

Thon Pun Liang

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EXPERIENCE

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

Major Responsibilities:

- Design, develop, test and research machine learning (ML) / deep learning systems, architectures and models.
- Maintain and enrich existing ML systems, frameworks and libraries.
- Verify data quality and/or ensuring it via data cleaning.
- Carry out relevant applied research (data science, ML algorithm, automation, etc.) upon projects' requirements.
- Monitor and evaluate the performance of deployed systems to ensure accuracy of results.
- Provide developer and user documentation for the deployed processes, data architectures and ML systems.
- Facilitate User Acceptance Testing (UAT) and deploy the application in a production environment.
- Utilize GitHub, Jenkins and Docker for version control and deployment process.
- Provide a reusable and high-quality Python modules and packages.

Graduate Research Assistant *Swinburne University of Technology Sarawak* Jul 2021 – Apr 2023

- 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.

Industrial Trainee (Data Science) *Sarawak Information Systems Sdn. Bhd.* Jan – Mar 2021

- Extracted, transformed, and loaded large amounts of data from databases to data warehouses, resulting in insightful predictions and interactive dashboards.
- Utilized business intelligence, data warehousing, and data analytics techniques to generate valuable insights and inform decision-making.
- Developed an analytics report on the company data science department's ticket management using PowerBI, showcasing my ability to visualize and communicate data effectively.

EDUCATION

Swinburne University of Technology Sarawak

Master of Science (Research) Nov 2021 – Jan 2024

- Area of Research: Explainable AI, Computer Vision, Image Classification, Medical Image Analysis

Bachelor of Computer Science (Data Science) Sept 2018 – Jul 2021

Cumulative GPA: 3.59/4.00

- 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 Visualisation, Advanced Data Analytics, Intelligent Systems

PUBLICATIONS

Journal Papers

- Vision Transformers for COVID-19 CXR Image Severity Classification with Explainable AI (Under Review)

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- P. L. Thon, J. C. M. Than, N. M. Noor, J. Han, and P. Then, ‘Investigation of ConViT on COVID-19 Lung Image Classification and the Effects of Image Resolution and Number of Attention Heads’, *IJIE*, vol. 15, no. 3, pp. 54–63, Jul. 2023, doi: 10.30880/ijie.2023.15.03.005.

Conference Papers

- P. L. Thon, J. C. M. Than, R. M. Kassim, A. Yunus, N. M. Noor, and P. Then, ‘Explainable COVID-19 Three Classes Severity Classification Using Chest X-Ray Images’, in *2022 IEEE-EMBS Conference on Biomedical Engineering and Sciences (IECBES)*, Kuala Lumpur, Malaysia: IEEE, Dec. 2022, pp. 312–317. doi: 10.1109/IECBES54088.2022.10079667.
- Transfer Learning using Convolutional Vision Transformers (ConViT) and Convolutional Neural Networks (CNNs) for COVID-19 Diagnosis System (IUPESM 2022, In Press)
- J. C. M. Than *et al.*, ‘Preliminary Study on Patch Sizes in Vision Transformers (ViT) for COVID-19 and Diseased Lungs Classification’, in *2021 IEEE National Biomedical Engineering Conference (NBEC)*, IEEE, Nov. 2021, pp. 146–150. doi: 10.1109/NBEC53282.2021.9618751.

AWARDS

Dec 2022

Best Paper Award, IECBES 2022

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

Aug 2021

Consolation Prize (Intel Track), Innovate Malaysia 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.

2019

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