

# Nguyen Quoc Khanh

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## Summary

An experienced Applied Data Scientist/AI Engineer in machine learning, MLOps, and data engineering, currently pursuing a **Master's in Computer Science** with aspirations for **PhD research** in artificial intelligence.

## Education

### University of Information Technology - VNUHCM

*Master of Science in Computer Science*

May 2025 - Present

Ho Chi Minh City, Vietnam

### University of Information Technology - VNUHCM

*Bachelor of Science in Information System (GPA: 3.19 / 4.00)*

June 2020 - Nov 2024

Ho Chi Minh, Viet Nam

- **Relevant Awards:** Merit scholarships for outstanding academic performance in two semesters and a full-tuition scholarship for exceptional academic achievement in one semester.

### Tay Nguyen Ethnic Minority Boarding School

*Major Subject in Physics (GPA: 3.5 / 4.00)*

2017 - 2020

Dak Lak, Viet Nam

- **Relevant Awards:** Gold Medal in Physics Olympic 10-3 (2017), Silver Medal in Physics Olympic 10-3 (2018)

## Experience

### Speech Processing Department - VinBigdata

*AI Engineer*

Dec 2024 – May 2025

*Data Engineering, MLOps, ASR, TTS*

- **Data Engineer** Developed and implemented **Data crawling, Labeling, Transcript Forced Alignment (TFA)** workflows within the SpeechWorld Data Framework. Improved Grapheme-to-Phoneme (G2P) models and acoustic models to enhance forced alignment accuracy and reliability.
- **Machine Learning Engineer/MLOps** Enhanced SpeechBase system with new features including model tuning, backend improvements, and online/active learning capabilities.

### Vingroup AI Engineer Training Program - VinBigData

*AI Engineer*

July 2024 – Dec 2024

*Mathematics, ML/DL/CV/NLP, AI Ethics, MLOps, Data Engineering*

- **Participated in the Vingroup AI Engineer Training Program**, a comprehensive 10-month course focused on building high-quality AI engineers with practical problem-solving skills to meet the technological resource needs of the Vingroup ecosystem.
- **Completed extensive training in key AI and data science areas**, including foundational and advanced machine learning, computer vision, natural language processing, AI ethics, linear algebra, probability, and statistics.

### THINKPROMPT CO., LTD

*Team Leader - Data Scientist*

Jul 2023 – July 2025

*Agile, MLOps, AWS EC2, MinIO, Docker, FastAPI, TensorFlow, PostgreSQL, Scraping*

- **Led a team of 3+ AI Engineers and Data Scientists**, designed and deployed 20+ predictive ML models for horse racing, achieving 20% WIN rate and 50% PLACE rate, leading to 150% net ROI and 40% reduction in client analysis time.
- **Implemented comprehensive MLOps workflows** with automated model training, validation, and deployment pipelines, significantly improving development efficiency and enabling rapid iteration of predictive models.
- **Architected and deployed end-to-end ML infrastructure** using AWS EC2, Docker, FastAPI, and PostgreSQL, building scalable data collection systems through web scraping and optimized database management for real-time horse racing prediction workflows.

### MAICO Group

*AI Engineer Intern*

May 2022 – August 2022

*Recommendation system on real estate system*

- **Developed collaborative filtering recommendation system** for real estate platform serving 50,000+ users, achieving 25% improvement in click-through rates and 15% increase in user engagement time.
- **Implemented A/B testing framework** for recommendation algorithms, analyzing user behavior data from 10,000+ daily interactions to optimize model performance and business metrics.

### Vietnam Olympiad in Informatics (VNOI)

*Algorithmic Problem Setter*

Jul 2020 – Dec 2022

*Algorithms, Tester, Problem Setter*

- Designed and tested algorithmic problems for competitive programming competitions. Conducted beta testing, considered time complexity, and provided sample input/output.
- Collaborated with other designers, generated test data, and continuously improved the competition process.

