

Kim Khai Nguyen

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Internship Availability: 8 May 2024 – 15 April 2025 (12 months)

EDUCATION

Nanyang Technological University (NTU)

Aug 2021 – Jun 2025

- **Bachelor of Engineering (Electrical and Electronic Engineering)**
- **Honours (Distinction)** (Expected)
- Specialisation: **Info-Communications Engineering (Data Intelligence and Processing)** (Expected)
- Relevant Modules: (1) *From Computational Thinking to Programming* (2) *Data Structure and Algorithms* (3) *Introduction to Data science and Artificial Intelligence*.

VIRTUAL TRAINING AND LEARNING & DEVELOPMENT

- Coursera Relevant Modules: (1) *IBM Data Science* (2) *Mathematics for Machine Learning* (3) *Machine Learning Specialization* (4) *Deep Learning Specialization*.
- Udemy: (1) *Learn Python Programming Masterclass* (2) *End-to-End Machine Learning: From Idea to Implementation* (3) *MLOps Bootcamp: Mastering AI Operations for Success – AIOps*.
- EdX: *Probability: The Science of Uncertainty and Data*.

WORK EXPERIENCE

Corning Singapore Holdings Private Limited, *Data Analyst Intern*

June 2023 – Dec 2023

- Utilized Jupiter Notebook and Natural Language Processing to analyze global spending data, uncovering opportunities for bulk purchase discounts and achieving enhanced cost savings.
- Optimized and standardized 29 dashboards development, implementing strategic optimizations to boost dashboard refreshing efficiency in Power BI.
- Developed a highly efficient Python script for web scraping and price data processing across six websites, resulting in a remarkable 90% reduction in time required previously.
- Analyzed supplier performance data and constructed an automated solution using advanced VBA code for rapid generation of supplier performance reports, achieving an impressive processing time of 3 seconds.
- Implemented and deployed a Power Automate flow to streamline communication between stakeholders and data analyst team, facilitating efficient reporting of dashboard issues, resulted in improved collaboration and a more responsive resolution process for resolving dashboard issues.

ACADEMIC PROJECTS / PERSONAL PROJECTS / RESEARCH EXPERIENCE

Advanced Pneumonia Detection System

Feb 2024 – Mar 2024

An MLOps-powered solution for automating pneumonia detection

- Led the development of an end-to-end pneumonia detection system by leveraging a custom pretrained VGG16 model, significantly improving diagnostic patient outcomes with 95% accuracy.
- Established production-grade MLflow tracking with DagsHub and lightweight DVC for comprehensive experimentation tracking, data versioning and model versioning, ensuring reproducibility, scalability, accountability in model development.
- Developed a user-friendly Flask application to facilitate model training and image classification, enhancing accessibility and user experience.
- Streamlined deployment with AWS CICD via GitHub Actions, automating Docker image creation, ECR repository setup, and EC2 instance provisioning for seamless model deployment, demonstrating expertise in cloud-based infrastructure and DevOps practices.

Deep Learning based Automatic Modulation Recognition

Jan 2024 – April 2024

An advanced Transformer-based model for robust signal modulation classification

- Utilized MATLAB to generate synthetic signal datasets encompassing various modulation formats and channel impairments representative of real-world scenarios.
- Developed a data preprocessing pipeline to consolidate signal data from multiple CSV files into a single pickle file, ensuring seamless data integration and preparation for model input.
- Implemented a Transformer-based model architecture, integrating convolutional, LSTM, and self-attention layers using TensorFlow to capture intricate patterns in modulation signals.
- Achieved a remarkable accuracy of 92% in modulating signal classification, surpassing industry benchmarks and demonstrating the effectiveness of the developed model in accurately identifying modulation schemes in wireless communication signals.
- Documented all aspects of the project, including data generation processes, model architecture, training procedures, observations, and evaluation metrics, ensuring reproducibility and transparency in research.

LLM-Powered Knowledge Retrieval System

Jan 2024 – Jan 2024

A Chatbot to query information from your documents

- Led the development of an advanced chat system, leveraging LangChain RetrievalQA and OpenAI API. Tailored for effortless extraction and delivery of pertinent data from diverse PDF documents through conversational queries. Significantly enhanced user experience by streamlining access to critical information.
- Successfully deployed the interactive chat application on Streamlit. Delivered an intuitive and accessible interface, empowering users to navigate vast document repositories effortlessly. Demonstrated the integration of cutting-edge AI and retrieval technologies for efficient and real-time querying capabilities, setting new standards in information accessibility.

