KUAN-WEI LU

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Python · Computer Vision · LLM/VLM · Generative AI · MLOps

WORK EXPERIENCE

AI Software Engineer @ Garmin Ltd.   *November 2023 – present | Xindian, Taiwan*

▷ **Led Large-Scale AI Deployment** as the primary developer for an organization-wide computer vision platform, scaling and maintaining over **200 active production services**.

▷ **Pioneered GenAI Adoption** by leading VLM/LLM research initiatives, evaluating SOTA models and executing POCs to identify and deploy high-value use cases across the organization.

▷ **Mentored 2 interns** on AI system design and production deployment, while owning the full lifecycle of cross-functional AI infrastructure.

PROJECTS

Scale-able AI Surveillance & Analytics Platform   *November 2023 – present | Garmin*

Role: Lead Developer & Project Manager | Tech: Python, Computer Vision, Apache Kafka, MySQL, MongoDB

▷ Architected and maintained a centralized surveillance system ingesting live camera streams across **200+ active services**, digitizing physical facility operations to enable data-driven optimization of site efficiency and resource allocation.

▷ Built a real-time event pipeline applying AI inference and custom business logic to detect anomalies, **publishing structured notifications via Apache Kafka** to trigger downstream team alerts via Teams and email.

AI-Powered Document Inspection System   *March 2024 – present | Garmin*

Role: Sole Developer & Project Manager | Tech: Python, OCR, Computer Vision, Automation

▷ Engineered an automated document verification pipeline combining OCR and computer vision image comparison, reducing manual inspection time by **90%** while improving defect detection accuracy.

▷ Designed a human-in-the-loop review process filtering low-risk documents, allowing operators to focus exclusively on system-flagged anomalies.

Enterprise VLM/LLM Research, Evaluation, and API Governance   *April 2024 – present | Garmin*

Role: AI Researcher & Platform Owner | Tech: VLM, LLM, vLLM, Kong Gateway, Grafana, Generative AI

▷ Continuously evaluated emerging SOTA models and open-source inference frameworks through structured POCs, producing internal technical assessments to guide company-wide model adoption decisions.

▷ Identified and validated high-value internal use cases for Vision-Language Models, bridging the gap between cutting-edge research and practical enterprise deployment.

▷ Administered the internal GenAI API platform via Kong Gateway, managing API key lifecycle, access control and rate-limiting, while establishing platform observability through Grafana dashboards to ensure service stability.

TECHNICAL SKILLS

▷ **Languages & Frameworks:** Python, PyTorch, OpenCV, Scikit-Learn, MySQL; C++ with OpenMP/MPI/CUDA (graduate research)

▷ **AI & MLOps:** Computer Vision, Deep Learning, LLM/VLM, Generative AI, Git, Docker, Kubernetes, vLLM

▷ **Platform & Infrastructure:** Kong API Gateway, Apache Kafka, Grafana, CI/CD, API Design, MongoDB

EDUCATION

National Tsing Hua University (NTHU), Hsinchu, Taiwan   *July 2020 – July 2022*

Master's degree in Electrical Engineering (EE), advised by Prof. Min Sun

National Chung Hsing University (NCHU), Taichung, Taiwan   *September 2016 – June 2020*

Bachelor's degree in Bio-Industrial Mechatronics Engineering (BIME)