function coverage and minimizing system resource usage. Analyzed multiple prospective algorithms, evaluated their time and space complexity, and extensively documented the findings. Improved testing efficiency by eliminating redundant test runs and reducing strain on system resources.
- Architectural Redesign:** Revamped the system architecture to integrate the new recommendation algorithm into production code, ensuring the high-quality performance of router software amidst company-wide code changes. Modified Github's recommendation API calling mechanism to enable batch processing, reducing network overhead and server load.
- Results:** Recommendation algorithm increased function coverage by an average of 90% while reducing system resource usage by 80%. Batch processing reduced API response time by 40%, alongside network overhead by 25%.
- Exceeded management expectations by delivering on algorithm optimization and architectural redesign within the first month of onboarding.

Software Engineer Intern | Cisco - Network/Embedded/Application Development

Fall 2022 | Ottawa, ON

- Optimized memory-heavy router software to efficiently store Segment Routing over IPv6 (SRv6) SID information using C.
- Developed parsers to transform sizable router outputs into easily accessible Python dictionaries. Discovered and resolved major bugs involving pre-existing incorrect parsers.
- Designed and implemented tests using Python to assess the performance and functionality of the intermediate system to intermediate system (IS-IS) protocol in accordance with SRv6. Testing included and was not limited to verifying High Availability (HA) systems and SRv6 system-specific elements.

Software Engineer Intern | BlackBerry - Vehicle Software Test Development

Winter 2022 | Ottawa, ON

- Developed a synthetic sensor in C++ and Python to maximize test coverage for the APIs of the IVY Intelligent Vehicle Data Platform.
- Engineered an internal tool to capture data packets sent between running applications in QNX. Enabled enhanced testing capabilities of IVY applications.
- Designed and implemented tests to validate the IVY product on QNX and Linux auto-grade OS, as well as NXP IMX8 and QUALCOMM 8155 hardware platforms.

Software Engineer Intern | Employment and Social Development Canada - Application Development

Summer 2021 | Ottawa, ON

- Conceptualized, implemented and deployed a CSV file validation system using Java, Maven and CrushFTP to remove all validation-related errors from data processing. Leveraged an API to handle file validation and engineered the system to be applied branch-wide in a production-level environment. Deployed code using Jenkins and JFrog Artifactory.
- Improved upon an existing integration endpoint-testing mechanism by automating the process using Java's Jsoup library.
- Built JUnit tests for Java application code within the IntelliJ testing environment and performed integration testing for system pipelines.

PROJECTS

Shelf Life | Android/iOS Mobile App ([Google Play Store](#))

- Developed an app using React Native to aid households track their groceries via UPC/EAN barcode scanning.
- Integrated the OpenFoodFacts API to allow users to access over 1 million international products.
- Leveraged Firebase authentication and Firestore Database to store user information.

Forgetful | iOS Mobile App ([Github](#))

- Built an app using Swift and SQLite, leveraging Apple's MapKit API to ensure users are well-equipped for their destination. Curated a system that provides intelligent trip item suggestions based on the category of the location.
- Using SwiftUI, implemented a complex, yet intuitive map UI to display points of interest and the user's location.
- Centralized the app around composable architecture to better handle state management and composition.

CERTIFICATIONS

- Harvard CS50's Mobile App Development with React Native. Encompassed React, React Native, State Management, React Hooks, Redux, JavaScript ES6+ features (async/await, promises, arrow functions), amongst other topics.
- iOS & Swift - The Complete iOS App Development Bootcamp - Udemy course by Angela Yu