Nathan Aldyth Prananta Ginting

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Experience

Software Engineer (Incubation Lab), Intern — **Mercedes-Benz**
January 2026 – Present (To end on July 2026) — **Puchong, Malaysia – Hybrid**

- Secured placement in the Team by architecting an internal "Agent Hub" that orchestrates 9 specialized AI agents to automate enterprise developer workflows

Software Engineer (ML/AI Focus), Contract — **Labelbox, Inc**
February 2025 – September 2025 — **San Francisco, USA – Remote**

- Implemented Redis caching to optimize SQL queries in a Flask-based API, resulting in a 60% reduction in API response times (from 500ms to 200ms), significantly improving user experience during peak usage times
- Refined the AI rating algorithms using more consistent metrics and adding regularization techniques, which improved model consistency by 40% and helped reduce bias.
- Implemented hyperparameter tuning (via Grid Search) and feature selection, resolved over 25 critical AI recognition issues, increasing classification accuracy from 82% to 95%

Software Development Engineer – Site Reliability Engineer, Intern — **Valiram Group**
August 2024 – December 2024 — **Subang Jaya, Malaysia – Onsite**

- Built test automation frameworks in Azure DevOps, reducing manual effort by 70% and accelerating testing cycles by 400%.
- Optimized CI/CD pipelines by implementing automated failure detection, improving pipeline reliability from 75% to 89.5% and reducing average incident response times from 5 minutes to 2 minutes, resulting in faster, more reliable deployments.
- Implemented a hybrid approach using Self-Hosted and Virtual Machine for concurrency, enabling the simultaneous execution of over 800 UI and API tests, reducing overall testing time by 30% and increasing test coverage efficiency

IT Operations Staff, Intern — **Don Bosco Education**
January 2022 – June 2022 — **Medan, Indonesia – Onsite**

- Co-engineered Django CBT platform (ACLs, SSL/TLS) for 400+ concurrent users with 99.9% uptime, reducing manual exam administration by 80%.
- Developed and deployed an intranet platform using PHP and MySQL, facilitating efficient communication and collaboration for 30 active teachers, increasing engagement by 50%.
- Managed Group's websites using on-premises server, ensuring 98% uptime and consistent performances using Zabbix for monitoring.

Education

Bachelor of Software Engineering (Dual Award) - CGPA: 3.67 — **Sunway University – Lancaster University**
April 2025 – April 2027 **(Expected)** — Malaysia

Diploma in Information Technology - CGPA: 3.91 — **Sunway College**
January 2023 – January 2025 **(Graduated)** — Malaysia

Technical Skills and Certifications

Programming : Python, Java, JavaScript, TypeScript, PHP, C#
Databases : MySQL, PostgreSQL, DynamoDB, MSSQL
Frameworks and Libraries : Flask, Spring Boot, Next.js, Nuxt.js, Vue.js, Angular, Laravel, React, Tailwind CSS, ASP.NET Core.
Tools : AWS EC2, Azure DevOps, Azure, Vercel, Git, GitHub, Jira, NPM, System Architecture, System Design

Selected Projects (Clickable Title)

JAngular CLI – Open Source Project

- Spring Boot+Angular starter kit with pre-built auth, migrations, and 15+ API & UI routes, cutting setup by 60%
- Implements a service-oriented architecture with route protection, reducing backend development effort by 40%.
- Achieved 51,000+ downloads, with 9000 in the first 5 hours, demonstrating strong early adoption for development.

Agent Hub (Multi AI-Agents Orchestration with RAG Implemented)

- Engineered a full-stack, enterprise-grade AI orchestration platform using Python (FastAPI), Angular, and Docker, increasing developer productivity by 300% by reducing context switching by over 80%.
- Architected a scalable microservices ecosystem that orchestrates 9 specialized AI agents using Azure OpenAI and LlamaIndex, automating complex workflows across 100+ integrated tools like GitHub, Azure, and Snyk.

Volunteering

Reviewer & Contributor Journal of Open-Source Software (JOSS)
April 2025 – Present

- Conduct peer reviews for research papers under the Computer Science and Mathematics track, specializing in Software Architecture, Infrastructure Engineering, DevOps, and Programming Languages
- Ensure technical correctness, reproducibility, and documentation quality as part of the open science validation pipeline
- Collaborate with editors and authors to uphold high standards in open-source research dissemination

Software Engineer (Apprenticeship) Software Mansion
April 2024 – February 2025

- Refactored critical components to enhance runtime performance, improve maintainability, and reduce build complexity by 40%.
- Facilitated project communications: drafted outreach emails, maintained sponsor relations, and managed coordination with open-source contributors
- Led beta testing efforts wrote test cases, identified critical bugs, and collaborated with QA contributors to ensure stable pre-release builds

Student Ambassador Sunway Student Ambassador
January 2023 - January 2024

- Represented the School of Engineering and Diploma Studies (SDS) during Open Days and public exhibitions, providing educational guidance to prospective students and families
- Volunteered in key institutional events including graduation ceremonies and Canadian curriculum outreach at Sunway International School, promoting international education pathways

Research Contributions (Clickable)

Zonal Graph Quantization: Optimizing Memory-Performance Trade-off in Vector Search
Pre-print, TechRXiv
DOI: 10.36227/techrxiv.176704895.53855035/v1
December 2025.
This cover introduces the development of Zonal-Graph Quantization (ZGQ) which is a hybrid indexing method that can be used to optimize the speed-memory trade-off in HNSW vector search to improve AI's RAG in Vector Databases (GitHub).

The Agent Hub Architecture: A Framework for Specialized Multi-Agent AI Orchestration.
Pre-print, Zenodo
DOI: *10.5281/zenodo.17131426*
September 2025.
Comprehensive analysis of the Agent Hub platform, an enterprise-grade AI orchestration system demonstrating significant advancements in multi-agent systems (MAS), operational resilience, and Large Language Model (LLM) efficiency (GitHub).

On the Practical Instability of Bio-Inspired Continual Learning.
Working paper, Zenodo
DOI*: 10.5281/zenodo.15823901*
July 2025.
Explores instability in synaptic consolidation-based continual learning models. Despite theoretical convergence, the system displays sharp performance collapse or stagnation across all tested configurations. Includes open-source experiments (GitHub).

Holistic Analysis of JAngular: A Potential Full-Stack Framework for Java and Angular.
Pre-print, Zenodo
DOI: *10.5281/zenodo.15334023.*
May 2025.
Conceptual framework for integrating Java (Spring Boot) and Angular into a monolithic full-stack DX-first ecosystem. Features Dockerized scaffolding, Laravel-inspired CLI, and modular architecture for indie and enterprise use (GitHub).

Professional Memberships

IEEE Eta Kappa Nu (IEEE-HKN) – Inducted Member (Top 25% globally)
May 2025 – Present

Journal of Open-Source Software (JOSS) – Reviewer & Contributor,
May 2025 – Present

Certifications and Professional Development

- **Certified Ethical Hacker (CEH)** – *Cisco*, May 2024
- **Google Cloud Certified: Core Infrastructure** – *Google*, June 2024
- **Oracle Cloud Infrastructure 2023 Certified Foundations Associate** – *Oracle*, July 2024
- **Oracle Cloud Infrastructure 2023 AI Certified Foundations Associate** – *Oracle*, July 2024