

Lam-Nguyen Nguyen

Information Security Engineer · Applied ML for IoT

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SUMMARY

Focusing on trustworthy machine learning, weak supervision, and benchmark validity for IoT telemetry systems.

Engineer's degree in Information Technology (Information Security major), VLUTE, 2026.

EDUCATION

Vinh Long University of Technology and Engineering (VLUTE) *2022 – 2026*
Engineer's degree, Information Technology, Information Security major *Cohort K47 · GPA 3.18/4.00*

- Formerly Vinh Long University of Technology Education.

RESEARCH INTERESTS

Trustworthy Machine Learning for IoT/Edge Systems Weak Supervision Temporal ML Evaluation
AI Security
My work addresses an essential problem in applying machine learning to real-world edge systems: when does a high benchmark score support inference about an underlying physical state, and when does it primarily reflect label construction, temporal information, or deployment conditions?

RESEARCH EXPERIENCE

Vinh Long University of Technology and Engineering (VLUTE), research project

First-Author Research — Trustworthy ML for Agricultural IoT *2026 – ongoing*

- Designed controlled experiments to evaluate rule-derived weak targets under different temporal information regimes and deployment conditions.
- Investigated target leakage, proxy features, temporal history, distribution shift, and the distinction between label recoverability and independent physical validation.

Graduation Thesis Researcher — AgriFusion-IoT (Advisor: Hoai-Hanh Tran) *2025 – 2026*

- Designed and deployed an ESP32-S3/4G agricultural IoT system, and designed a traceable pipeline from raw Firebase telemetry to weakly labeled ML benchmarks using temporal splits and leakage controls; software implementation was AI-assisted, directed and validated by the author.

Student Researcher — Agricultural IoT Analytics *2026*

- Contributed to data preparation, weak labeling, temporal evaluation protocols, and benchmarking tabular models against gradient boosting for the manuscript submitted to EAI AICON 2026.

PUBLICATIONS

1. Benchmarking Foundation Models and Gradient Boosting for Agricultural IoT Context Analytics: A Weakly Supervised Temporal Evaluation *2026*

Hoai-Hanh Tran, Thanh-Nghi Doan, **Lam-Nguyen Nguyen** · *Submitted to EAI AICON 2026 (under review)*

2. Auditing temporal sensor classifiers: target definitions, rule fidelity, and corrective decisions *2026*

Lam-Nguyen Nguyen, Hoai-Hanh Tran* · *Submitted to SN Computer Science (Springer Nature), 22 Nov 2026; in process* (* corresponding author)

3. Building an IoT-based System for Monitoring Environmental and Nutritional Conditions in Durian Orchards *2026*

Lam-Nguyen Nguyen · *Graduation thesis, VLUTE, 2026 · Advisor: Hoai-Hanh Tran* · Project: AgriFusion-IoT

4. From Determinants to Rank: An Approach to Parameterized Matrix Problems in Undergraduate Algebra Olympiads *2025*

Lam-Nguyen Nguyen · *Exposition note for National Student Mathematics Olympiad training, 2025*

PROJECTS

AgriFusion-IoT *Sep 2025 – May 2026*

Graduation thesis: Building an IoT-based System for Monitoring Environmental and Nutritional Conditions in Durian Orchards *Advisor: Hoai-Hanh Tran*

- **Device:** designed and deployed a field measuring device (ESP32-S3, RS485/Modbus sensors) that sends data over 4G.
- **Data:** uploaded the data to the cloud (Firebase), pulled it back, then cleaned and standardized it into an analysis dataset.
- **Models:** trained and compared machine-learning models (XGBoost, TabPFN, deep-learning models) over time; validated the results and wrote 2 papers (see Publications).

Benchmarking Tabular Models on Weakly Supervised IoT Data *2026 – present*

Co-authored manuscript submitted to EAI AICON 2026 (under review)

HONORS AND AWARDS

Honorable Mention, Algebra Division B · National Student Mathematics Olympiad *2025*

University Representative · National Student Mathematics Olympiad *4 editions (2023–2026)*

TECHNICAL SKILLS

- **Programming:** Python, with pandas (data processing), scikit-learn (machine learning), PyTorch (basic deep learning)
- **ML & Data:** TabPFN, FT-Transformer, TabM, rule-derived weak labeling, temporal evaluation, leakage control, imbalanced-class metrics, traceable data pipelines, hash checks
- **Databases:** SQL — MySQL, SQL Server, PostgreSQL
- **IoT & Embedded:** ESP32 programming (C/C++), RS485/Modbus, sensors SHT30, ES-SOIL-7-IN-1, SIM A7682S 4G LTE, Firebase RTDB
- **Development:** Git/GitHub, Linux, Docker

AI-ASSISTED WORKFLOW

- **Tools:** Claude Code, Codex.
- **Method:** write requirements and a plan first, have an AI agent write the code, have a second agent test it, and review the results myself before using them.
- **Applied to:** the AgriFusion-IoT thesis project, Workflow_Automation_Tool, and this CV site (cv.lnit.id.vn).

LANGUAGES

English: CEFR B1 (institutional certificate) Vietnamese (native)