

# ARUL KUMARAN

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## EDUCATION

### National University of Singapore

Singapore

*Bachelor's in Computer Science, Second Major in Mathematics*

*Expected Graduation: 2026*

- Incoming coursework: Object-Oriented Programming, Data Structures and Algorithms, Web Programming and Applications, Design and Analysis of Algorithms, Discrete Structures.

### Raffles Institution

Singapore

*GCE 'A' Levels*

*Feb 2020 - Dec 2021*

- Emerged Champion in the Singapore Inter-polytechnic Capture-The-Flag competition, a national-level competition with close to 100 participants. Won top 5 placings in other national-level CTF competitions.

## EXPERIENCE

### GovTech Singapore – Software Engineer Intern

*Apr 2024 - Aug 2024*

*Attached to TechPass, an IAM & SSO solution (powered by Microsoft Entra ID) for government services.*

*Singapore*

- Automated bulk account creation via custom API integrated with Microsoft Graph API, reducing manual support tickets by 75% across 10+ government agencies.
- Developed a modular frontend UI using Angular and TypeScript for listing and creating accounts, incorporating features like dynamic search filters, real-time data updates, and pagination to streamline user interactions.
- Enhanced and refactored a Golang-based IAM microservice to support more efficient account privilege management. Designed and implemented a method for assigning role-based privileges via Microsoft Graph API, ensuring that accounts were securely provisioned with appropriate permissions.

### NodeFlair – Software Engineer Intern

*Nov 2023 - Apr 2024*

*NodeFlair is a Series A Startup that offers AI-powered tools for job seekers to streamline the job-seeking process*

*Singapore*

- Enhanced Ruby on Rails backend APIs, adding new features to improve platform capabilities and user experience.
- Enhanced features of a browser extension that autofills job applications using TypeScript, React, and Plasmo, by adding new menus and expanding support for more ATS, like Ashby and Lever.
- Led localization efforts for a multi-language site, expanding international customer base by 20%.
- Implemented analytics tracking and A/B testing to optimise user experience, resulting in a 20% increase in click-through rate.
- Enhanced capabilities of AI-powered resume builder, including adding features to enhance job descriptions using AI.

### Defence, Science and Technology Agency (DSTA) – Research Intern

*Nov 2020 - Dec 2020*

*DSTA manages defense technology and acquisitions in Singapore.*

*Singapore*

- Developed an application using Flask, Python Imaging Library, and PyTesseract to automate the extraction of text from invoices and organize it in a structured manner, resulting in improved efficiency and accuracy in invoice tracking and management.
- Extensively researched and made a report on how DSTA could make use of Internet-of-Things technologies for various use cases, such as management of SAF's assets, like weapons and aircraft fleet.

## PROJECTS

### Learny LMS | Node.js, Next.js, PostgreSQL, Express

- Developed and launched a full-featured Learning Management System (LMS) tailored for freelance tutors, enabling seamless management of course materials, assignments, and student progress, which enhanced overall efficiency.
- Built the backend using Node.js and Express, incorporating key features like a role-based access control system, file permissions for users, assignment submissions tracking, payments processing, and Zoom Cloud Recordings API integration.
- Designed and managed a PostgreSQL database schema using Sequelize ORM, optimizing for scalability and performance, and hosted it on Fly.io for efficient cloud deployment.
- Implemented CI/CD pipelines with GitHub Actions to automate testing and deployment processes. Containerized the application using Docker, enabling consistent environments and reducing deployment complexity.
- Created responsive React components styled with Tailwind, based on Figma designs.
- Achieved adoption by 50+ users.

### Minutes | FastAPI, Next.js

- Developed an intelligent note editor for NUS Hack&Roll 2024 and won "Top 8 Hacks" Prize.
- Implemented features: WYSIWYG editor for notes, AI-generated quizzes based on notes' content, AI-based note inquiries.

## TECHNICAL SKILLS

**Languages:** JavaScript, Python, Golang, Ruby, HTML/CSS, C

**Technologies/Frameworks:** React.js, React Native, Node.js, GraphQL, Ruby on Rails, Django, Flask, Material-UI, TailwindCSS, Docker

**Developer Tools:** Git, VS Code, Visual Studio, Firebase, Supabase, AWS DynamoDB

## MISC

**Work Authorisation:** Singapore Citizen; eligible for the **H-1B1** and **J-1** US visas or **HPI** UK visa with no petition required