Dang Le Dang Khoa

Language Proficiency: **Python, C/C++, Bash**

(+65) 8398 3951
dangledangkhoa@gmail.com
github.com/dangkhoadl
linkedin.com/in/dangledangkhoa

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 South-East Asia languages, improve Word-Error-Rate (WER) by 10% on average.
- Solve denoising audio data problem by applying bi-LSTM DenseNet model.
- Optimize kaldi-based system and research on Embedding neural network for the speaker recognition task.

Toolkits: **kaldi, Espnet E2E**
Technologies: **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
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)

WER-in-CPP

- Develop an open-source API to calculate Word-Error-Rate for ASR project based on Minimum-Edit-Distance problem.
- Develop new features compared to existing kaldi code: Provide WER-per-utterance utilizing upon dataset statistical analysis.

Technologies: **C++**
Source code: https://github.com/dangkhoadl/WER-in-cpp

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

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

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