

# HOANG MINH SON

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## EDUCATION

### Hanoi University of Science and Technology

Bachelor's Degree - CPA: 3.56/4

Vietnam

Sep, 2019 - Sep, 2023

### Chi Linh High School

High School Diploma - Specialized in Physics

Vietnam

Sep. 2016 - Jun. 2019

## AWARDS

- **Second prize** in Digital Empowerment track at HackHCMC 2024 - I am the leader of the team and the main developer, guiding the team to use a combination of deep learning models, including computer vision combined with large language models, to solve the business problems set forth by Heineken Brewery.
- **Third prize** in Hai Duong Provincial Physics Excellence Contest (2016)
- **A-level Scholarship** in the 2020, 2021 semesters at **Hanoi University of Science and Technology** a scholarship of excellence given to the top 3% of distinguished students for each major, based on criteria of training and academic attainments; and B-level scholarship in the 2020.1 semester
- Participated in **The 40th Student Research conference Year 2022-2023** at **Hanoi University of Science and Technology**

## PUBLICATIONS

- H. H. Nguyen, Q. T. Le, V. Q. Nghiem, **M. S. Hoang**, D. A. Pham "A novel violence detection for drone surveillance system", *4th International Conference on Communication, Circuits, and Systems*
- H. H. Nguyen, V. Q. Nghiem, **M. S. Hoang**, T. K. Nghiem, N. M. Dang "A Novel Variant of YOLOv7-Tiny for Object Detection on Aerial Vehicle Images", *5th International Conference on Communication and Intelligent Systems*

## TECHNICAL SKILLS

- Programming Languages: **Python, C/C++, Javascript**
- Frequently-used Frameworks Tools: **Pytorch, Tensorflow, PaddlePaddle, OpenCV, Flask, Django, ReactJs, React Native, ExpressJS**
- Developer Tools: **Docker, Git, Postman, Apache Kafka**
- CI/CD: **Jenkins, Heroku, Gitlab**
- Cloud service: **AWS, S3, EC2, Lambda**
- Database: **PostgreSQL, MongoDB**
- Vector database: **ChromaDB, FAISS**
- Operator systems: **Linux, Windows**

## WORK EXPERIENCES

### Hackathon hackhcmc 2024

Leader and core developer

Hochiminh City, Vietnam

Jun. 2024 - Jun. 2024

- Analyzed business requirements and needs of Heineken Brewery to develop an end-to-end system with appropriate AI models.
- Integrated various deep learning models such as YOLO, OCR, segmentation, large language models, and zero-shot learning to address all business challenges.
- Developed the entire system, including a mobile app for capturing images, an AI server, and a web dashboard for Heineken employees.

### EDABK Research Lab at the University of Engineering and Technology, Hanoi University

Student Researcher

Hanoi, Vietnam

Oct. 2022 - Present

- Researched and developed a real time violence detection from drone algorithm based on yolov3 architecture with suitable model's architecture modifications. Deployed on Raspberry Pi model 3B to demonstrate the real-time processing feature.
- Researched and developed new light weight model based on yolov7-tiny architecture, Attention mechanism and Focal Loss for Small Object detection in Visdrone Dataset.
- Researched and developed an audio deepfake tool using Text to Speech and Speech to speech method with modern model like ViTs and CycleGAN.
- Implement simple audio deepfake detection by transfer learning Vggish model, accuracy reach 92%
- Deploying a deepfake face detection model on Samsung mobile device, automatically identifying and running the model upon receiving a video call.

### ISOFH, JSC - Innovative Solution For Healthcare

Fullstack AI Developer

Hanoi, Vietnam

March. 2022 - Present

- **Computer Vision:** Researching, developing, and deploying deep learning models for medical image diagnosis, healthcare application on edge device include:
  - Analyzing and identifying brain tumors and diagnosing brain tumors based on MRI brain images;
  - Segmenting lesions and diagnosing pneumonia in flat chest CT images.
  - Building an Age Estimation model for Vietnamese individuals to automatically estimate age, thereby suggesting meditation session durations.
  - Developing and deploying deep learning models at the edge, adjusting meditation postures for users based on pose estimation.
  - Building a facial recognition system for automated patient check-in kiosks deployed at Sakura project hospitals.
- **Natural Language Processing:** Researching and building Vietnamese Chatbot applications, Large Languages Model

- Building Chatbot for Admissions at the School of Electrical Engineering, Hanoi University of Science and Technology. Using DietClassifier, Transformer architecture. Optimize the model with Large Language Model Featurizer like PhoBert, GPT-2, ViSpacy .... Model accuracy gain 97% on the private dataset for admissions with about 864 intents.
- Building end to end project RAG agent building system. Allow Enterprise user to build their AI Agent that has knowledges about Enterprise private uploaded documents.
- Experienced NLP tasks: Text processing, information retrieval, name entity recognition, sentiment analysis, and machine translation.
- **Software Development:** Proficiently utilizing various technologies to develop and maintain web, mobile app projects within the **IVIRSE Digihealth Ecosystem, a blockchain-based digital healthcare platform**, include: IVIRSE payment gateway, IVIRSE Datamarket place, IVIRSE APP, CMS management system.

## ACADEMIC ACTIVITIES

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### AI RESEARCHER - EDABK

Researcher - EDABK Lab

Hanoi, Vietnam

Jan. 2020 - Present

- Accumulated knowledge on computer vision: semantic segmentation, object detection, pose estimation

### DEEP LEARNING COURSE COURSERA

Scholar

Hanoi, Vietnam

Aug. 2022 - Sep. 2022

- Joined and completed an intensive AI training program focusing on computer vision by Andrew Ng.
- Joined and completed an course with theory about fedearred learning system and practice with pytorch.

## REFERENCES

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(1) Dr. Nguyen Huy Hoang, Lecturer of the Department of Communication Engineering  
School of Electrical and Electronic Engineering, Hanoi University of Science and Technology  
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