

# Loh Zheung Yik (Zack)

Portfolio site: <https://ZackLoh.dev>

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I am a software engineer with experience building full-stack applications, cloud-based systems, and AI-powered solutions. I have worked on diverse projects ranging from enterprise PHP systems to mobile apps built with Flutter, React Native, Spring Boot, and Django. I also deployed applications on AWS and Google Cloud.

## Work Experiences

- **Research Assistant – UTM Johor Bahru – 2022 to 2026**
  - Built **transformer-based machine learning (ML) models** with custom architectures using **PyTorch**, producing **21.95% more valid mutants and a 4.5-point higher CHRF score** than the existing CodeT5 transformer.
  - Designed **ML pipelines**, including **data preprocessing** (Pandas, data abstraction, dataset tokenization), **model training** (hyperparameter tuning, pre-training, fine-tuning, **early overfitting prevention**), and **evaluation (Matplotlib, model comparison)**.
  - Key contributor to securing research funding by helping develop and write a successful **FRGS** grant proposal (**RM 116,300**).
  - Documented technical findings by writing Scopus-indexed research papers for conferences and journals (Q2).
  - Assisted collaborators by deploying a Dengue Tracking System on **AWS (EC2, S3, RDS)** after self-learning AWS cloud technologies within 3 weeks.
- **Software Developer – Xeersoft Sdn. Bhd. – 2021 to 2022**
  - Enhanced and extended modules for inventory, accounting, and POS systems based on client requirements, **working within a large existing PHP codebase with complex MySQL relationships**.
  - Developed an Excel transaction import feature that automated manual data entry, **reducing client processing time by 80%**.
- **Intern Developer – Xantec Solution Sdn. Bhd. – 2020 to 2021**
  - Ensured responsive and consistent UI for WordPress websites across different screen sizes and orientations using Bootstrap and CSS media queries.

- Integrated the **Bulk360 SMS API** to implement OTP verification features for a clinic booking system (Taman U Dental Surgery Sdn. Bhd.).
- Integrated the **mPDF library** to allow administrators to generate PDFs from customer-submitted forms.

## Educational Background

- **PhD Candidate – UTM Johor Bahru – 2022 to 2026**
  - Title: Transformer-Based Machine Learning Model for Producing Prioritized Mutants for Effective and Affordable Mutation Testing
- **Bachelor Degree of Software Engineering – UTM Johor Bahru – 2017 to 2021**
  - CGPA: 3.98/4.00

## Skills

- **Programming Languages:** Java, JavaScript, TypeScript, Python, Dart, PHP, C++, C# (and others)
- **Frameworks:** Flutter, React Native, Spring Boot, Django, ASP.NET MVC, Java JSP (and others)
- **Tools & Platforms:** Git, Docker, Firebase, Google Cloud, AWS, Hugging Face (and others)
- **Databases:** MySQL, PostgreSQL, Microsoft SQL etc.
- **AI Framework:** PyTorch
- **Others:** Research, Adaptability (learn new stacks or tools)
- **Languages:** English, Bahasa Melayu, Mandarin, Cantonese

## Software Engineering-related Achievements

- ICBASE 2025 - Best research paper (theme: AI) (2025)
- UTM GREX - Research poster award (silver) (engineering track) (2025)
- UTM PARS 2024 - Best presenter award (software track) (2024)
- FRGS research grant (Ref: FRGS/1/2023/ICT01/UTM/01/01) (2023)
- Dean Award (CGPA 3.98) (2022)
- UTM NALI - Silver medal (Project: School Performance Analytics System) (2021)
- UTM Grand Challenge – 3<sup>rd</sup> Runner up (Project: iQueue System) (2019)
- MTDC Business Challenge - Semi-finalist (Project: iQueue System) (2019)
- UTM CCSL Co-q – Silver medal (ICT community project vice president) (2018)
- UTM HCI day - Poster award (app UI/UX design) (2018)

## Project Portfolio

Please visit <https://ZackLoh.dev/>