Project

Ventus - Horse Racing Betting System - ThinkPrompt | Agile, MLOps, AWS EC2, MinIO, Docker, FastAPI, TensorFlow, Scraping

- **Spearheaded development of data-driven horse racing betting system** using Agile and MLOps frameworks, processing 1,000+ races monthly with 200+ variables per horse, achieving 20% win rate accuracy and 150% net profit return.
- **Orchestrated scalable deployment architecture** with FastAPI, Docker, PostgreSQL, and MinIO on AWS EC2, delivering 100+ daily predictions with sub-300ms response times for real-time betting decisions.
- **Developed ensemble ML models using TensorFlow** and built automated reporting system serving 5+ stakeholders with real-time performance tracking and betting recommendations.

Advanced Driver Assistance Systems - Side Project | Deep Learning, Image Processing, Yolo, ADAS, TenssoRT

- Developed an Advanced Driver Assistance System (ADAS) using Python and OpenCV, implementing features such as Lane Departure Warning System (LDWS), Lane Keeping Assist System (LKAS), and Forward Collision Warning System (FCWS) to enhance vehicle safety.
- Engineered computer vision algorithms to accurately detect and track lane markers in real-time, utilizing edge detection and optical flow techniques, significantly improving driving decision support under varying environmental conditions.

Sign Language Translation - Graduation Thesis | TypeScript, HumanGAN, LLM, Skeleton Viewer, Mobile/Web

- Developed a real-time sign language translation solution with multi-language support, leveraging cutting-edge machine learning for accurate sign-to-text and text-to-sign conversions.
- Enhanced user interaction through an intuitive interface for both desktop and mobile, enabling speech-to-text, text normalization, and internationalization across 107 languages.
- Innovated with 3D avatar animations and Human GAN technology for realistic sign language visualization, complete with video output features for sharing and accessibility.

Publication & Manuscript

<b>Adapting WavLM for Vietnamese Speaker Diarization in Real-world Conversations</b>	05/2025
Thang Tuan Duy, Do Tri Nhan, Nguyen Van Huy, Nguyen Quoc Khanh, Phan Trung Kien, Mac Dang Khoa	MAPR 2025
<b>An Orchestrated Framework for Automated Speech Data Processing and Alignment</b>	05/2025
Nguyen Quoc Khanh, Nguyen Van Huy, Phan Van Tuan, Do Tri Nhan, Mac Dang Khoa	Under review
<b>The Ethics of Advanced Driver-Assistance System Based Computer Vision</b>	11/2024
Nguyen Quoc Khanh, Nguyen Hoang Trung, Nguyen Trong Hoang, Duong Thi An, Dam Van Hien, Vo Ngoc Bich Uyen	
<b>Optimizing Horse Racing Predictions through Ensemble Learning and Automated Betting Systems</b>	10/2024
Nguyen Quoc Khanh, Nguyen Phuoc Sang, Tran Thi My Quyen, Tran Vu Anh	
<b>Computer Vision for Safety Management: A Case Study in the Construction Industry</b>	10/2024
Nguyen Quoc Khanh	

Certificate

<b>TensorFlow Developer Professional Certificate</b>	2023
DeepLearning.AI	TensorFlow 2.x, Machine Learning, Deep Learning
<b>Data Science Professional Certificate</b>	2023
IBM	Data Analysis Software, Computer Programming, SQL, Probability & Statistics
<b>AI Engineering Professional Certificate</b>	2023
IBM	Apache Spark, SciPy, Keras, Pytorch, TensorFlow, Big Data
<b>Project Management: Professional Certificate</b>	2023
Google	Entrepreneurship, Scrum, Risk & Budget Management, Influencing

Award

**Physics:** Gold Medal in Physics Olympiad 10-3 (2017), Silver Medal in Physics Olympiad 10-3 (2018).  
**Languages:** TOEIC: RL 750/990, SW 270/400.  
**Scholarship:** Merit scholarships (\$200) for outstanding academic performance in two semesters and a full tuition scholarship (\$700) for exceptional academic achievement in one semester.