

## Education

University of Washington, Data Science and Statistics Major, 2018 - 2022 (Expected).

**Relevant Courses:** CSE 143 Computer Programming II: 4.0, INFO 201 Technical Foundation: 4.0; CSE 416 Introduction to Machine Learning: 4.0; CSE 154: Web Programming: 3.9

**Average GPA:** 3.96 (Cumulative)

## 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](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, deep neural network. Developed and trained using the neural network toolbox (see below)
- Result: 8th place in the first round, invited to present in the second round.
- 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>

### Automatic Colorization with Deep Learning:

Winter 2019

- Colorize grayscale images with deep neural network.
- Implement lighter-weight versions of Baldassarre et al.'s and lizuka et al.'s works.
- GitHub Repository: <https://github.com/nhatsmrt/Colorization>

### 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 with Scikit-learn, OpenCV, Networkx
  - Deep Learning with Tensorflow, Keras, PyTorch
3. SQL
4. Data Structures and Algorithms

**Familiar With:** Client-Side Web Programming: HTML, CSS, Javascript, some experience with React; Spark