Joshua James

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EDUCATION

Nanyang Technological University, B.Eng. in Electrical and Electronics Engineering, GPA: 4.23 / 5.0 *Aug 2022 - May 2026*

- ASEAN Undergraduate Scholarship Recipient
- **Relevant Coursework:** Data Science and Artificial Intelligence, Data Structures & Algorithms, Microprocessors
- **Member:** Kubernetes Org, HyScale Lab, PINTU (Indonesian Student Organization), NTU Student Union, NTU ICPC Team

TECHNICAL SKILLS

Programming Languages: Go, C, C++, Python, Javascript, Typescript, Bash, Assembly (x86-64, aarm64).
Frameworks & Tools: Docker, Kubernetes, Terraform, Prometheus, Grafana, OpenTelemetry, Github Actions, Jenkins, AWS, GCP, Kafka, RabbitMQ, Nginx, PostgreSQL, MySQL, MongoDB, Firebase, Redis, Django, Flask, React.js, Next.js, Vue, Linux, eBPF.

ACHIEVEMENTS

12th Place International Collegiate Programming Contest Regionals Manila *Dec 2025*
202nd Place Meta Hackercup *Dec 2025*
Speaker | Google Devfest Singapore 2025 | slides *Nov 2025*

- Delivered a technical talk on "Online Judges and Understanding Containers" on container internals.

Indonesian National Olympiad in Informatics | Gold Medalist *Nov 2021*

- Ranked 5th among over 20,000 selected participants in Indonesia.

Candidate Master Codeforces (peak 2005 rated)

EXPERIENCES

Huawei **Singapore**
Algorithm Engineer Intern | Computer Architecture, Compilers, Python, C++, NPU, PyPTO *Jan 2026 - Now*

- Worked on implementing optimizations for machine learning algorithms using the NPU architecture to improve task time and core utilization.
- Identified inefficient ordering of operations causing sequential processing of parallelizable operations and implemented a compiler pass to parallelize arithmetic operations to improve runtime of algorithms (e.g. 10% for GDR) in the CANN ecosystem.

Cloud Native Computing Foundation **Remote**
etcd Contributor & Kubernetes Org Member | Go, Git, Scripting, Distributed Systems, CI/CD *Feb 2025 - Now*

- Focused on etcd CI, testing, and releases.
- Contributor Awards 2025 (https://www.kubernetes.dev/community/awards/2025/).
- Contributions (contribcard.cncf.io/joshjms).

HyScale Lab | NTU **Singapore**
Research Intern | Kubernetes, Go, Python, Serverless Computing *Aug 2025 - Dec 2025*

- Conducted research on optimizing keep-alive mechanisms for instances in cluster management systems to reduce overhead and improve resource utilization.

NTU Student Union | Chairperson of IT Committee *Sep 2024 - Sep 2025*

- Led a team of 15 developers to deliver and maintain internal and student-facing digital platforms.
- Directed DevOps and Backend development for NTUMods, a course planning platform with 2,900+ users.

Desay SV **Singapore**
DevSecOps Intern | Supply Chain Security *Jan 2025 - Jun 2025*

- Designed and implemented an automated pipeline where every library proxied through Artifactory is sent to a custom test platform, executing a series of validation tests for security and compliance.
- Provided 38% faster feedback compared to Jenkins and ensured reliable integration of open-source libraries.

Govtech Procurement Telkom Indonesia **Jakarta, Indonesia**
Backend Engineer Intern *June 2023 - Aug 2023*

- Designed a proof of concept (PoC) to implement zero-trust security across the company's cloud resources.

PROJECTS

joshOS | C | source code

- Funny little hobby operating system.

Lime | C, Linux, Containerization, Isolation | source code

- Created a lightweight rootless container runtime in C for short-lived tasks (e.g. compilation, execution, CI).
- Benchmarks show 1400% faster spin-up time compared to Docker, and 200% faster than RunC.

jjudge | Go, System Design, Cloud Native, Kubernetes | source code

- Implemented a highly available, cloud-native online judge platform with microservices architecture and autoscaling.
- Integrated with Grafana, Prometheus, and Loki for observability.

clanker | Go, Computer Use Agents, Virtual Machines, Linux, eBPF

- Created an observability stack for Computer Use Autonomous Desktop Agents for reliable and transparent execution.
- Implemented eBPF kernel-level monitoring and HTTP proxy for request and response auditing.