

## EDUCATION

**National University of Singapore** | Bachelor of Computing in Computer Science Dec 2027

NUS Scholar | Residential College Entrepreneurship Club President | Notion Campus Leader | Teaching Assistant

## EXPERIENCE

**ByteDance** (BytePlus Platform Engineering) | *TypeScript, Next.js, SEO* Jan. 2026 - Present

*Software Engineering Intern* Singapore

- Shipped **critical features** for [byteplus.com](https://byteplus.com) including **AI Playground 1.0** with configurable menus & Contact Sales form integrated with BFF APIs, directly impacting lead pipeline for **1000+ B2B clients**.
- Re-architected BytePlus.com header from hardcoded TSX to **config-driven i18n system**, reducing deployment time for PMs & reducing iteration cycles from **days → hours**.
- Optimised conversion funnel with **redirects**, navigation structuring, & **backwards-compatible** deployments.

**IBM** (Client Engineering) | *Spring Boot, Node.js, AWS, SQL Server, CrowdStrike, React* Sep. 2025 - Dec. 2025

*Full Stack Developer Intern* Singapore

- **Forward deployed** on-site to co-engineer **B2G** military personnel **RBAC** system with 65k+ DAU.
- Built Lambda-automated event & visitor retry management **batch pipeline** using **Node.js** workers, integrating **FALCON** & **Sequelize** for clearance, triggering notifications using AWS SNS/SES/SQS.
- Implemented **end-to-end** conditional & automated on/offboarding with **real-time cross-system validation** to handle user **role management** across multiple locations, reducing manual data entry by **80%**.

**CloudJoi** (Malaysia's #1 arts ticketing platform) | *Laravel, React Native, Next.js* May. 2025 - Aug. 2025

*Software Engineering Intern - cloudjoi.com* Kuala Lumpur, Malaysia

- Shipped **20+** features & hotfixes under C-Suite supervision for B2C platform, B2B dashboard, & mobile app.
- Contributed towards **AI semantic search & recommendations** via **vector embedding** & clustering metadata.
- Launched [knowledgebase.cloudjoi.com](https://knowledgebase.cloudjoi.com)—dashboard helpdesk for **200+ clients**—**0→1** on **Next.js** with RESTful API.
- Deployed **ticket check-in/out system** for all live CloudJoi shows, enabling organisers to manage attendee status.
- Integrated **password change confirmation** flow with **queue-based email notifications** & Redis caching.

**Strive** (YC S21) | *Python, p5* Jan. 2024 - Jun. 2024

*Software Engineering Intern* Singapore

- Released **25+** suites of interactive **p5.js** & **Python** games explaining math concepts, used by **over 10K** students.

## ENTREPRENEURSHIP & PROJECTS

**DrawMyRoute (AI Running Route Generator)** | *RAG, Next.js, FastAPI, OSRM, Mapbox* Jan. 2026 - Present

- Built an AI route generator for Hack&Roll 2026 that transforms text prompts into GPS-snapped running routes.
- Engineered 5-stage RAG pipeline with vector search & LLM re-ranking to match prompts to 500+ SVG library.
- Implemented multi-variant parallel optimiser testing 16 rotation/scale combinations for optimal road snapping.
- Leveraged OSRM's Dijkstra-based shortest path routing to snap abstract shapes onto real-world road networks.
- Developed FreeType vector font rendering to convert literal text (e.g., "NUS") into runnable GPS coordinates.

**Box-Play (Floorball AI Search)** | *Python, PyTorch, CLIP, FAISS, Streamlit, OpenCV* Dec. 2025 - Present

- Currently in **early R&D phase**, architecting a **multimodal semantic search engine** for floorball match recordings, while pursuing partnerships with the **Singapore Floorball Association** for pilot implementation.
- Implementing **CLIP embeddings** for multimodal semantic search of tactical plays (e.g., "drag shots") without manual tagging, integrated with automated video preprocessing, keyframe extraction, & real-time playback UI.

**Grid Universe AI Agent** | *PyTorch, NumPy, Scikit-learn* Oct. 2025 - Nov. 2025

- Engineered an autonomous agent for a **stochastic grid-world**, across 48 complex test levels.
- Designed a custom CNN architecture (PyTorch) to reconstruct game state from snapshots with **99% accuracy**.
- Developed a lightweight statistical cipher decoder using SVD and NumPy to interpret encrypted objectives.

## TECHNICAL SKILLS

**Languages:** Python, Java, TypeScript, PHP, JavaScript, Swift, C, C++, SQL, HTML, CSS, R, Assembly, Bash

**Frameworks:** React (Native), Node.js, Next.js, Laravel, Spring Boot, Supabase, Flask, Django, FastAPI

**DevOps & Tools:** AWS, SQL Server, MySQL, MongoDB, PostgreSQL, Git, Vim, Xcode, GCP, Docker, IntelliJ, CLI

**Libraries:** Matplotlib, NumPy, pandas, Pygame, Cocos, PIM, p5.js, SwiftUI, Inertia, Three.js, sklearn, PyTorch