CLEMENT FOO SHI YU

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EDUCATION

National University of Singapore (NUS)   **Singpaore**
Bachelor of Computing in Computer Science   Aug 2021 – May 2025
- **GPA**: 4.55 / 5.0 GPA
- **Coursework**: Parallel and Concurrent Computing, Databases, Networks and Distributed Systems, Operating Systems, Software Engineering, Data Structures and Algorithms, Design and Analysis of Algorithms, AI and Machine Learning

SKILLS

Programming: Go, Java, C#, C++, C, Python, JavaScript, HTML, CSS
Back-end: MySQL, PostgreSQL, Redis, RabbitMQ, Kafka, Docker, MongoDB, Firebase
Front-end: Vue, React, Nodejs, Nextjs, Threejs, Tailwind, Unity, Flutter

WORK EXPERIENCE

TikTok   **Singapore**
Live Streaming Backend Intern   May 2024 – Present
- Designed and implemented a scalable system for tracking performance of live content moderation, enabling enforcement of critical service level agreements and facilitating identification of performance bottlenecks through new metrics and logs.
- Addressed challenges of high-traffic environments, handling 200,000+ events per second, by implementing solutions like data aggregation, Redis caching, and distributed computing across 1000+ compute instances to optimize performance and resource usage.
- Implemented strategies for maintaining cache consistency with techniques including synchronization with the database using cron jobs, enhancing the accuracy of the operational metrics.
- Demonstrated resourcefulness and strong communication skills by negotiating with resource owners to scale down usage, successfully provisioning resources for my project and ensuring continuity and performance stability during periods of shortages.

Infr AI   **Singapore**
Full-Stack Intern   May 2023 – Oct 2023
- Developed a project export function by implementing a pipeline architecture using goroutines for concurrent tasks such as download/upload, format conversion, and report generation. Achieved a processing time speedup from 4min to 10s.
- Developed a microservice for converting 3D files to Autodesk's SVF format, involving reverse engineering and automation of the conversion process. Integrated AWS S3 for storage and utilized RabbitMQ as a message queue to enable load balancing and retries. This service enabled server-side file processing, streamlining project workflows for users.

Central Provident Fund (CPF)   **Singapore**
Java Backend Intern   Jan 2024 – Apr 2024
- Modernised codebase by migrating legacy COBOL scripts to a Java Spring Batch framework, significantly enhancing code maintainability and extensibility.
- Collaborated with multiple stakeholders, including the policy department and internal product users, to ensure accurate translation of policy details into business logic and alignment of internal tools with user specifications.
- Conducted extensive testing including system integration and user acceptance tests, designing test cases that mirrored real-world scenarios to ensure software reliability.

PROJECTS

CHAD | link   May 2022 – Aug 2022
- Created an immersive real-time multiplayer game utilizing Unity and C#.
- Designed and implemented a client-server system with custom packet structures using networking protocols like TCP and UDP to facilitate synchronised game-play across clients.
- Utilised optimisations such as multi-threading and object pooling to enhance game performance.

LEADERSHIP AND ACTIVITIES

NUS School of Computing   **Singapore**
Database Systems Teaching Assistant   Aug 2023 – Nov 2023
- Collaborated closely with professors to deliver engaging and informative database systems tutorials.
- Delivered clear responses to questions by distilling complex technical details into digestible explanations, leading to deeper understanding and increased student particiaption.