TUAN-CUONG VUONG

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Objective

Aspiring **AI researcher** with strong academic and research background in Generative AI and Multi-Agent Systems. Seeking a **PhD postion** to further explore cutting-edge AI techniques.

Research Background

- **Joint Embedding Predictive Architecture (JEPA):** Designing and evaluating JEPA-based models to learn compressed, predictive representations across language, vision, and structured data
- **Agentic AI & AGI:** Architecting multi-agent frameworks that collaborate, adapt, and learn to solve complex tasks autonomously.
- **Scalability & Security of LLMs:** Quantization, self-hosting, and DevOps pipelines for private, low-latency, and cost-effective inference at scale.

Education

- **Phenikaa University[🌐]** *Sep 2021 - June 2025*
  Bachelor of Science in Computer Science (Specialization in Data Science and Artificial Intelligence) Ha Noi, Viet Nam
  - GPA: 3.21/4.00
  - Coursework includes Data Science, Machine Learning, Computer Vision, and Natural Language Processing.

Patents and Publications

C=Conference, J=Journal

Journal papers:

[J.2] **Vuong Tuan-Cuong**, Trang Xuan Mai, Van Luong Thien. (2025). **Task-Free Mixture of Agents for Multi-Document Summarization Leveraging LLMs and Knowledge Graphs**. *Neural Computing and Applications* **(Submitted)**.

[J.1] Ngo Vu-Duc, **Vuong Tuan-Cuong**, Van Luong Thien, Tran Hung. (2023). **Machine learning-based intrusion detection: feature selection versus feature extraction**. *Cluster Computing*, pp. 1-15. Springer.

Conference papers:

[C.3] **Vuong Tuan-Cuong**, Cong Chi Nguyen, Pham Van-Cuong, Le Thi-Thanh-Huyen, Tran Xuan-Nam, Luong Thien Van. (2024). **Effective Intrusion Detection for UAV Communications using Autoencoder-based Feature Extraction and Machine Learning Approach**. Manuscript accepted for publication in *2024 International Symposium on Nonlinear Theory and Its Applications*, pp. 798-804.

[C.2] **Vuong Tuan-Cuong**, Trang Mai Xuan, Luong Thien Van. (2024). **BERT-VBD: Vietnamese Multi-Document Summarization Framework**. In *CITA 2024: The 13th Conference on Information Technology and its Applications*, pp. 1798-1804.

[C.1] **Vuong Tuan-Cuong**, Tran Hung, Trang Mai Xuan, Ngo Vu-Duc, Luong Thien Van. (2022). **A Comparison of Feature Selection and Feature Extraction in Network Intrusion Detection Systems**. In *2022 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, pp. 1798-1804.

Honors and Awards

- **Nominee for Student Best Paper Awards in CITA2024** *Jul. 2024*
  The 13th Conference on Information Technology and its Applications.
- **Viet Nam Informatics Olympiad consolation prize 2023** *Dec. 2023*
  VietNam Free Opensource Software Association
- **JASSO Scholarship for International Students in Japan** *Feb. 2023*
  Japan Student Services Organization | JASSO
- **Asia Pacific Signal and Information Processing Association Annual Summit and Conference Scholarship** *Dec. 2022*
  APSIPA ASC
- **Second Prize in Scientific Research Competition hosted by Phenikaa University** *Aug. 2022*
  Phenikaa University
- **First Prize in Scientific Research Competition hosted by Faculty of Computer Science** *Feb. 2022*
  Phenikaa University

Research Experience

- **AIoT Lab - Phenikaa University [🌐]** *Research Assistant*
  Onsite Ha Noi, Viet Nam
  October 2021 – Present
  - Focus on Agentic AI, self-supervised representation learning, and predictive architectures for multimodal understanding.
  - Hands-on experience designing and evaluating multi-agent frameworks in the Multi Document Summarization task.
- **Shibaura Institute of Technology [🌐]** *Talent Student - Exchange Student*
  Onsite Tokyo, Japan
  Dec 2022 – Feb 2023
  - Developed a home-based IoT framework integrating wearable ECG sensors and anomaly-detection agents to detect sudden cardiac arrest in elderly residents.

Work Experience

- **BSM Labs [🌐]** *Full Time AI Engineer*
  Onsite Ha Noi, Viet Nam
  April 2024 - Present
  - **Agentic RAG System for Healthcare:**
    - Designed and deployed a multi-agent Retrieval-Augmented Generation platform at Hanoi University of Medicine & Pharmacy Hospital for literature search and health advisory.
    - Delivered 90% accuracy on hospital datasets and 4.0/5 helpfulness rating in pilot user studies.
  - **Enterprise Multi-Agent Collaboration Platform:**
    - Pilots in multiple departments improved task throughput by 200%.
    - Built end-to-end workflow automation using OpenAI-agents, n8n, LangChain, LlamaIndex, and Qdrant.

Skills

- **Programming Languages:** Python, C++, Latex
- **LLM & Agents:** LangChain, OpenAI-agents, LlamaIndex, Qdrant, n8n, Unsloth
- **ML & DL:** PyTorch, TensorFlow, scikit-learn, Transformers (BERT, GPT)
- **Data & Databases:** Pandas, NumPy, Faiss, ChromaDB, Milvus, Neo4j
- **DevOps & MLOps:** GitHub Actions, Docker, RunPods, PM2
- **Cloud & Infra:** AWS, GCP, self-hosted GPU clusters

Teaching Assistantship

- **CSE703023: Computer architecture, Phenikaa University.** *2023*
- **CSE703041: Introduction to artificial intelligence, Phenikaa University.** *2022*

Professional Activities

- **Student member of Asia-Pacific Signal and Information Processing Conference** *November 2022 - Present*
- **Reviewer, AI & Society, Springer** *2025*
- **Reviewer, CITA 2025 – Conference on Information Technology and its Applications** *2025*
- **Reviewer, KSE 2023 – International Conference on Knowledge and Systems Engineering** *2023*

Additional Information

Languages: Vietnamese (Native), English (Toeic - 800).

References

1. **Dr. Thien Van Luong**
   PhD - Leader of Bussiness AI Lab,
   Department of Computer Science National Economics University
   Personal Page
   Email: thienlv@neu.edu.vn
   Relationship: Supervisor
2. **Dr. Trang Xuan Mai**
   PhD - Leader of AIoT Lab, Deputy Dean,
   Department of Computer Science Phenikaa University
   Email: trang.maixuan@phenikaa-uni.edu.vn
   Relationship: Supervisor