

## Education

**High School** *Phillips Academy, 2015 - 2018*

**Undergraduate** *University of Washington, 2018 - 2021 (Expected)*

**Relevant Courses:**

- Phillips Academy: CS 630 (Winter 2016: Machine Learning, Spring 2017: Data Structures and Algorithms)
- University of Washington: CSE 143 Computer Programming II (Fall 2018): 4.0, INFO 201 Technical Foundation of Informatics: 4.0; CSE 154: Web Programming: 3.9

**Average GPA:** 3.97 (Spring 2019), 3.96 (Cumulative)

## Main Projects

### AIVIVN Sentiment Analysis Competition

Spring 2019

- A text classification for positive v.s negative product reviews (in Vietnamese)
- Models: word2vec + weighted average of (hierarchical) self-attention neural network, residual network.
- Other approaches: Augmenting data: shuffling sentences, replacing words with nearest neighbor in the embedding space (cosine similarity, annoy library); stacking models; language models (EIMO).
- Final Result: 1st Place in Public Leaderboard (F1: 0.90087) and Private Leaderboard (F1: 0.90012)
- GitHub Repository: [https://github.com/nhatsmrt/AIVIVN\\_1](https://github.com/nhatsmrt/AIVIVN_1)

### Neural Network Toolbox

Summer 2019

- Implement common deep learning procedures and papers using PyTorch for quick prototyping and model developing
- Used to implement arbitrary style transfer (see below)
- GitHub Repository: <https://github.com/nhatsmrt/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.
- 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>

### 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>

## Experience

### Project in Mathematics and Application, Mentor

2017 - 2019

- Lecture on optimization techniques for neural networks, and supervise neural network projects.

## 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

### Familiar With:

1. *Web Programming Fundamentals*: Client-Side with HTML, CSS, Javascript; Server-Side with PHP
2. *R*
3. *MySQL*
4. *git*