Thi Vu

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RESEARCH INTERESTS

I am a Research Resident in the Qualcomm AI Research Residency Program, a highly selective initiative that prepares top undergraduates in Vietnam for doctoral studies in AI. My research interests include **Multimodal Learning, Audio & Speech Processing, Human-AI Interaction, AI for Creativity**. I am also open to new interesting areas.

EDUCATION

University of Engineering and Technology, Vietnam National University, Hanoi (UET, VNU)　　　　2020–2024
Bachelor in Computer Science　　　　GPA: 3.63/4.0

PUBLICATIONS

Thi Vu, Linh The Nguyen, and Dat Quoc Nguyen. "Zero-Shot Text-to-Speech for Vietnamese". In: *Proceedings of ACL*. Metareview 5/5. 2025. URL: https://arxiv.org/pdf/2506.01322.

Thi Vu, Linh The Nguyen, and Dat Quoc Nguyen. "Vietnamese Automatic Speech Recognition: A Revisit". Under review at ACL Rolling Review. Oct 2025.

WORK EXPERIENCE

Qualcomm AI Research | *Research Resident*　　　　Hanoi, Vietnam
Advisor: Dr. Dat Quoc Nguyen　　　　Apr 2025–Present

- Led development of the first Vietnamese ASR dataset that offers (1) large scale, (2) full orthographic formatting (punctuation/capitalization), and (3) word-level timestamps for **structured, human-readable outputs**. Resulted in a first-author paper submitted to **EACL 2026**.
- Evaluated how regional accent coverage, timestamp ratio, and punctuation/capitalization conditioning influence transcription and timestamp alignment quality.
- Applied Rotation Program: developed retrieval QA for on-device chat messages with compact embedding indexes, hybrid keyword+semantic search, reranking, and latency-aware caching.

VinAI Research | *Research Resident*　　　　Hanoi, Vietnam
Advisor: Dr. Dat Quoc Nguyen　　　　Sep 2023–Mar 2025

- Built and released **PhoAudiobook**, a 1500h dataset addressing the **resource gap** for Vietnamese speech; designed a scalable, **language-agnostic data pipeline** for processing 23k+ hours of audio. Downloaded 2000+ times per month. Hugging Face.
- Benchmarked zero-shot TTS models using objective metrics and **human evaluations**; first-author paper accepted to **ACL 2025 Main Track** (metareview 5/5).

FaceNet High Tech Joint Stock Company | *AI Intern*　　　　Feb 2023–May 2023

- Built an on-device human detection and multi-object tracking system for smart homes on ASUS Tinker Edge T

Institute for Artificial Intelligence | *Research Assistant* UET, VNU
Advisor: Dr. Tran Quoc Long 2022–2023

- Led a 6-student team on ship segmentation in satellite imagery: built baseline, conducted error analysis, iterated with data/model/augmentation improvements, and deployment. The project successfully secured funding from Vietnam National University.
- Organized weekly seminars to mentor junior students on machine learning fundamentals and research methodologies.

PROJECTS

Vietnamese Braille Keyboard (VBK) GitHub | Demo

An inclusive accessibility tool empowering visually impaired users to type efficiently on smartphones. Features a novel 6-dot touch input interface with interactive voice guidance.

BVoice GitHub

Bridged the communication gap for the deaf community by deploying an on-device sign language recognition model using MediaPipe for real-time video-to-text translation.

PhoTextNormalization Hugging Face

Fine-tuned mBART-large-50 model on Vietnamese written to spoken text pairs for robust text normalization (e.g., numbers/dates $\rightarrow$ spoken form).

Billboard Visual Data Analysis GitHub

Exploratory analysis of music trends (1960–2022) combining NLP on lyrics with Spotify audio features to visualize the evolution of musical attributes over decades.

Stress Reducer GitHub | Demo

Developed a human-centered health app implementing neuroscience-backed breathing protocols (NSDR) with guided audio-visual cues for rapid stress reduction.

AWARDS & SCHOLARSHIPS

- Outstanding Resident Award in Research 2025 (out of 35 residents), Qualcomm AI Research Vietnam.
- Third Prize (top 3/145) at SOICT hackathon 2023 organized by HUST and Samsung Vietnam.
- Pony Chung Scholarship (by Hyundai Motor Group) — 4 recipients at university level.
- Vietcombank Scholarship — 15 recipients at university level.
- Dean's List (top GPA in program of 300 students in each semester), awarded 3 times.

TECHNICAL SKILLS

- Machine Learning: PyTorch, Transformers, PyTorch Lightning, Hydra, TensorBoard, Weights & Biases, Triton Inference Server
- Audio Processing: torchaudio, librosa
- Mobile Development: Android (Android Studio, Android SDK), MediaPipe AAR, Android TTS.
- Languages: Python, Java, C++
- Tools: Git, Linux, SLURM, LaTeX