

Education

University of Washington, Data Science and Statistics Major, 2018 - 2019.

Relevant Courses: CSE 143 Computer Programming II, INFO 201 Technical Foundation, CSE 154: Web Programming, CSE 416 Introduction to Machine Learning, CSE 414 Introduction to Database Systems

Average GPA: 3.97 (Cumulative)

University of Maryland, 2020-2022.

Awards and Competitions

AIVIVN Sentiment Analysis Competition

Spring 2019

- Design a text classification system for positive v.s negative product reviews (in Vietnamese)
- Models: word2vec + weighted average of (hierarchical) self-attention neural network, residual network.
- Final Result: 1st Place in Public Leaderboard (F1: 0.90087) and Private Leaderboard (F1: 0.90012)
- GitHub Repository: https://github.com/petrpan26/Aivivn_1

Emotion Recognition Competition 2019

Fall 2019

- Design a system to classify the emotion of the speaker from raw audio data
- Models: MFCC for preprocessing, convolutional neural network. Developed using the neural network toolbox (see below)
- Result: 8th place in the first round, invited to present in the second round.
- GitHub Repository: <https://github.com/nhatsmrt/erc>; Contest Website: <https://erc2019.com/>

Main Projects

Neural Network Toolbox

Summer 2019

- Implement common deep learning procedures and papers using PyTorch for quick prototyping and model developing.
- GitHub Repository: <https://github.com/nhatsmrt/nn-toolbox>
- Documentation: <https://nhatsmrt.github.io/nn-toolbox/>

Arbitrary Style Transfer

Summer 2019

- Given an arbitrary content photo and a piece of artwork, transfer the style of the artwork to the photo.
- Based on Huang and Belongie's paper "Arbitrary Style Transfer in Real-time with Adaptive Instance Normalization"
- Implemented using PyTorch and my toolbox (see above).
- GitHub Repository: <https://github.com/nhatsmrt/torch-styletransfer>

Denoising Dirty Documents

Summer 2018

- Used a convolutional autoencoder to restore documents affected with synthetic noises window-by-window.
- Implemented a convolutional neural network with residual connections on Tensorflow.
- GitHub Repository: <https://github.com/nhatsmrt/DenoisingDirtyDocuments>

Experience

Project in Mathematics and Application, Mentor

2017 - 2019

- Develop the curriculum, lecture on optimization techniques for neural networks, and supervise neural network projects for a selected group of 20-30 talented high school students from all over Vietnam.

Skills

Proficient With

1. *Java (3 years)*
2. *Python(3 years):*
 - Data Processing and Visualization with numpy, pandas, matplotlib
 - Machine Learning and Deep Learning with Scikit-learn, Networkx, Tensorflow, Keras, PyTorch
3. *SQL*
4. *Data Structures and Algorithms*

Familiar With:

1. *Client-Side Web Programming:* Client-Side with HTML, CSS, Javascript, some experience with React
2. *MapReduce paradigm, Spark, AsteriskDB and SQL++*
3. *R*