Face Mask Detection

Dec 2023 – Jan 2024

A web app for real-time face mask detection

- Utilized images, annotation files processing and Faster-RCNN model (Region-based Convolutional Neural Network) to clean and train Kaggle Dataset for detecting if people are wearing mask or not based on pictures.
- Achieved a precision rate of 94%, signifying the model's proficiency in correctly identifying individuals wearing masks in a picture.
- Integrated model seamlessly with Streamlit, enabling users to upload images or engage in real-time face mask detection.

Sentiment Classification of Food Review

Nov 2023 – Dec 2023

- Applied **Transfer Learning** techniques utilizing BERT-based model (Bidirectional Encoder Representations from Transformers) for nuanced task of classifying food reviews into positive or negative sentiments.
- Attained an impressive precision rate of 91%, underscoring model's adeptness in accurately categorizing food reviews, provide valuable insights into customer sentiments analysis.

Prediction of Cardiovascular Disease (Team Leader of 4 members)

Aug 2022 – Dec 2022

A machine learning model to predict cardiovascular disease

- Successfully applied Python Programming with 4 Machine Learning Models (i.e., Random Forest, Decision Tree, Logistic Regression, KNN) to clean and train Kaggle Dataset for predicting if patient suffered cardiovascular disease based on critical parameters.
- Implemented hyperparameter tuning using GridSearchCV to determine optimal parameters values for Machine Learning Models.
- Concluded that Decision Tree was the most ideal model with 83% prediction accuracy and was significantly correlated with critical factors (e.g., Blood Pressure, Cholesterol).

LEADERSHIP / CO-CURRICULAR ACTIVITIES / COMMUNITY INVOLVEMENT / VOLUNTARISM

NTU Vietnamese Freshmen Orientation, Camp Group Leader

Jul 2022 – Aug 2022

- Led 40 team members with freshmen in 3 Day-Camp.
- Planned and hosted Orientation Group's Events (e.g., Bonding Session, Outing Day, Camp's Activities).
- Generated bonding activities, social games, and cheering celebrations.
- Advised and guided freshmen to adapt within NTU campus life and academic aspects readily.

Haven A Good Time Project

Aug 2023 – Nov 2023

- Contributed as a member of the Corning Positive Working Environment team to establish a joy room at The Salvation Army The Haven, providing children with opportunities for learning and immersive reading experiences.
- Collaborated with team members to plan and execute logistics for the event day, ensuring smooth workflow and efficient allocation of resources.
- Played a vital role in the setup and assembly process, actively participating in tasks and responsibilities assigned by the logistics team.
- Dedicated three months to the preparation and organization of the project, demonstrating commitment and teamwork in creating a positive impact on the community.

Meals on Wheels

Aug 2023 – Aug 2023

- Participated in the Meals-on-Wheels program aimed at meeting the daily nutritional needs of home-bound elderly individuals.
- Collaborated with TOUCH Home Care's Meals-on-Wheels initiative to deliver meals to elderly individuals living alone, ensuring their daily sustenance and well-being.

SKILLS / HOBBIES

- **Programming Languages:** Python, SQL, Visual Basic Code (VBA), MATLAB.
- **Data Science & Machine Learning:** TensorFlow, PyTorch, Keras, FastAI, Scikit-Learn, OpenCV, Hugging Face, Pandas, NumPy, Beautiful Soup, Selenium.
- **Big Data & Cloud Computing:** AWS, Azure, Google Cloud Platform, IBM Cloud, Spark, Hadoop.
- **DevOps & MLOps:** Git, GitHub, MLflow, Docker, DagsHub, Dask, Streamlit, Flask, Data Versioning Control (DVC), Prometheus, Jenkins, Heroku.
- **Database:** MySQL, PostgreSQL, SQLite, Firebase, MongoDB.
- **Tools:** Power BI, Tableau, Power Automate, Excel, Power Point.
- **Soft Skills:** Team player, Self-motivated, Detail-oriented, Problem-solving, Initiative.
- **Hobbies:** Travelling, Play Tennis, Piano & Launchpad.