ZHI QIN TAN

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EDUCATION

King's College London

PhD in Dental and Health Science Research

• Expected to finish in April 2027

University of Surrey

PhD in Computer Science

• Transferred to King's College London

Universiti Malaya

B.S. in Computer Science (Artificial Intelligence)

- CGPA: **3.96/4.00** (First Class Honours with Distinction)
- Held executive roles & won national-level programming competitions (see Awards Highlights & Community Service)

IELTS Academic

Overall Score: 8.0/9.0

Malacca Matriculation College

- Module 1 (Science)
- CGPA: **4.00/4.00**
- Major: Mathematics, Physics, Chemistry, Biology

PUBLICATIONS

- Text in the dark: Extremely low-light text image enhancement Che-Tsung Lin, Chun Chet Ng, Zhi Qin Tan, Wan Jun Nah, Xinyu Wang, Jie Long Kew, Pohao Hsu, Shang Hong Lai, Chee Seng Chan, Christopher Zach. Signal Processing: Image Communication, vol. 130, pp. 117222, Jan. 2025 [doi]
- Bayesian Detector Combination for Object Detection with Crowdsourced Annotations Zhi Qin Tan, Olga Isupova, Gustavo Carneiro, Xiatian Zhu, Yunpeng Li. ECCV 2024, Milan, Italy, Oct. 2024 [doi]
- When IC meets text: Towards a rich annotated integrated circuit text dataset Chun Chet Ng, Che-Tsung Lin, Zhi Qin Tan, Xinyu Wang, Jie Long Kew, Chee Seng Chan, Christopher Zach. Pattern Recognition, vol. 127, pp. 110–124, Mar. 2024 [doi]
- 4. Rethinking Long-Tailed Visual Recognition with Dynamic Probability Smoothing and Frequency Weighted Focusing Wan Jun Nah, Chun Chet Ng, Che-Tsung Lin, Yeong Khang Lee, Jie Long Kew, Zhi Qin Tan, Chee Seng Chan, Christopher Zach, Shang-Hong Lai. IEEE ICIP 2023, Kuala Lumpur, Malaysia, Oct. 2023 [Proceedings]
- Protecting Recurrent Neural Network by Embedding Keys Zhi Qin Tan, Hao Shan Wong, Chee Seng Chan. In <u>Digital Watermarking for Machine Learning Model: Techniques, Protocols and Applications</u>, Singapore: Springer, 2022, pp. 167—189.
- An Embarrassingly Simple Approach for Intellectual Property Rights Protection on Recurrent Neural Networks Zhi Qin Tan, Hao Shan Wong, Chee Seng Chan. AACL-IJCNLP 2022, Online, Taiwan, Nov. 2022 [Proceedings]

ACADEMIC SERVICE

London, United Kingdom Oct 2024 - Apr 2027 (Expected)

Guildford, United Kingdom Apr 2023 - Sep 2024

Kuala Lumpur, Malaysia Sep 2017 - Mar 2021

14th August 2022

Malacca, Malaysia Jun 2016 - Jun 2017

- Organised a one-time Python workshop to teach beginners from various academic backgrounds the basics of programming with Python.
- Prepared teaching material and conducted the workshop.
- ≻ Reviewer
 - AACL-IJCNLP (2022)
 - TPAMI (2023)
 - Neurocomputing (2023)
 - ACL (2024 2025)
- > Presented my first research project [2] at Bellairs Workshop on Machine Learning and Statistical Signal Processing for Data on Graphs (2024)
- Hosted a Statistical Workshop Focus Group in King's College London (2025)

WORK EXPERIENCE

Datium Insights

Senior Data Scientist

- Developed TruckVal, BikeVal and SalvageVal (valuation models for trucks, motorcycles, and salvage vehicles) and successfully achieved the goal of valuing >70% of assets with similar or better performance in terms of mean absolute error (MAE) compared to a human expert valuer.
- Mentored an intern in the data science team from the Universiti Malaya.

