Quan Mai

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Profile

PhD Candidate in Computer Engineering with expertise in deep learning and natural language processing (NLP). Experienced in designing and implementing advanced neural frameworks to enhance the efficiency and accuracy of information retrieval systems. Skilled in leveraging deep learning techniques and state-of-the-art models to address complex challenges in large-scale data processing and retrieval. Proven ability to develop innovative solutions in NLP, demonstrated through research and publications. Passionate about developing innovative solutions that bridge the gap between cutting-edge research and real-world applications in AI-driven information systems.

Education

University of Arkansas, Fayetteville **Jan 2020 – Dec 2025**
PhD in Computer Engineering, GPA: 4.00/4.00

Danang University of Science and Technology, Vietnam **Aug 2011 – Jun 2016**
Bachelor of Engineering in Electrical and Electronics; GPA: 3.44/4.00 (8.28/10, top 5% of Department)

Skills

Languages: Python, C++, CUDA, DPC++

Frameworks and Libraries: PyTorch, PyTorch Lightning, Hugging Face, DGL

Experience

Research Assistant **Jan 2023– Present**
NLP Lab *University of Arkansas*

- Conducted advanced research in natural language processing (NLP) and information retrieval, focusing on leveraging machine learning to solve real-world problems.
- Published research on enhanced retrieval performance as well as social media analysis.

Graduate Intern **Jan 2022– May 2022**
HPC Solution Architect *Intel, Oregon*

- Designed and implemented a molecular dynamics simulation using Intel OneAPI DPC++, achieving a 10x improvement in performance over standard C++ implementations.

Research Assistant **Jan 2020– May 2021**
Computer System Lab *University of Arkansas*

- Developed optimized solutions on HPC environments for computation and data-intensive simulations.

IP Design Engineer **Aug 2016– Oct 2019**
Circuit Design Team *eSilicon Vietnam (now Synopsys)*

- Specialized in developing high-speed and ultra-high-speed Pseudo Two-Port (P2P) SRAMs using cutting-edge semiconductor technologies, including 28nm, 14nm, 10nm, 7nm, and 5nm processes.

Selected Publication

SetBERT: Enhancing Retrieval Performance for Boolean Logic and Set Operation Queries
Q. Mai, S. Gauch, D. Adams
2024 Eighth International Conference on Natural Language Processing and Information Retrieval

Sequence Graph Network for Online Debate Analysis
Q. Mai, S. Gauch, D. Adams, M. Huang
2024 International Conference on Information, Process, and Knowledge Management

BrainVGAE: end-to-end graph neural networks for noisy fMRI dataset
Q. Mai, U. Nakarmi, M. Huang
2022 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)