

WORK EXPERIENCE (SELECTED)

Research Engineer

Institute for Infocomm Research - A*STAR

February 2020 - Present

- Train Automatic Recognition System (ASR) using Kaldi (classical ASR Engine) and Espnet (state-of-the-art end-to-end ASR engine) for Bangali and Tamil Language.
- Optimize Language model by training text corpus using arpa ngram and rnnlm model. Help improve Word-Error-Rate (WER) by 10%.
- Solve denoising audio data problem by applying state-of-the-art bi-LSTM model.

Technologies: Kaldi, Espnet, Pandas, Numpy, Pytorch

Master of Engineering Candidate

Satellite Research Centre

August 2016 - August 2018

- Implemented a design of Star Tracking Algorithms onto a Programmable System-on-a-chip system.
- Optimized the pattern recognition algorithm runtime by implementing the connected component labeling algorithm on parallel processors. Runtime is improved 64% on average compared to traditional processor approach.
- Optimized and designed the pattern searching algorithm by applying k-ary tree data structure. Time complexity and runtime improved 31%, but space complexity and memory increased 22%.

Source code: [git.io/vpucY](https://github.com/dangkhoadl)
Publication: <https://doi.org/10.32657/10220/48371>

EDUCATION

Master of Engineering

Nanyang Technological University

August 2015 - August 2018

- School of Electrical and Electronics Engineering - Research.
- THESIS TITLE: Implementation of An Autonomous Star Recognition Algorithm using Hardware-Software Co-Processing Approach.

Bachelor of Engineering

Vietnam National University HCMC

August 2010 - April 2015

- Ho Chi Minh City University of Technology - Electrical and Electronics Engineering - Second Upper Honour.
- Major in Automation and Control engineering, minor in Robotics and Embedded System Design.
- THESIS TITLE: Applying of Fuzzy Logic Algorithm on Legged Locomotion Robot.

PROJECTS (SELECTED)

Problem Solving

- Solve Computer Science and Competitive Programming Problems.

Source code: <https://github.com/dangkhoadl/my-CS-Notebook>

- Solve Machine Learning Problems.

Source code: <https://github.com/dangkhoadl/my-Machine-Learning>

Stock Price Predictor

- Predicted Stock Price data by Linear Regression and ARIMA modeling approaches.
- Optimized Model's accuracy by 20% by performing feature engineerings and hyper-parameters optimizations.
- Evaluated and Backtested models based on Live Stock Price Simulator on MetaTrader4.

Financial Knowledge:

COURSERA - [INTRODUCTION TO FINANCIAL MARKETS](#)
COURSERA - [PORTFOLIO AND RISK MANAGEMENT](#)

Technologies: pandas, numpy, matplotlib, sklearn
Source code: [git.io/vpuCA](https://github.com/dangkhoadl)

Dota 2 Hero Recommender System

- Recommended game characters based on historical user data collected by Open Dota API.

Technologies: flask, pandas, numpy
Source code: [git.io/fhV1q](https://github.com/dangkhoadl)

CERTIFICATES AND RELATED COURSEWORKS

- COURSERA - [DATA STRUCTURES AND ALGORITHMS SPECIALIZATION](#)
- COURSERA - [MACHINE LEARNING SPECIALIZATION](#)
- UDACITY - [MACHINE LEARNING ENGINEER NANODEGREE](#)
- COURSERA - [MATHEMATICS FOR MACHINE LEARNING](#)
- COURSERA - [INTRODUCTION TO DEEP LEARNING](#)
- COURSERA - [BIG DATA ESSENTIALS: HDFS, MAPREDUCE, AND SPARK RDD](#)
- MIT-6.041-PROBABILISTIC SYSTEMS ANALYSIS AND APPLIED PROBABILITY
- UC BERKELEY - CS162 - OPERATING SYSTEMS AND SYSTEMS PROGRAMMING
- UIUC - CS425 - DISTRIBUTED SYSTEMS

COMPETITION ACHIEVEMENTS

- GOOGLE CODE JAM 2018 - ROUND 2 QUALIFIER - TOP 10% CANDIDATES