# Long Vu

404-706-4868 vuthanglonghd@gmail.com longthangvu.github.io longthangvu Long Vu

## Education

**Kennesaw State University** **Expected May 2027**
*Ph.D. Student, Computer Science, GPA: 4.0/4.0* *Kennesaw, GA*

**Vietnam National University** **Graduated – Jun 2022**
*B.Sc., Information Systems, GPA: 3.4/4.0* *Hanoi, Vietnam*

## Current Research

### Foundation Time-Series Model with In-Context Learning

*Goal: designing compact models capable of Bayesian in-context inference*

- Designing a compact time-series foundation model capable of state-of-the-art zero-shot forecasting, trained on small synthetic datasets with controlled temporal structure.
- Improved the model's ability to generalize across real-world series by designing efficient temporal representations, tailoring synthetic priors, and optimizing training stability and inference efficiency.

### Efficient Large Model Architectures for On-Device Deployment

*Goal: understand and design compact, hardware-aware models for real-world edge environments*

- Investigating how model architecture and design influence efficiency, robustness, and representational capacity when deployed on constrained hardware (CPU/GPU/NPU).
- Applying neural architecture search and structural analysis to design compact, production-ready models, with attention to energy consumption, memory footprint, and latency under real deployment conditions.
- Studying decision boundaries and failure modes in small-scale models to understand what architectural features support stable and reliable inference in on-device LLMs and vision models.

## Experience

**Kennesaw State University** **Aug 2023 – Present**
*Graduate Research Assistant* *Kennesaw, GA*

- Conducting research on foundation models for time-series with in-context learning, and efficient, hardware-aware model architectures for on-device deployment, focusing on performance–resource tradeoffs.
- Building and maintaining reproducible research workflows, coordinating experiments across projects, and collaborating with teams to evaluate and iterate on model design choices and real-world applications.

**Vietnam National University** **Jul 2022 – Jul 2023**
*Research Assistant* *Hanoi, Vietnam*

- Defined system requirements for the City-Scale Multi-Camera Vehicle Tracking problem, implemented a CNN-based tracking pipeline using PyTorch, OpenCV, and re-identification modules
- Conducted empirical evaluations and optimizations; collaborated with faculty and graduate researchers to refine system design
- Provided comprehensive teaching support for core courses, assisting students with technical questions and projects, maintaining course resources, and organizing lab instruction and grading for 150+ undergraduates

**Digital R&D Center - Rang Dong Company** **Jul 2022 – Jul 2023**
*Part-time Technical Engineer* *Hanoi, Vietnam*

- Led two cross-functional teams (5 members each) in developing smart home and smart agriculture systems; contributed to the React Native applications and integrated MQTT-based communication with edge devices
- Led training and hands-on mentoring for team members, including those new to product development, providing guidance on development workflows, software pipelines, and best practices

**NEC Vietnam Co Ltd.** **Nov 2020 - Sep 2021**
*Software Engineer Intern* *Hanoi, Vietnam*

- Designed and developed a production-grade patient data management web application deployed across multiple hospitals in Japan, built with Java Spring MVC, JSP, JavaScript, PostgreSQL, and Apache Tomcat
- Implemented backend data pipelines to support large-scale report extraction, including parallelized processing workflows integrated within the Spring server environment and data feeds to an external AI inference module

## Publications

1. **Long Vu**, Madeline Frank, Honghui Xu, Sisi Chen, Tu N. Nguyen, Selena He, Bobin Deng, Kun Suo. 2025. "Assessing and Visualizing Completeness, Co-Coverage, and Scalability in Multivariate Time-Series Data". In 2025 IEEE International Performance, Computing, and Communications Conference (IPCCC), November 21-23, Austin, TX, USA
2. **Long Vu**, Kun Suo, Md Romyull Islam, Nobel Dhar, Tu N. Nguyen, Selena He, and Yong Shi. 2024. "Living on the Electric Vehicle and Cloud Era: A Study of Cyber Vulnerabilities, Potential Impacts, and Possible Strategies". In 2024 ACM Southeast Conference (ACMSE 2024), April 18–20, 2024, Marietta, GA, USA
3. Kun Suo, **Long Vu**, Md Romyull Islam, Nobel Dhar, Tu Nguyen, Selena He and Xiaofeng Wu. 2024. "A Systematic Investigation of Hardware and Software in Electric Vehicular Platform". In 2024 ACM Southeast Conference (ACMSE 2024), April 18–20, 2024, Marietta, GA, USA
4. Md Romyull Islam, **Long Vu**, Nobel Dhar, Bobin Deng and Kun Suo. 2024. "Building a Resilient and Sustainable Grid: A Study of Challenges and Opportunities in AI for Smart Virtual Power Plants". In 2024 ACM Southeast Conference (ACMSE 2024), April 18–20, 2024, Marietta, GA, USA

## Technical Skills

**Machine Learning:** PyTorch, TensorFlow; TensorFlow Lite, TensorRT, ONNX; TensorBoard, Pytorch Profiler, FAIR's fvcore, Gradio/Plotly/Dash
**Programming:** Python, Java, JavaScript, C++
**Systems & Tooling:** Linux, Bash/Shell Scripting, Git, Container Tools (Docker, Kubernetes)
**Data Technologies:** Kafka, MongoDB, MySQL, PosgreSQL

## References

**Associate Professor Dr. Kevin (Kun) Suo**
*Department of Computer Science, Kennesaw State University*

- **Address:** Georgia, USA
- **E-mail:** ksuo@kennesaw.edu
- **Website:** https://kevinsuo.github.io

**Associate Professor Dr. Tu N. Nguyen**
*Department of Computer Science, Kennesaw State University*

- **Address:** Georgia, USA
- **E-mail:** tu.nguyen@kennesaw.edu and nguyent@ieee.org
- **Website:** https://ksuweb.kennesaw.edu/∼tnguy360/

**Associate Professor Dr. Nguyen Ngoc Hoa**
*Department of Information Systems, VNU University of Engineering and Technology*

- **Address:** Hanoi, Vietnam
- **E-mail:** hoa.nguyen@vnu.edu.vn