

# VU TRONG CHAU

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## SUMMARY

Machine Learning Engineer with proven experience in designing, training, and deploying production-ready ML and NLP systems. Skilled in building end-to-end pipelines, optimizing models for accuracy and efficiency, and deploying scalable applications on AWS, GCP, and Azure. Recognized for bridging research and production, scaling data pipelines, and applying transferable problem-solving skills, forecasting, and predictive analytics, with expertise in LLMs, generative AI, and MLOps to turn complex data into actionable business insights.

## TECHNICAL SKILLS

**Programming Languages:** Python, C++, JavaScript, MATLAB, SQL

**Machine Learning & AI:** Deep Learning, Neural Networks, NLP, LLMs, Decision Trees, Random Forest, CNNs, RNNs, XGBoost, SVM, Gradient Boosting

**Frameworks & Libraries:** TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy, Flask, D3.js

**MLOps & Cloud:** AWS SageMaker, GCP Vertex AI, Azure ML, Docker, Kubernetes, CI/CD Pipelines

**Data & Visualization:** Jupyter, SQL, Tableau, Power BI, Hadoop

**IoT & Hardware (Transferable):** Arduino, PCB Design, SolidWorks, AutoCAD

## PROJECTS

### Threat Detection using Machine Learning

Jan 2025 – July 2025

- Developed a cyberbullying detection system that classifies harmful online content using supervised machine learning models that achieve 92% accuracy (Logistic Regression, XGBoost, Naive Bayes, Random Forest, Decision Tree).
- Applied NLP preprocessing techniques include tokenization, stemming, and TF-IDF vectorization on 72,000+ labeled social media texts. Engineered semantic, syntactic, sentiment, and pragmatic features to enhance classifier performance.
- Developed a streamlined Flask interface for real-time input and results, emphasizing the identification of offensive words and generating a bullying severity score for better interpretability and effective real-time moderation.

### Global Population Prediction

Jan 2025 – May 2025

- Developed an application to forecast global population trends from 1960 to 2023 for all countries in the world.
- Build ML models that achieve 95% accuracy for prediction. Designed a user-friendly web interface with charts such as a choropleth map, line charts, and bar charts to help users easily manage and update information.
- Implemented using Python, D3.js, JavaScript, Python Web Server, Tailwind CSS, and Git, enabling scalable updates and easy user interaction.

### Sleep Quality Prediction

Sep 2024 – Dec 2024

- Developed machine learning models (Logistic Regression, Random Forest, CNNs, RNNs) to predict sleep quality scores from 40,000+ lifestyle and data records.
- Engineered features including age, sleep duration, stress, heart rate, and daily steps, boosting performance to 96% accuracy (F1-score 0.96).
- Deployed a Flask dashboard enabling users to input lifestyle metrics, receive real-time predictions, and access personalized recommendations to improve sleep quality.

## EDUCATION

### Troy University

Troy, AL

**Master of Science in Computer Science - Artificial Intelligence** | GPA: 3.5

July 2025

Key Courses: Analysis of Algorithms, Computer Architecture, Machine Learning, Advanced Artificial Intelligence, Data Visualization.

### University of Sunderland

Sunderland, UK

**Bachelor of Engineering in Electronic and Electrical Engineering** | UK 2:1 Honours (3.5 GPA equivalent)

July 2021

Key Courses: Embedded systems, Electronic Circuits and Devices, Electrical Power, Electronic System, Manufacturing System Design.

## CERTIFICATIONS

Generative AI with Large Language Models | [Link](#)

Sep 2025

LangChain for LLM Application Development | [Link](#)

Aug 2025