Nhat Pham

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 416 Introduction to Machine Learning: 4.0; CSE 154: Web Programming: 3.9

Average GPA: 3.97 (Spring 2019), 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.
- Other approaches: Augmenting data: shuffling sentences, replacing words with nearest neighbor in the embedding space (cosine similarity, annoy library); stacking models; language models (ElMO).
- Final Result: 1st Place in Public Leaderboard (F1: 0.90087) and Private Leaderboard (F1: 0.90012)
- GitHub Repository: `https://github.com/nhatsmrt/AIVIVN_1`

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`

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`

Automatic Colorization with Deep Learning: **Winter 2019**
- Colorize grayscale images with deep neural network.
- Implement lighter-weight versions of Baldassarre et al.'s and Iizuka 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
3. Data Structures and Algorithms

Familiar With:
1. *Client-Side Web Programming*: Client-Side with HTML, CSS, Javascript, some experience with React;
2. *Server-Side Web Programming*: PHP
3. *R*
4. *MySQL*
5. *git*

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