Gowthaman Aravindan

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🎓 Education

National University of Singapore **Expected Dec 2024**

Bachelor of Engineering (Second Major in Computer Science)

Relevant Modules: Data Structures & Algorithms **|** Computer Organization **|** Networks | OOP **|** Machine Learning & AI | Operating Systems

💼 Experience

Google **May 2023 – Aug 2023**

Software Engineer Intern *Singapore*

- Engineered a **Java**-based tool for visualizing front-end UI changes directly within pull requests, resulting in a 20% faster review process.
- Designed custom **Protocol Buffers** and implemented **RPC** services to automate the extraction and display of integration test results.
- Provisioned and maintained an RPC server, monitored performance indicators, and responded to alerts to ensure system reliability.

GovTech (SearchSG) **Aug 2023 – Dec 2023**

Software Engineer Intern *Singapore*

- Integrated configuration options into a no-code website builder using **ReactJS**, enabling customers to select preferred design elements.
- Enhanced backend API security by upgrading authentication middleware to use robust access tokens, strengthening data protection.
- Resolved critical bugs in the search engine's web crawler and indexer, enhancing the user experience and increasing product adoption.
- Designed a stateless login mechanism for an analytics application by leveraging browser cookies to manage and store user sessions.
- Embedded an **AWS Quicksight** dashboard and added interactive elements to allow customers to seamlessly view their metric reports.
- Configured a **PostgreSQL** database using **Prisma**, wrote data retrieval endpoints and deployed them via the **Serverless** architecture.

Zendesk **Jan 2023 – May 2023**

Software Engineer Intern *Singapore*

- Migrated **AWS EC2** development environments to **Kubernetes** clusters, improving resource utilization and reducing infrastructure costs.
- Successfully deployed new features into production, ensuring a stable release by monitoring **Jenkins** smoke tests and Datadog metrics.
- Implemented mutations in a **Java GraphQL** server that routes client requests to upstream microservices and wrote unit tests with **JUnit**.
- Developed a Slack bot using **NodeJS** that uses NLP and supervised learning to predict answers based on an existing FAQ database.

Kinexcs **Nov 2022 – Jan 2023**

Software Engineer Intern *Singapore*

- Created widgets for a mobile application using **Figma** for design and **Flutter** for deployment, boosting the visual appeal of the interface.
- Integrated a Unity game into the application and enabled cross-communication of protocols between game devices using Flutter plugins.
- Designed, restructured, and maintained production **DynamoDB** and **RDS** databases that store user login details and game status data.
- Built Back-End scripts using **Python (Flask)** and leveraged **Docker** containers for end-to-end testing and verification of API endpoints.

PsyFinance **Mar 2022 – Jul 2022**

Software Engineer Intern *Singapore*

- Shipped several UI enhancements using **NextJS**, **TypeScript**, and **TailwindCSS**, enhancing the user experience for over 5000 users.
- Optimized the front-end performance through centralized state management using **Recoil**, reducing page loading times by about 25%.
- Integrated **Amplitude**, an analytics tool for monitoring statistics such as site traffic and transactions, to understand customer behaviors.
- Added **CircleCI**, a CI/CD pipeline to automate the running of Jest unit tests on pull requests to prevent bugs from entering production.
- Created a debugging tool that deserializes JSON data into tables for better visualization, significantly increasing developer productivity.

🖥 Projects

Pathium ⊕ **Jan 2024 – Dec 2024**

Interactive tool to simulate and compare the performance of multiple shortest path algorithms in real-time. Features a customizable graph editor, comprehensive statistics, and multi-algorithm support for deeper understanding of graph theory concepts in computer science students.

</> Technical Skills

Languages: JavaScript, TypeScript, Python, Java, C++, Dart, SQL, Bash, HTML, CSS, Swift

Technologies/Frameworks: NodeJS, ReactJS, MongoDB, ExpressJS, PostgreSQL, Flask, Flutter, Redux, GraphQL, Jenkins

Developer Tools: Git, Linux, Vim, Docker, Kubernetes, Postman, AWS, Heroku, Vercel, Devspace, Prisma, Serverless

👥 Activities

Teaching Assistant **Aug 2021 – March 2022**

- Mentored 50 students over a 12-week robotics design course, introducing them to **C++** and Arduino microcontroller programming.