Hiep Tan To

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Bachelor's and Master's in Computer Science student at Ho Chi Minh University of Science, specializing in Software Engineering, Backend Development, and System Integration. Strong foundation in OOP, algorithms, and database systems. Experienced in building scalable pipelines, system-level applications, and contributing to open-source software.

Education

Master of Computer Science   In Progress
　University of Science - VNUHCM   *2025*

Bachelor of Technology with Honors   9.41/10.0
Computer Science and Engineering, University of Science - VNUHCM   *2021-2025*

Thesis   10.0/10.0
Generative AI-Based Virtual KOL System   *2025*

Language Skills   IELTS 6.0, VSTEP B2

Internships and Experience

Junior AI Engineer
First AI   *Jul. 2025 - Present*

　Developed recommendation systems for AI-driven search and social platforms, improving content relevance and user engagement.

　Trained and fine-tuned machine learning and LLM-based models using user behavior and contextual data.

　Implemented retrieval-augmented generation (RAG) to enhance recommendation accuracy with external knowledge.

　Integrated external LLM APIs to support semantic search and personalized recommendations.

　Optimized model inference for real-time recommendation services in production.

　Evaluated recommendation performance using metrics such as Precision@K, Recall@K, and NDCG.

Associate Machine Learning Engineer
DeepCDR Team, OPSWAT   *Jul. 2025 - Jul. 2025*

　Developed AI for file type detection, optimizing accuracy from 85% to 92%.

　Designed and trained classification models on large-scale file datasets, improving detection accuracy.

　Evaluated model performance using precision, recall, and F1-score metrics across various file types.

　Collaborated with cybersecurity experts to align ML models with threat detection requirements.

　Optimized model inference for integration into production pipeline with minimal latency.

　Conducted research and benchmarking on traditional and deep learning approaches for file analysis.

Contractor Software Engineering
Integration Team, Treasure Data   *Apr 2024 –Jun 2025*

　Built and optimized data pipelines and connectors for ETL workflows (Embulk, REST APIs).

　Developed an AI document summarization agent, improving summarization speed by 30%.

　Collaborated with cross-functional teams to design scalable and reliable data integration.

　Enhanced CLI manual testing tools to support QA processes effectively.

Undergraduate Thesis: Generative AI-Based Virtual KOL System
Guide: Dr. Le Trung Nghia, Assoc. Prof. Tran Minh Triet, University Of Science   *Sept. 2025*
Developed a generative AI system merging identity with varied styles, preserving semantics.
Built a modular, extensible architecture for easy integration of new algorithms and pipelines.

Undergraduate Research
Software Engineering Laboratory, University of Science   *Sept. 2023 – Present*

　Researched Generative AI techniques such as Stable Diffusion, GANs, and RAG.

　Contributed to successful publications, enhancing understanding of adversarial robustness and model defense strategies for NLP systems.

Technical Skills

- **Machine Learning / Deep Learning:** PyTorch, TensorFlow, HuggingFace Transformers, Scikit-learn, OpenCV
- **Generative AI:** Stable Diffusion, GANs, Retrieval-Augmented Generation (RAG), LangChain
- **Data Engineering / MLOps:** Embulk, Airflow, SQL, MongoDB, AWS (S3, EC2, Lambda)
- **Programming:** Python, C++, Java
- **Other Tools:** Streamlit, Docker, Git, Overleaf
- **Soft Skills:** Strong presentation, collaboration, and problem-solving

Scholastic Achievements

- Awarded **Outstanding Student in Scientific Research Achievement** (2023)
- Honored in the **Top 100 Outstanding Students of Vietnam National University** (2023)
- Ranked **1st Best Student of Regular Program, Faculty of IT** (2021)
- Selected among **Top 5 Students** of the Faculty of IT (2021)
- Won **Third Prize** – Provincial Competition for Excellent Students in Informatics (2020)

Key Academic Projects

Question Answering System with Transformer Models (Python, PyTorch, Hugging Face, Streamlit)
Role: Researcher | Course Project   *2024*
Built a QA system using BERT and RoBERTa fine-tuned on SQuAD, Zalo Challenge, and custom Vietnamese datasets.
Collected, cleaned, and merged 26k+ QA samples; conducted EDA to ensure balanced distributions.
Integrated Google Custom Search, improving query response time by 25%.
Explored RAG for knowledge-intensive QA tasks with over 100 research papers.
GitHub: Question-Answering

Adversarial Robustness in NLP Models (Python, PyTorch, Hugging Face, TextAttack)
Role: Researcher | Course Project   *2024*
Explored FGSM, PGD, C&W, TextFooler adversarial attacks on text classification models.
Implemented adversarial training strategy, boosting accuracy from 0% to 95.24% on adversarial test cases.
Conducted experiments on AG News dataset, achieving baseline accuracy of 75.12% (F1-score 74.58).
GitHub: Adversarial-Attacks

Budget-aware Road Semantic Segmentation in Unseen Foggy Scenes
Team Size: 3   *Aug. 2023*
Proposed efficient methods to improve autonomous driving in foggy conditions.
Published and presented at **RIVF'23 International Conference**.
Paper link: IEEE Xplore

Streamlining Virtual KOL Generation Through Modular Generative AI Architecture
Team Size: 2   *Aug. 2025*
Proposed a scalable generative AI system for Virtual KOL development (GenKOL).
Accepted at **ACM MultiMedia 25**.

Additional Certificates

- Completed **FPT AI Compass**
- Completed **AWS Academy Cloud Foundations**
- Completed **Intro to Machine Learning (Kaggle)**
- Completed **Unsupervised Learning, Recommenders, Reinforcement Learning (Coursera)**
- Completed **Advanced Learning Algorithms (Coursera)**
- Completed **Machine Learning Explainability (Kaggle)**
- Completed **Machine Learning Specialization (Coursera)**
- Completed **Ultimate AWS Certified AI Practitioner AIF-C01**
- Completed **AWS Certified Developer Associate**