Le Xuan Hoang

AI Engineer | Data Scientist

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GitHub LinkedIn Portfolio

AI engineer, researcher, and data scientist specializing in vision-language models, GUI grounding, computer vision, and time-series forecasting. Currently pursuing an M.S. in Artificial Intelligence and Robotics at Sejong University's Vision Language Intelligence Lab, where my research focuses on adaptive refinement for computer-use agents. Experienced in building VLM-based systems, object detection and tracking pipelines, face-recognition applications, forecasting models, and large-scale customer analytics workflows. Passionate about building real-world automation systems that bridge cutting-edge research and practical applications.

Education

Master of Science, Sejong University, Seoul, Korea **2024 – 2026**
Department: Artificial Intelligence and Robotics | Advisor: Assoc. Prof. Cheol Jeong GPA: 4.29/4.5
Double Degree: M.S. in Convergence Engineering for Intelligent Drone
Thesis: Confidence-Guided Adaptive Refinement Technique for GUI Grounding

Bachelor of Engineering, VNU – Ho Chi Minh University of Technology, Vietnam **2017 – 2023**
Department: Mechatronics Engineering | Advisor: Ph.D. Pham Cong Bang GPA: 8.13/10
Program: Training Program of Excellent Engineers in Viet Nam (PFIEV)
Thesis: Analysis and Design of an Automated Chicken Classification System

Selected Research & Patent

- **L. X. Hoang** and C. Jeong, "DART: Density-Aware Adaptive Refinement for GUI Grounding on Computer-Use Agents," submitted to *IEEE Access*, 2026, under review.
- P. T. Long, **L. X. Hoang**, Q. Li, and C. Jeong, "Training-Free ROI Selection via Semantic Vector Fields for GUI Grounding," manuscript revised for submission to *AAAI Conference on Artificial Intelligence (AAAI)*, 2027.
- **L. X. Hoang** and C. Jeong, "CGAR: Confidence-Guided Adaptive Refinement for GUI Grounding," research project on training-free GUI grounding refinement, 2025.
- **L. X. Hoang** *et al.*, "A Dataset for Computer-Use Agents," manuscript in preparation.
- **Patent:** Method and apparatus for confidence-guided adaptive GUI grounding, submitted in 2025.

Professional Experience

Research Assistant **2024.09 – Present**
Vision Language Intelligence Lab, Sejong University Korea
Keywords: Vision-Language Models, GUI Grounding, Computer-Use Agents, Object Detection, Tracking, Benchmark Evaluation.

- **Developed** a training-free adaptive refinement method for GUI grounding that uses attention maps from intermediate VLM layers to guide region refinement and stopping decisions. Improved ScreenSpot-Pro accuracy on KV-Ground-8B from 73.0% to 80.9%, achieving top performance among evaluated refinement strategies while remaining competitive with larger models.
- **Built** a VLM-based CCTV video classification module using Qwen3-VL and InternVL3 during an internship with PIASPACE. Achieved 94.44% accuracy on a manually labeled test set and 83.53% accuracy on a company dataset, contributing to a live demo of an automatic CCTV video dataset construction framework.
- **Implemented** a vision-guided beamforming pipeline using YOLOv11 for vehicle detection and ByteTrack for tracking and position estimation. Evaluated on the DeepSense 6G dataset across three driving scenarios, improving average data rate by 20–29% over baseline.
- **Contributed** to research projects by performing data annotation, running simulation experiments, supporting implementation, and preparing manuscripts.

Data Scientist **2023.05 – 2024.08**
Center of Applied Data Science, FPT Corporation Vietnam
Keywords: Time-Series Forecasting, PySpark, XGBoost, Customer Analytics, Web Logs, Data Crawling.

- **Designed** monthly electricity-demand forecasting models by decomposing time series into trend, seasonal, and residual components and modeling each component separately. Achieved MAPE below 6% across 13 provinces and below 4% in six provinces during the January 2022–July 2023 evaluation period; delivered forecasting results to the customer.
- **Improved** a daily guest-count forecasting pipeline for 440+ restaurants by segmenting venues into stable and volatile traffic groups and training separate XGBoost models. Added feature engineering, anomaly detection, missing-data imputation, and hyperparameter tuning, reducing feature count by approximately 90% and training time by approximately 70%. Reduced WAPE from 25.3% to 22.0%, with 1.0–4.2% improvement across deployment months.
- **Processed** 96M+ raw web logs into 20 labeled user actions, mapped 32.5M sessions into a 5-phase customer journey, and created three behavioral segments for business analysis. Built a statistical exit-intent model with 67% F1 score

and developed a boosting-based lead prediction model from approximately 1M candidates using around 1,500 true labels.

- **Developed** data enrichment pipelines for LinkedIn, Google Maps, and Chotot, extracting 1M+ records and 200K+ unique contacts to support customer analytics and lead recommendation.

Data Scientist **2022.06 – 2023.03**
VTCODE Company Vietnam
Keywords: Face Recognition, Computer Vision, Object Tracking, CNNs, FastAPI, MongoDB, Forecasting.

- **Built and deployed** a real-time facial-recognition attendance system using SSD-based face detection, centroid tracking, VGGFace2/ResNet50 embeddings, and cosine-similarity matching. Automated employee check-in/check-out and achieved 97% accuracy in the office environment.
- **Extended** the face-recognition system into a web platform by developing the back-end with FastAPI and MongoDB, enabling attendance management and recognition-result storage.
- **Built** daily restaurant revenue forecasting models using FBProphet to support financial planning and operational decision-making.
- **Integrated** multi-source company data from databases, spreadsheets, documents, and external crawled web sources to deliver analysis and recommendations to the board of directors.

Research Intern **2021.01 – 2022.06**
Control and Automation Laboratory, HCMUT Vietnam
Keywords: Computer Vision, CNNs, YOLOv5, Classification, Embedded Control, Mechatronic System Design.

- **Designed** an automated chicken classification system by collecting farm image data, developing computer-vision classification models, and integrating mechanical, electrical, and control components for a prototype system.

Honors & Scholarships

- **Research:** Achieved top performance in VLILAB internal research evaluation, 2025.
- **Graduate:** BK21 FOUR Graduate Research Fellowship, Sejong University, Korea.
- **University:** Academic Merit Scholarships, Ho Chi Minh University of Technology.
- **Pre-university:** Ranked 87th of 9,199 candidates, approximately top 1%, in the provincial Mathematics–Physics–Chemistry examination; National Encouragement Prize in Mathematics.

Technical Skills

AI & ML. Vision–Language Models, GUI Grounding, GUI Agents, Computer Vision, Object Detection & Tracking, Face Recognition, Deep Learning, CNN, Classification, Time-Series Forecasting.
Programming. Python (PyTorch, OpenCV, FastAPI, Pandas, Numpy, PySpark), C/C++.
Tools. Git, Linux, Jupyter Notebook, MongoDB.
Languages. Vietnamese (Native), English (Fluent), Korean (Basic).
Certifications. Machine Learning, Data Science, Deep Learning, Google Advanced Data Analytics, Scientific Computing with Python, Data Analysis.
Soft Skills. Analytical thinking, problem-solving, creativity, and adaptability.
Interests. Mathematics, automation, machinery, sports, continuous learning, and music.

References

Associate Professor Cheol Jeong
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Sejong University, Korea
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Ph.D. Pham Cong Bang
Vice Dean, Faculty of Mechanical Engineering
Ho Chi Minh University of Technology, Vietnam
Email: pcbang@hcmut.edu.vn