

Pham Ngoc Quan

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EDUCATION

Hanoi University of Science and Technology | Hanoi, Vietnam

Sep 2021 - Present

- **Major:** B.S. in Data Science | **GPA:** 3.43/4.0
- **Relevant Courses:** Data Structures & Algorithms, Data Science, Natural Language Processing, Computer Vision

Thai Binh Gifted High School | Thai Binh, Vietnam

Sep 2018 - Sep 2021

- **Major:** Mathematics

PUBLICATIONS

A robust pitch-fusion model for speech emotion recognition in tonal languages (ICASSP 2024)

[DOI LINK](#)

- Pham Viet Thanh*, Ngo Thi Thu Huyen*, Pham Ngoc Quan, Nguyen Thi Thu Trang⁺

RESEARCH EXPERIENCE

Speech Emotion Recognition | NLP Laboratory (BKAI) | Hanoi, Vietnam

Researcher/Student Assistant

May 2023 - Present

- Implemented audio-visual pipeline including **face tracking**, **active speaker detection**, **face clustering** to construct ViSEC dataset containing 5,280 utterances from 147 Vietnamese speakers.
- Implemented **Pseudo-Labeling framework** for Speech Emotion Recognition in low-resource languages such as Vietnamese, achieved **SOTA results** for SER task with 79% weighted accuracy.
- Investigated enhanced architectures of attention mechanisms to optimize Speech Emotion Recognition, including **Area Attention**, **Focus and Calibration Attention**, **Context Pooling**.

Vietnamese Spoofing-Aware Speaker Verification | NLP Laboratory (BKAI) | Hanoi, Vietnam

Researcher/Student Assistant

Sep 2023 - December 2023

- Developed an integrated **Automatic Speaker Verification** (ASV) and **Countermeasure** (CM) system, utilizing advanced models (**ECAPA-TDNN**, **RawNet3** for ASV; **AASIST**, **S2pecNet** for CM).
- Introduced a novel fusion layer using **Catboost** to enhance spoofing detection capabilities in Vietnamese speech.
- Successfully achieved third place in both public and private test sets at **VLSP 2023 - VSASV Challenge**.

PERSONAL PROJECT

- **The book “89 Functional Equation Problems”:** Compiled 89 functional equation problems, a common topic in the International Mathematical Olympiad, published at my personal blog vmo.ngocquan.com
- **English-Vietnamese Machine Translation:** Developed a machine translation model based on the pretrained **ViT5** model, fine-tuned with the **MTET** and **PhoMT** datasets, achieved **36.97 BLEU** score on average.
- **Football Player Price Prediction:** Implemented a data crawling system for the Transfermarkt website using **BeautifulSoup** and **Selenium**, acquiring data encompassing over **10,000 football players** with **42 attributes**, performed data analyses and utilized **XGBoost**, **Random Forest** models to predict player market values.
- **Sorting Algorithm Visualize Program:** Implemented interactive visualizations of different sorting algorithms using **JavaFX**.
- **Vietnamese Speech Enhancement:** Employed the **CMGAN** model and enhanced its performance for Vietnamese speech by fine-tuning with a 10-hour Vietnamese speech dataset, achieved **0.89/1 on STOI metrics** (for measuring intelligibility of noisy speech, higher is better)

ACHIEVEMENTS

Third Prize for Vietnam Mathematical Olympiad 2021

- Issued by Ministry of Education and Training

First Prize for National Startup Contest for Students SV.STARTUP 2023

- Issued by Ministry of Education and Training

Second Prize for SOICT Hackathon 2023 (AI-Powered BFIS track)

- Issued by Hanoi University of Science and Technology and BKAI

TECHNICAL SKILLS

Programming Languages: Python (Advanced), Java (Advanced), C++, R

Frameworks: Pandas, Numpy, Scikit-learn, Pytorch, OpenCV, Huggingface, Transformers, Selenium, BeautifulSoup