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# TAN JIAN JIE

## FULL-STACK DEVELOPER

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### PROFESSIONAL SUMMARY

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**Full-Stack Developer | AI/ML Systems | Software Engineering | Cybersecurity Enthusiast**

Final-year Computer Science student with production deployment experience in RAG systems, building cross-platform applications, and developing secure cloud solutions. Shipped a production RAG chatbot that cut per-question manual PDF search from ~45 minutes to <10 seconds (5.1 s median; page-level citations). Strong problem-solver who thrives in collaborative environments and has independently delivered production-ready solutions.

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### SKILLS

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- **Languages:** Python, C++, HTML/CSS, Dart
- **Frameworks:** React, FastAPI, Flutter (Android/iOS/Windows)
- **AI / RAG:** Semantic search, RAG Systems, Gemini API, NLP, Vector DBs (ChromaDB, Zilliz), Embeddings
- **Cloud & DevOps:** Cloud Logging/Cloud Monitoring, GCP (Cloud Run, Artifact Registry), AWS (S3, Cognito, IAM), Docker, CI/CD, YAML
- **Auth & Data:** Firebase Auth (RBAC), Firestore
- **Tools & OS:** Git/GitHub, Visual Studio, VS Code, WSL, Windows/macOS/Linux

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### PROJECTS

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#### **Sunflower Childcare Group AI Chatbot** – Full-Stack Developer (Intern) – ([project video](#))

Sunflower Childcare Group | May 2025 – Present

- Faced with staff spending ~45 min manually searching PDFs across 38 centers, developed production RAG chatbot as sole developer that cut lookup to <10s with page-level citations and in-app PDF preview (FastAPI, Gemini, dual vector stores).
- Built a cross-platform Flutter app with Firebase Auth RBAC; designed a hybrid vector-store architecture; automated CI/CD to Google Cloud Run.
- Delivered 5.1 s median responses and 100% uptime in testing; led a 25-sprint solo Agile delivery integrating 7+ services end-to-end.

#### **CloudShare Web** – Programmer – ([project video](#))

DigiPen Institute of Technology Singapore | Feb 2025 – Apr 2025

- Architected a serverless cloud-storage SPA (React, AWS S3, Amazon Cognito) with JWT-based auth and short-lived federated credentials.
- Implemented direct browser→S3 uploads using AWS SDK + React Dropzone, removing the need for a custom app server and enforcing per-user path isolation (users/{id}/).
- Built a responsive file manager with folder hierarchy, real-time upload progress, and route-based navigation (React Router).

#### **Witch Way Up** – Programmer – ([project video](#))

DigiPen Institute of Technology Singapore | Sep 2023 – Apr 2024

- Developed custom C++ content browser reducing asset search time by 50%.
- Introduced copy-paste functionality to eliminate repetitive setup; added undo-redo for instant revision.
- Cut design iteration time by ~50%, enabling smoother, more flexible development cycles.

## **Anotter World: The Otter Side** – *Tech Lead / Programmer* - ([project video](#))

DigiPen Institute of Technology Singapore | Sep 2021 – Apr 2022

- Architected robust ECS-based engine from the outset to handle intricate puzzle mechanics.
- Integrated responsive sound system and refined core puzzle logic.
- Streamlined feature integration by ~25%, producing immersive, extensible gameplay experience.

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## EDUCATION

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### **Bachelor of Computer Science in Real-Time Interactive Simulation SIT & DigiPen Institute of Technology**

Singapore | Sep 2020 – Dec 2025 – available for full-time roles from Jan 2026.

- Relevant Modules: C++ programming, data structures, operating systems, software engineering, and machine learning.

### **Diploma in Engineering Informatics, Nanyang Polytechnic**

Singapore | Apr 2014 – Mar 2017

- Key achievements: Distinction in Operating Systems, A's in IT Fundamentals & Project, Data Structures.

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## AWARD AND ACHIEVEMENTS

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- 2024 - Commendation Award and 10-Year Long Service Award for enduring contributions to Singapore Red Cross.
- 2023 - Outstanding Youth-Led Project Award from Singapore Red Cross.
- 2016 - Led a team as Level Designer and Project Manager on an ITE educational project, creating interactive modules for learning that received positive feedback for improving student engagement.

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## WORK EXPERIENCE

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### **Full-stack Developer Intern, Sunflower Childcare Group** | Singapore | May 2025 – Present

- Digitalized 3 critical HR workflows (KPI reviews, appraisals, deployment/promotions) from paper to automated Google Sheets with Apps Script, eliminating manual calculation errors.
- Developed enterprise-wide productivity tools including Gmail signature generator and namecard designer using HTML/CSS and JavaScript, ensuring brand consistency across staff while reducing turnaround from days to minutes.
- Built end-to-end D&D Attendance & Lucky Draw System with NRIC scanning, automated ticket generation, and WhatsApp integration, streamlining event check-ins and automating lucky draw distribution for company-wide events.

### **IT Intern, Metta Welfare Association** | Singapore | Sep 2016 – Dec 2016

- Challenged by outdated IT infrastructure that slowed service delivery, I recommended and implemented targeted hardware and software upgrades, increasing system responsiveness by 60% and enabling staff to support beneficiaries more efficiently.
- Faced with recurring technical disruptions, I troubleshooted and resolved network issues, stabilizing operations and streamlining overall organizational workflows.

### **Level Designer, Project Manager, Institute Of Technical Education College West** | Singapore | Nov 2013 – Jan 2014

- Led the Final Year Project to raise engagement in complex networking concepts, managed a 4-person team to build an interactive educational game and delivered a functional prototype 1 week early.
- Boosted student participation, exceeded educational objectives, earned positive instructor feedback, and received media coverage in [The Straits Times](#), reinforcing the institution's forward-thinking reputation.