Thon Pun Liang

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Experience

Data Scientist / AI Engineer Nov 2023 – Present
X-FAB Sarawak Sdn. Bhd. *Kuching, MY*

- Developed and validated a virtual metrology pipeline using FDC and SPC pre-measurement data, building a LightGBM regression model that achieved $R^2 > 0.95$, significantly reducing dependence on physical metrology and improving process feedback efficiency.
- Designed and implemented a multi-output defect classification model using MobileNetV3 for an automated wafer map inspection system, achieving >0.9 test accuracy across 14 defect classes while maintaining a lightweight and efficient architecture.
- Developed and enhanced an anomaly detection system for wafer fabrication using Dash. Added automated model training and synchronization across local servers, streamlining operations. Improved detection accuracy, reducing manual inspections and enhancing system scalability for sensor analysis.
- Created tools to analyze sensor data, identifying key contributors to critical performance metrics. Empowered engineers to make data-driven process improvements with actionable insights.
- Automated routine engineering tasks, reducing manual effort and turnaround time. Boosted operational efficiency by integrating automation scripts seamlessly into daily workflows.

Lecturer (Part-time) Mar 2025 – Present
Swinburne University of Technology Sarawak Campus *Kuching, MY*

- Delivered two lectures, conducted three tutorial/lab sessions, and assessed assignments across two semesters.

Graduate Research Assistant / Teaching Assistant Jul 2021 – Apr 2023
Swinburne University of Technology Sarawak Campus *Kuching, MY*

- Conducted research on "Explainable Artificial Intelligence (XAI) for Medical Image Analysis", funded by the Minister of Higher Education (MOHE) through the Fundamental Research Grant Scheme (FRGS).
- Developed deep learning models, including CNNs and Vision Transformers, to accurately diagnose diseases and classify their severity using open access COVID-19 chest X-ray and CT datasets.
- Implemented explainability techniques to increase the interpretability of the AI models, resulting in improved accuracy and transparency in medical image analysis.
- Conducted two tutorial/lab sessions and assessed assignments across two semesters.

Industrial Trainee Jan – Mar 2021
Sarawak Information Systems Sdn. Bhd. *Kuching, MY*

- Extracted and cleaned data from the company's ticketing system to analyze database administration team performance.
- Designed a PowerBI dashboard to track ticket response times, resolution rates, and workload distribution, providing real-time insights for management.
- Identified key performance trends, revealing bottlenecks and enabling data-driven process improvements.

Education

Master of Information and Communication Technologies (Research) Nov 2021 – Jan 2024
Swinburne University of Technology Sarawak Campus *Kuching, MY*

- **Area of Research:** Explainable AI, Computer Vision, Medical Image Analysis, Image Classification
- **Thesis:** *A Study on Lung Disease Diagnosis and Severity Classification using Deep Learning Techniques with Explainable Artificial Intelligence (XAI)*

Bachelor of Computer Science (Data Science) Sept 2018 – Jul 2021
Swinburne University of Technology Sarawak Campus *Kuching, MY*

- **Cumulative GPA:** 3.59/4.0
- **Relevant Coursework:** Fundamental of Data Management, Foundation of Statistics, Introduction to Data Science, Introduction to Artificial Intelligence, Data Structures and Patterns, Big Data Architecture and Application, Data Visualization, Advanced Data Analytics, Intelligent Systems

Publications

Investigation of ConViT on COVID-19 Lung Image Classification and the Effects of Image Resolution and Number of Attention Heads Jul 2023

***P.L. Thon**, J. C. M. Than, N. M. Noor, J. Han, P. Then*

10.30880/ijie.2023.15.03.005

Explainable COVID-19 Three Classes Severity Classification Using Chest X-Ray Images Dec 2022

***P.L. Thon**, J. C. M. Than, R. M. Kassim, N. M. Noor, P. Then*

10.1109/IECBES54088.2022.10079667

Preliminary Study on Patch Sizes in Vision Transformers (ViT) for COVID-19 and Diseased Lungs Classification Nov 2021

*J. C. M. Than, **P. L. Thon**, O. M. Rijal, R. M. Kassim, A. Yunus, N. M. Noor, P. Then*

10.1109/NBEC53282.2021.9618751

Awards

Best Paper Award, IECBEC 2022 Dec 2022

- Paper: Explainable COVID-19 Three Classes Severity Classification Using Chest X-Ray Images

Consolation Prize (Intel Track), Innovate Malaysia 2021 Aug 2021

- Conducted research on creating a smart on-road surveillance system aimed at tackling car theft in Malaysia.
- Implemented IoT technology to collect data from car dashcams, increasing security coverage across the country.

The Best Student Award 2019, Bachelor of Computer Science Year 1 2019

Skills

Programming Skills: Python, SQL, TypeScript, JavaScript

Technical Skills: Machine Learning, Computer Vision, Explainable AI, MLOps, ETL, Workflow Automation, PyTorch, Dash, Git

Languages: Fluent in English, Mandarin; Conversational in Malay, Spanish