

Chin Zhie Lun

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SUMMARY

Results-driven Senior Software Engineer with specialized expertise in full-stack web development and machine learning. Extensive experience architecting scalable solutions across industrial automation, data analytics platforms, and computer vision applications, utilizing AWS infrastructure and automation to deliver high-performance systems and streamline deployment processes.

PROFESSIONAL EXPERIENCES

Innowave Tech Pte. Ltd.

Singapore

Project Manager / Senior Software Engineer

Sep 2025 - Present

- Led factory automation project for a major IDM's Southeast Asian facility, architecting a Python-based solution that integrated Advanced Computer Vision for defect detection with real-time data analytics from bonding equipment (Die Bonding, Clip Bonding, Wire Bonding), resulting in an 80% reduction in manual inspection and alarm handling time.
- Directed an AI Agent Research Project for a global semiconductor manufacturer, building a LangChain/RAG-based agent that incorporated real-time MES processing data with quality parameters to train models, reducing root cause analysis time for backend packaging issues.
- Managed external vendor relationships and technical scoping across 3 OSAT partners in Southeast Asia, defining technical requirements for backend/frontend packaging integration while managing project timelines and ensuring alignment with internal roadmaps, successfully delivered 6 projects on schedule.
- Architected an AI-powered marketing intelligence platform on AWS serverless, aggregating field sales data and semiconductor market trends with ML-driven predictive analysis to inform C-suite strategy for entering the advanced packaging market.

Software Engineer

Apr 2025 - Sep 2025

- Engineered backend microservices and MLOps pipelines for customer-facing SaaS products (iWave Autopilot, iWave ZeroDefect), enabling remote equipment monitoring and real-time yield loss prediction. Collaborated with China-based UI/UX teams to redesign dashboards aligned with corporate brand guidelines.
- Partnered with product marketing to translate technical features, including backend reliability, API security, and predictive analytics capabilities into customer-facing value propositions for semiconductor trade shows, directly contributing to new pilot agreements.
- Engaged with early-adopter customers to gather feedback on product features and usability, iterating on platform functionality to address specific semiconductor manufacturing pain points and ensuring product-market fit prior to broader release.

SuDü.AI (A Serious AI Sdn. Bhd)

Kuala Lumpur, Malaysia

Software Engineer

Aug 2024 - Mar 2025

- Contributed to the design and development of a scalable, multi-tenant SaaS Manufacturing Execution System (MES) using Django and React, delivering production scheduling, inventory control, and real-time analytics features that improved operational throughput by 25% across enterprise clients.
- Architected and implemented 15+ high-performance REST APIs, optimized PostgreSQL schemas, and deployed asynchronous task processing with Celery and Redis, while leading CI/CD integration via GitHub Actions and practice Test-Driven Development (TDD) to achieve 99.8% uptime and a 50% faster release cycle.

Zelcos Laboratory

Penang, Malaysia

Software Engineer Intern

Mar 2024 - Aug 2024

- Optimized MRP system to handle 2x higher workload by streamlining database operations and automating background tasks, strengthened system reliability with 12+ production-grade APIs, sustaining 99.95% uptime.

National Instruments (Acquired by Emerson)

Penang, Malaysia

Software Engineer Intern

Aug 2023 - Nov 2023

- Enhanced test automation and infrastructure by contributing Python/C++ scripts to automate Thunderbolt testing workflows, reducing manual effort by 3 person-weeks per cycle.

Fusionex Group

Kuala Lumpur, Malaysia

Software Engineer Intern

Aug 2022 - Nov 2022

EDUCATION

Universiti Sains Malaysia

Penang, Malaysia

Bachelor of Computer Science (Honours)

2021 - 2025

- Dean's List Award Recipient
- Member of Google Developer Student Club USM (GDSC USM)

OUTSTANDING PROJECTS

Manufacturing Planning Management System (MPMS)

A multi-tenant, cloud-native SaaS platform that optimizes manufacturing scheduling using intelligent algorithms and a conversational AI interface

- **Multi-Tenant Architecture:** Built from the ground up with secure data isolation and scalability for multiple business clients within a single managed instance.
- **Scheduling Optimization:** Developed a Genetic Algorithm using the DEAP framework to optimize job allocation and sequencing across industrial machines, significantly improving operational efficiency.
- **Conversational AI with RAG:** Integrated Retrieval-Augmented Generation using Pinecone, LangChain, and GPT-4, enabling natural language interaction and drastically reducing the learning curve.

Sport and Tournament Management System (STMS)

A web application that streamlines sports tournament management with live score tracking, real-time player rankings, and performance analytics

- **Real-Time Tournament Engine:** Designed a flexible system supporting various formats with live scoring, registration, and leaderboards powered by Redis and Django Channels over WebSockets.
- **Elo Rating System:** Applied a custom Elo algorithm integrated with Celery task queues to asynchronously update player rankings without blocking the main application.
- **AI Performance Forecasting:** Built a predictive model using Scikit-learn and Pandas, achieving ~78% accuracy in match outcome predictions, exposed via RESTful API endpoints.

LEADERSHIP & COMMUNITY INVOLVEMENT

- **Hackathon Mentor** - KitaHack (Google Developer Groups Community) 2026
- **Hackathon Mentor** - MMU CodeNexion 2025
- **Hackathon Judge and Mentor** - UMHackathon 2025
- **Hackathon Mentor** - USM Varsity Hackathon 2024

CERTIFICATION & AWARDS

- Career Essentials in Generative AI by Microsoft and LinkedIn (April 2025)
- Data Science Methodology - IBM (May 2022)
- Google IT Support Specialization Certificate - Google (Jul 2021)
- Communication Skills for Engineers Specialization Certificate, Rice University (Nov 2020)
- Monash University Coding League - Finalist (2022)
- Monash University Hackathon - 2nd Runner Up (2021)

SKILLS

- Programming Languages: Python, JavaScript/TypeScript, C++, Java, SQL, Go
- Backend & API: Django, Node.js, Laravel, GraphQL, gRPC, REST, WebSockets
- Frontend: React, Vue.js, Next.js, Tailwind CSS, Redux
- Data Engineering & Streaming: Apache Kafka, Apache Airflow, Apache Spark, RabbitMQ, Elasticsearch
- Databases: PostgreSQL, MySQL, Redis, MongoDB, Neo4j, Pinecone, Snowflake, BigQuery
- DevOps & Cloud: AWS, Azure, Docker, Kubernetes, Terraform, GitHub Actions (CI/CD), Jenkins, Prometheus/Grafana
- AI/ML: LangChain, NLP, OpenCV, YOLOv5, Scikit-learn, Vector Databases