Yin-Loon KHOR

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SUMMARY

Yin Loon Khor is a First-Class Honours graduate in Electrical and Electronic Engineering with strong interests in artificial intelligence, computer vision, and large language models. Currently at Intel, he works on AI-powered tools, including a RAG chatbot for knowledge retrieval, and develops automation workflows to streamline engineering processes. He also supports SoC integration and cross-domain debugging. Outside work, he actively pursues AI-related projects, explores emerging AI technologies and frameworks, and participates in various competitions. His efforts have earned him awards and research publications, reflecting a strong drive to apply engineering and AI to solve real-world challenges.

WORKING EXPERIENCE

Intel Microelectronics Malaysia Sdn Bhd September 2024 - Present

Graduate Talent (SOC DFT Design Engineering)

- Built AI-powered RAG chatbot with FastAPI, LangChain, and pgvector for Q&A over internal documentation; enhanced retrieval with BM25 reranking and chain-of-thought prompting, and benchmarked accuracy using curated FAQs and user evaluations
- Developed Python scripts using Pandas and JSON workflows to automate engineering processes like circuit connection and collateral generation, reducing manual effort and improving reusability
- Integrated components across domains at both SoC and subsystem levels, ensuring functional alignment and enabling cross-team collaboration
- Investigated and resolved design defects across multiple chip components, enhancing system stability and integration quality

Keysight Technologies Malaysia Sdn Bhd October 2022 – January 2023

Industrial Trainee

- Conducted prototype hardware evaluation and verification to ensure adherence to design specifications
- Developed automated hardware testing using Python script, reducing manual validation steps and ensuring consistent and accurate test execution
- Performed circuit testing and debugging on switch mode power supply, identifying and resolving issues to ensure proper functionality and design compliance

PROJECTS

1. **Expense Tracker & Tax Filing Assistant for Freelancers** (Repo)
   - Developed AI-focused FastAPI services for a full-stack web app (Vue.js frontend, Laravel backend, PostgreSQL), enabling automated tax-related insights; which is deployed on Alibaba Cloud for scalable access
   - Utilized prompt engineering with a visual language model to perform OCR, extracting structured data from receipts and classifying expenses into tax deduction categories, enabling personalized tax-saving suggestions
   - Created a RAG-powered chatbot using LangChain and ChromaDB to answer complex tax questions from curated tax documents, improving user confidence in tax filing
2. **Coastal Vulnerability Assessment via Building Damage Detection** (Repo)
   - Designed an AI-driven geospatial analysis pipeline for automated coastal disaster assessment by detecting building damage from satellite imagery
   - Leveraged transfer learning technique through pretraining and fine-tune model with a carefully engineered sequence using manually and self-annotated data
   - Achieved 0.51 mAP (27.5% above completion threshold) and ranked 8th among the top 10 global semi-finalists in 2024 EY Open Science Data Challenge over 11,000 registrants
3. **Smart Car Plate Recognition System using Multi-Task Learning** (Repo)
   - Introduced a one-stage YOLO-based multi-task model that integrates both Automatic License Plate Recognition (ALPR) and Optical Character Recognition (OCR) for enhanced vehicle identification
   - Designed a custom multi-task learning framework with weighted sum approach for multiple loss functions optimisation, ensuring scalability and practicability
   - Improved overall mAP and inference time by 5.56% and 78.90% compared to conventional method, respectively

- Published conference paper at IEEE EAIS 2024 and awarded gold in LKC FES FYP Poster Competition 2024

COMPETITIONS

1. **Top 10 Global Semi-Finalist**, 2024 EY Open Science Data Challenge (Article)
   - Built a geospatial AI model to assess storm damage in data-poor coastal environments
   - Created a practical business plan to implement the proposed model for local beneficiaries, focusing on assessing coastal infrastructure damage, vulnerability, socioeconomic impact and climate change risk
2. **First Prize**, IEEE Bigdata Cup 2024: Generalised Building Extraction Challenge (Article) (Repo)
   - Developed a robust cross-city building instance segmentation model generalising across diverse landscapes in Japan using diffusion-based data augmentation technique
   - Achieved a private F1-score of 0.897, ranking 1st with a label-efficient and lightweight solution
3. **Grand Prize**, Huawei ICT Competition 2023-2024 APAC-Malaysia (Cloud Track) (Article)
   - Led national-winning team in Cloud Computing, Big Data, and AI challenges, showcasing both theoretical depth and practical expertise in cloud architecture and deployment
   - Represented Malaysia to Huawei ICT Competition Regional Round

EDUCATION

Universiti Tunku Abdul Rahman (UTAR) (Sungai Long Campus) 2020 - 2024

Bachelor of Electrical and Electronic Engineering with Honours

- CGPA: 3.94/4.00 (First Class Honours)
- Relevant courses: Mathematics for Engineering, Object-Oriented Programming, Data Communications and Networking, Computer Organization and Architecture, and Microprocessor and Microcontroller Systems

TECHNICAL SKILLS AND CERTIFICATIONS

- Programming Languages: Python, JavaScript, React, C++, HTML/CSS
- Libraries and Tools: Pandas, NumPy, PyTorch, OpenCV, LangChain, FastAPI, Supabase, Git, MATLAB, Power BI, Linux
- Certifications: Huawei Certified ICT Associate - Artificial Intelligence (HCIA-AI)

PUBLICATIONS

Conference

1. **Y. -L. Khor**, Y. J. Wong, M. -L. Tham, Y. C. Chang, B. -H. Kwan and K. -C. Khor, "Multi-Task YOLO for Vehicle Colour Recognition and Automatic License Plate Recognition," 2024 IEEE International Conference on Evolving and Adaptive Intelligent Systems (EAIS), Madrid, Spain, 2024, pp. 1-7, doi: 10.1109/EAIS58494.2024.10570013.
2. Y. J. Wong, **Y. -L. Khor**, M. -L. Tham, B. -H. Kwan, A. Mokraoui and Y. C. Chang, "Cross-City Building Instance Segmentation: From More Data to Diffusion-Augmentation," 2024 IEEE International Conference on Big Data (BigData), Washington, DC, USA, 2024, pp. 8502-8511, doi: 10.1109/BigData62323.2024.10825702.

OTHER SKILLS & ACTIVITIES

- Language: Chinese (Native), English (MUET Band 4.5, IELTS Band 7.5), Malay
- Activities: Chairperson of UTAR IEEE Student Chapter 2022/2023 & Treasurer of UTAR IMechE Student Chapter 2022/2023