









## CONTACT ME

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## SKILLS SUMMARY

- Backend: Java (Spring boot, Spring cloud)
- SQL: SQL Server, MySQL, PostgreSQL
- NoSQL: MongoDB
- Frontend: Nextjs, React, Typescript, Javascript, HTML, CSS
- AI (Python, TensorFlow, Explainable AI)
- Docker  
Git  
Amazon Web Services (EC2)

## EDUCATIONAL PROCESS

Natural Resources and Environment University  
Fourth year student  
Software Technology Major  
TOEIC: 670  
GPA: 3.4

### Pneumonia Prediction (Vision Transformer Model)

- **Summary:** Developed a web-based application to predict pneumonia from chest X-ray images using a ViT model, providing accurate and instant results.

- **Github link:** [Repo](#)

- **Data link:** [data 1](#), [data 2](#)

- **Tech Stack:** Python (Tensorflow), Vision Transformer (model), Git, Github.

- **Contributions:** Trained and fine-tuned a ViT model on chest X-ray data for pneumonia detection (88% accuracy). Applied real-time data augmentation and deployed the model via a lightweight web app for instant prediction. Used Git and GitHub to manage version control and regularly update project source code.

# HỒ TUẤN KHANH

## SOFTWARE ENGINEER

## INTRODUCTION

I am a student at the University of Natural Resources and Environment in Ho Chi Minh City just finished year 4. My major is software technology. This is my portfolio: <https://hoofkhanh.netlify.app/>

## WORK EXPERIENCE

### Intern at “Bệnh viện nhi đồng 2”

- **Duration:** 3 months.
- **Contributions:** Perform small modules such as code debugging, code testing, learning hospital procedures, and coded the pneumonia prediction application under the guidance of the company's seniors.

## PERSONAL PROJECT

### Sound Service Web (Microservice)

- **Summary:** Developed a platform connecting customers with music artists, providing full features such as beat purchasing, artist hiring, job posting, real-time messaging, service reviewing, and various supporting functionalities to enhance user experience.
- **Github link:** [Repo](#)
- **Services:** User, Artist, Customer, Job, Beat, Purchase Beat, Hire, Notification (real time), Payment, Favorite, Review, Conversation (real time).
- **Tech Stack:**
  - Frontend: ReactJS, Javascript, HTML, CSS.
  - Backend: Java, Spring Boot, Spring Cloud (Config, Eureka, OpenFeign, Gateway).
  - Databases & Migration: PostgreSQL (JPA + Flyway), MongoDB.
  - Communication: Kafka (services), WebSocket (realtime).
  - Security: OAuth2 (Keycloak).
  - Email Handling: Thymeleaf (templating), MailDev (testing).
  - Tool: Docker, Maven, Git, Github.
- **Contributions:**
  - Designed and developed a scalable and maintainable microservices architecture.
  - Integrated Spring Cloud Gateway with Eureka for dynamic routing and client-side load balancing.
  - Implemented OAuth2 authentication (with access & refresh tokens) and secured user data using Keycloak.
  - Utilized Kafka for asynchronous inter-service communication and data synchronization.
  - Managed database versioning and migration using Flyway to ensure safe schema evolution.
  - Built real-time messaging and notification features using WebSocket to enhance user engagement.
  - Simulated email delivery using MailDev and rendered HTML email templates with Thymeleaf during testing.
  - Developed frontend components using ReactJS to support user interaction with features.
  - Used Docker and Docker Compose to define multi-container environments and manage data.
  - Used Git and GitHub to manage version control and regularly update project source code.

### Antimicrobial Peptide Prediction(Transformer + XAI + Amazon EC2)

- **Summary:** Predicted antimicrobial peptides using a Transformer model combined with XAI (LIME) to explain the result, trained on EC2 GPU.
- **Github link:** [Repo](#)
- **Data link:** [NCBI Proteins](#)
- **Tech Stack:** Python, Tensorflow, BiopPython, Transformer, LIME, Amazon EC2, Git, Github.
- **Contributions:**
  - Crawled raw peptide data from NCBI.
  - Split peptides > 50 amino acid into 10–50 amino acid subsequences.
  - Extract features based on peptide sequences for model input.
  - Trained a Transformer-based model on 3 datasets (GenBank, non-GenBank, combined), all achieving accuracy close to 100%.
  - Used Amazon EC2 (GPU virtual machine) for efficient training.
  - Used LIME to explain model predictions and highlight contributing features.
  - Used Git and GitHub to manage version control and regularly update project source code.