Dang Van Bao

Graduate Research Assistant

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Summary

Enthusiastic researcher with a background in machine learning and healthcare technology. Experienced in AI-driven healthcare projects involving medical image analysis, predictive health systems, and wearable sensing for rehabilitation. Strong interest in integrating sensing technologies and predictive health models into mobile healthcare systems to support accessible and innovative healthcare solutions.

Education

Sai Gon University 2019 – Anticipated June 2026
[Information Technology / Engineer] *GPA: 3.2/4.0*

Skills

Programming & Tools: Python, C#, PyTorch, TensorFlow, Keras, Scikit-learn, OpenCV, ImageJ, 3D Slicer
Machine Learning: Prediction modeling, diagnostic support systems, healthcare data analysis, applied machine learning for clinical tasks
Medical Imaging: Image enhancement, segmentation, feature extraction, texture analysis, ultrasound image analysis
Research & Collaboration: Multidisciplinary teamwork, technical communication, presentation to technical and non-technical audiences, research documentation

Research Experience

Healthcare AI Research | *Researcher* 2024 – Present

- Analyzed healthcare datasets and developed machine learning models to automate processes and improve predictive health systems and patient outcomes.
- Designed a user-friendly C# interface for healthcare professionals to interact with AI models, improving usability and supporting adoption in clinical settings.
- Optimized system functionality to reduce manual effort and improve efficiency in healthcare workflows.
- Documented system functionality and created user guidelines to support knowledge transfer and real-world deployment.
- Achieved 89% model accuracy and reduced manual processing time by 50% in healthcare-related workflows.

Publications

Kumaralingam, L., **Dang, V.B.**, Le May, K., Alavi, J., Huynh, H.Q., Le, L.H. Accepted Feb. 2025

- *Artificial Intelligence-Assisted Approach to Assessing Bowel Wall Thickness in Pediatric Inflammatory Bowel Disease Using Intestinal Ultrasound Images.* **Journal of Crohn's and Colitis** (Impact Factor: 8.3, Q1).

Selected Projects

Post-Stroke Rehabilitation System | *Wearable Sensing, EMG, IMU, EEG* May 2025 – Present

- Developing a wearable system positioned near the ear to evaluate facial muscle function and support post-stroke speech rehabilitation.
- Integrates EMG, IMU, and EEG signals to monitor recovery and support future predictive mobile healthcare applications.
- Conducted as a remote research collaboration related to the University of Montana.

Fall Detection Using IMU Sensor | *MPU6050, ESP32, Embedded Sensing* Aug. 2025

- Developed a fall detection system for elderly users in home environments using the MPU6050 IMU sensor and ESP32.
- Combined accelerometer and gyroscope data to detect motion, rotation, acceleration, and tilt for convenient and effective monitoring.

CNN-Based Data Interpolation | *CNN, SRGAN, Super-Resolution* Dec. 2024

- Explored CNN-based interpolation and super-resolution methods to overcome limitations of traditional interpolation approaches.

- Applied SRGAN to reconstruct high-resolution details from low-resolution images, improving image quality for medical imaging and computer vision tasks.

AI-Assisted Bowel Wall Thickness Assessment | *Medical Imaging, Machine Learning, C#* Aug. 2024

- Developed AI models to assess bowel wall thickness in pediatric inflammatory bowel disease using intestinal ultrasound images.
- Built a user-friendly C# interface for healthcare professionals to interact with the AI system in clinical settings.

Breast Tumor Classification from Ultrasound Images | *Texture Analysis, Neuro-Fuzzy Model* Mar. 2024

- Analyzed breast ultrasound images using statistical texture features to classify benign and malignant tumors.
- Proposed a neuro-fuzzy model to estimate tumor malignancy likelihood based on texture-driven imaging features.

Vietnamese Voice Bot for Financial Services | *NLP, TTS, Scrum, Business Analysis* Jan. 2024

- Collaborated with a senior Business Analyst and project supervisor to prepare a proposal for a Vietnamese Voice Bot tailored to the financial sector.
- Supported task planning and team coordination using the Scrum framework to improve collaboration and project progress.
- Contributed to the development of a Vietnamese NLP model for accurate intent understanding and language processing.
- Assisted in integrating the NLP model with a Text-to-Speech engine to enable real-time voice interactions for financial conversations.

Stock Price Forecasting and Investment Decision Support | *XGBoost, LSTM* Dec. 2023

- Applied Linear Regression, XGBoost, and LSTM models to forecast Vinamilk stock prices and support investment decision-making.
- Evaluated and compared model performance using RMSE, MAE, and R-squared to identify the most suitable approach for real-world data.

Awards & Certifications

Consolation Prize | *Festival of Undergraduate Research and Creative Activities, University of Alberta* Mar. 2024

- Recognized for the project *Classification of Breast Tumors on Ultrasound Images Based on Texture Analysis.*

SEED Scholarship | *Canadian Government Sponsored* Jun. 2023

- Awarded a 100% scholarship valued at **$15,900** to support eight months of undergraduate research.

Top 8 | *START UP DEMODAY, International University – VNU HCMC* Dec. 2022

- Project: Psychological Counseling Application.

Top 3 | *GREENOVATOR HACKATHON, Bosch Vietnam* Dec. 2021

- Project: Air Quality Forecasting Application.

Top 10 | *BUSINESS INTELLIGENCE SEASON 5, University of Economics and Law* Jun. 2020

- Project: Forecasting Sales Trends and Analyzing Customer Behavior.

Consolation Prize | *HACKATHON 2020, Ho Chi Minh City University of Technology and Education* Dec. 2019

- Project: Time Management Application for Students and Lecturers.

IELTS 7.0

- English proficiency certification.