# Cong Nguyen Chi

Curriculum Vitae

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## WORK EXPERIENCE

**Phenikaa-X** 2024 - present

AI Engineer

**1.Facial Recognition Application for Attendance & Customer Identification:**

- Description: Developed a facial recognition application for an attendance system and customer identification on service robots.
- Technologies: Python, OpenCV, TensorFlowLite.
- Key Contributions:
  - Integrated a facial recognition model into a service robot.
  - Optimized the recognition algorithm, improving processing speed. Achieved an accuracy of 98%.

**2.Multi-Tasking Chatbot for Robot and IoT Control:**

- Description: Built a multi-tasking chatbot capable of conversation, controlling robot movements, playing music, and managing IoT devices.
- Technologies: Python, FlowiseAI, ROS, WebSocket, Java, Flutter, Speech-to-Text (STT), Text-to-Speech (TTS).
- Key Contributions:
  - Developed a fully functional chatbot interface integrated into the robot.
  - Successfully built a chatbot server using FlowiseAI, enabling scalable and modular chatbot interactions.
  - Implemented specialized agents for robot control, IoT device management, music playback, and conversation.
  - Integrated Speech-to-Text (STT) and Text-to-Speech (TTS) into the chatbot workflow, enabling seamless voice interaction.

**3.Embedded Wake Word for Chatbot Activation:**

- Description: Implemented an embedded wake word system to enhance the chatbot interaction experience on a robot.
- Technologies: C, C++.
- Key Contributions:
  - Successfully integrated the wake word detection system into the RT106 microcontroller.
  - Embedded the wake word module into the robot, enabling hands-free voice activation.
  - Designed and implemented a structured workflow for seamless chatbot interaction.
  - Optimized system performance to achieve a response time of under 500 ms.

**4.Voice-Controlled Elevator with Embedded Language Model:**

- Description: Developed an embedded voice control system for elevators using a wake word and command recognition model.
- Technologies: C, C++.
- Key Contributions:
  - Successfully embedded wake word detection and elevator control commands into the RT106 microcontroller.
  - Integrated the system into an elevator, enabling hands-free voice operation.
  - Deployed and tested the voice-controlled elevator at Phenikaa University.

**5.Robot Presentation at Vietnam Manufacturing Expo 2024:**

- Description: Presented the robot system at Vietnam Manufacturing Expo 2024, showcasing its AI capabilities and real-world applications.

**AIoT Lab** 2021 - present

Study and Research

Gained experience in scientific research and academic paper analysis. Skilled in using programming and research tools such as Python, Ubuntu, and VS Code. Some of the projects I have been involved in include:

- Now:
  - Developing a high-performance intrusion detection system using Large Language Models.
  - Large Language Models for tabular data
- Used Llama 2 for text summarization in Vietnamese.
- Utilized Lamini T5-Flan for natural language processing tasks with moderate success.

- Built a chatbot for admissions using GPT-API, delivering satisfactory responses.
- Achieved 90% accuracy in time-series anomaly detection using CNN-STL-SR.
- Researched human action recognition using deep learning.
- Participated in the self-driving car research project in 2021, organized by Phenikaa-X.

## PUBLICATION

Vuong T.-C., Nguyen C. C., Pham V.-C., Le T.-T.-H., Tran X.-N., and Luong T. V. "Effective Intrusion Detection for UAV Communications Using Autoencoder-Based Feature Extraction and Machine Learning Approach." Proceedings of NOLTA 2024.

## LICENSES & CERTIFICATIONS

- Building RAG Agents with LLMs - NVIDIA course 2025
- Generative AI with Large Language Models - Coursera 2025
- Introduction to Transformer-Based Natural Language Processing - NVIDIA course 2025 - 2027
- Programming for Everybody (Getting Started with Python) 2024
- IBM Project Manager - Coursera 2024
- AWS Academy Graduate - AWS Academy Cloud Foundations - Amazon Web Services (AWS) 2023

## EDUCATIONAL BACKGROUND

**Phenikaa University** 2020 - 2024

Information Technology

GPA: 3.45
Researching Artificial Intelligence. Actively involved in AIoT Lab. Participated in research competitions and entrepreneurship initiatives at the university level.

## SKILLS

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| **Hard skills** | Git, Deep Learning, Python Programming, Neural Network Architectures (LSTM, Transformer), Text Preprocessing, Tokenization, Data Visualization. |
| **Soft Skills** | Strong English communication skills, experience in organizing competitions and group activities. |

## ACHIEVEMENTS AND AWARDS

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| Second Prize in University-level Research Competition | 2021 |
| First Prize in Department-level Research Competition | 2021 |

## HOBBIES

- Dog Training & Animal Behavior: Passionate about training dogs and exploring animal behavior characteristics.
- Football, Music

## REFERENCE

Dr. Luong Van Thien - Business AI Lab, National Economics University
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