Yin-Loon KHOR

+60194790229 | yinloonkhor@gmail.com | LinkedIn | GitHub | Personal Website

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. 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
2. 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
3. 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

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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

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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

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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