

Theodore Tio Kok Keat

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Systems-oriented software engineer with hands-on experience building full-stack applications, Unix system software, and graphics engines. Strong foundation in C and C++ developed through 42 Kuala Lumpur's project-based curriculum. Seeking junior software engineering opportunities focused on backend, systems, graphics, or infrastructure development.

PROJECTS

ft_transcendence | TypeScript, Node.js, Fastify, WebSockets, Docker
https://github.com/TCheeMing/ft_transcendence

- Built a full-stack multiplayer Pong platform supporting authentication, account management, and real-time gameplay.
- Designed an authoritative server-side game engine using WebSockets to prevent client-side cheating by validating physics and collisions on the backend.
- Containerized services using Docker and collaborated in a team environment using Git workflows.

webserv | C++
https://github.com/TearDoor/webserv_42

- Written a HTTP/1.1 web server from scratch using C++, implementing request parsing and response generation
- Built a non-blocking, event-driven networking layer using sockets and I/O multiplexing, enabling concurrent handling of multiple client connections.

minirt | C
https://github.com/TearDoor/miniRT_42

- Engineered a 3D ray tracing engine from scratch in C, implementing fundamental computer graphics algorithms without external high-level libraries.
- Developed a custom linear algebra library supporting vector arithmetic and matrix transformations.
- Applied foundational computer graphics concepts including camera projection and recursive ray evaluation.

minishell | C
https://github.com/TearDoor/minishell_42

- Implemented a Unix shell reproducing core Bash behavior, including pipelines, redirections, environment variables, and signal handling.
- Developed process execution using fork, execve, and waitpid, coordinating multiple child processes through pipes and file descriptor management.
- Designed parsing logic to support complex command chaining while preventing descriptor leaks.

EXPERIENCE

Panmetal Marketing
Sales Executive

Dec. 2015 – Present
Shah Alam, Selangor

- **Managed full-cycle sales operations** for a hardware retail business, overseeing everything from initial customer inquiry to final product delivery.
- **Optimized last-mile logistics** by coordinating and executing deliveries, ensuring high customer satisfaction through reliable and timely service.

EDUCATION

42 Kuala Lumpur

Oct. 2023 – Mar. 2026

Core Programme - Competency in Computer Science

Subang Jaya, Selangor

- **Pedagogy:** Completed an intensive project-based curriculum emphasizing systems programming, peer code reviews, and autonomous learning.
- Developed extreme adaptability and "learning how to learn" through a gamified, high-pressure curriculum
- Conducted and received peer evaluations to strengthen code quality and technical communication

SKILLS

Languages : C, C++, Python, Ruby, HTML & CSS, JavaScript, TypeScript

Frameworks & Libraries Node.js, Fastify, React, TailwindCSS

Cloud & DevOps : Docker, Git, Github

Others : WebSockets, REST API