Nhat Pham

Education

University of Washington, Data Science and Statistics, 2018 - 2019. *GPA*: 3.97
Courses: CSE 154 Web Programming, CSE 416 Introduction to Machine Learning, CSE 414 Introduction to Database Systems
University of Maryland, Computer Science: Data Science, 2020-2022. *GPA*: 4.0
Courses: CMSC 132 Object Oriented Programming II, CMSC 250 Discrete Structures, CMSC 216 Intro to Computer Systems, CMSC 351 Algorithms

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 with convolutional neural network.
- **Result: 8th place in the first round, invited to present in the second round.**
- GitHub Repository: `https://github.com/nhatsmrt/erc`

Experience

Software Engineering Intern at Verta.AI **Summer 2020**
- Responsible for building a *clean, functional, and type-safe* Scala client for Verta.AI's ModelDB V2
- Allows for reproducible machine learning with a Git-like versioning API for models, hyperparameters, metrics, and data
- Integrates seamlessly with AWS S3 for dataset storage and managing, and Spark MLLib for model development

Personal 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`

Coding Platform **Winter 2020**
- A platform to practice solving algorithmic questions and host contests.
- Technology stack: Judge0 for evaluation. Django REST Framework (Backend); React (Frontend). Deployed on Heroku
- Website: `http://codingplatform-cp.herokuapp.com/`

Data Collection for Food Desert Prediction Research Project at the University of Maryland **Spring 2020**
- Web scraping (selenium, beautifulsoup4) for food data; Overpass and Nominatim API for geolocation data
- Speed up API calls, geometric queries, etc. **up to 3-6 times** with multiprocessing and spatial indexing (geopandas + rtree)

Skills

Proficient With
1. *Java (4 years)*: Object Oriented Programming Design Patterns, JUnit Unit Testing, Multithreadding and Concurrency
2. *Python (4 years)*: Data Science, Machine Learning, Deep Learning. Packages and tools proficient:
   - scipy, statsmodels, numpy, pandas, geopandas, matplotlib, scikit-learn, pytorch, keras, Google Colab
3. *Scala* (1 year): Functional Programming Principles and Design Patterns.
   - Behavior-Driven Testing with ScalaTest. Big Data with Apache Spark and MLLib
4. *Relational DMBS and SQL*

Familiar With:
1. *Full Stack Web Development*: Server-side with Django; Client-side with HTML, CSS, JavaScript, ReactJS
2. *Other Technologies*: R (dplyr, tidyr, ggplot2, shiny); C, gdb, valgrind; Unix, emacs; AsteriskDB and SQL++; AWS S3
3. *Other CS and SWE Skills*: Agile Project Management via Jira; Software Versioning Control with Git and GitHub

(857) 300 8127 • *nphamcs@gmail.com* • *nhatsmrt.github.io/* • *nhatsmrt*