Data Scientist

June 2021 - Jul 2022

Aug 2019 - Feb 2020

Feb 2022 – Aug 2023

Remote

Kuala Lumpur, Malaysia Jul 2022 – Mar 2023

- Improved InstantVal (LightGBM) model (also used in PricesPeoplePay product) by >100 MAE. Redesigned target encoder to utilise multi-level mean for certain categorical features with shared predecessor. Implemented a custom logic to predict unseen vehicle variants based on their predecessor in lineage.
- Developed a variation of InstantVal called IndustrialVal that focuses on valuing industrial assets such as trucks, trailers, earthmoving assets, etc. IndustrialVal (in the development stage) can perform better than human valuer in certain industrial market segments.
- Worked on a variation of InstantVal called SalvageVal that focuses on valuing salvage assets. SalvageVal (in the development stage) can perform better than human valuer in certain salvage market segments.
- **Refactored and cleaned up** several repositories and created a **common valuation library** to be used across all projects.
- Led the technical development of the first version of AutoPredict (LightGBM) model that predicts the residual value of vehicles • with up to 98% coverage and 2500 MAE. Collaborated with the Australian team to understand the task and business requirements. *Mar 2020 – May 2021*

Data Scientist (Part Time)

- Trained and built a pipeline for license plate recognition (MaskedRCNN & YOLO with Tensorflow).
- Designed a **dashboard** for monitoring and interpreting **InstantVal** model with **SHAP** and historical data analysis.

Data Scientist Intern

- Proposed an unsupervised clustering method (Feature extraction with InceptionV3 & MobileNet > UMAP dimensionality reduction > DBSCAN Clustering) to create training dataset for supervised learning from different types of vehicle images.
- Developed an end-to-end pipeline for vehicle colour detection from segmenting vehicles (MaskedRCNN), querying top colours in different colour spaces, predicting RGB values from vehicle paint name (Bi-LSTM), to predicting basic colour names from RGB values (XGBoost).
- Built several supervised learning models (Tensorflow/Keras): vehicle image, vehicle make, vehicle body type classification, etc. ٠

Centre of Image and Signal Processing (CISiP) Lab, Universiti Malaya

Research Assistant (Part Time)

- Led a research project on protecting intellectual property rights of recurrent neural networks (See publication below)
- Collaborated with other senior lab members supervised by Dr Chan Chee Seng from Universiti Malaya and/or Che-Tsung Lin from Chalmers University of Technology on projects (PyTorch) such as:
 - Integrated circuit text detection dataset with aesthetic annotations
 - Low-light image enhancement
 - Breast cancer calcification detection on medical computerized tomography (CT) scan 3D images

Tapway	Selangor, Malaysia
AI Developer	Jul 2018 – Nov 2018
• Developed several AI solutions including face recognition and car plate recognition (Tensorflow).	

Universiti Malaya

Teaching Assistant (total of 8 classes, each 6-month long, covering Java, Data Structure, and Networking)

Kuala Lumpur, Malaysia Sep 2018 - Sep 2020

AWARDS HIGHLIGHTS

- > [National] E-Genting Bug Hunt Competition 1st place (2018), 3rd place (2019)
- > [National] ACM-ICPC Competitive Programming Competition (Malaysia) 2nd Place (2018), 2nd Place (2019)
- > [National] E-Genting Programming Competition 3rd place (2018), 2nd place (2019)
- > [National] F-Secure Intervarsity Cyber Security Competition 2nd Place (2018), 2nd Place (2019)
- > [National] KPMG Cyber Security Competition 2nd Place (2019)
- > Chinese Outbound Tourism Forecasting Competition (2023) Third Runner-Up

SPOKEN LANGUAGES

English, Mandarin, Bahasa Melayu (Malay) - able to speak & write fluently. **Spanish** – CEFR A2.

SIDE PROJECTS

Perodua QC Inspection System

Full Stack Engineer

Remote Sep 2018 - Aug 2019

- Worked with a team of 5 students to build a **complete system** for QC inspection and successfully **transformed** the vehicle inspection process flow from manual labour operation to a computer-aided operation.
- 2-part system: 1 mobile app (Java) for inspectors to take photos and book in details of vehicles using Panasonic Toughpad FZN1; 1 PC software (Python) for processing and checking inspection results.

COMMUNITY SERVICE

- > Deputy Director | University of Malaya Programming League (2018)
 - Directed a team of 20+ volunteers in hosting the annual programming competition in the university to encourage students to improve on programming and problem-solving skills.
 - Besides overseeing the whole project, I also designed a few competition challenges for the closed category.
- > Multimedia and Technical Department | Feskum (Convocation Ceremony of Universiti Malaya) (2017)
- > Publicity and Marketing Department | FaceHack [AI Hackathon] (2017)
 - Worked closely with sponsors and created promotional materials such as posters and short films.