Nhat Pham

Education

University of Washington, Data Science and Statistics, 2018 - 2019. *GPA*: 3.97
Courses: Web Programming, Introduction to Machine Learning, Introduction to Database Systems
University of Maryland, Computer Science: Data Science, 2020-2022. *GPA*: 4.0
Courses: Introduction to Computer Systems, Algorithms, Organization of Programming Languages

Work Experience

Software Engineering Intern at Verta   **Summer-Fall 2020**
Top 5 contributor to ModelDB (https://github.com/VertaAI/modeldb), with **over 100 pull requests**. Main projects:
1. *Dataset and Metadata Versioning Functionality for Scala Client*:
   - Designed a functional API with git-inspired immutable data types (e.g: Repository, Commit) and operations.
   - Works seamlessly with AWS S3 (data storage) and Spark MLLib (model development)
2. *Model Registry and Endpoint Deployment Functionality for Python Client and CLI*:
   - Allows user to register a model and expose it via an endpoint for prediction.
   - Allows for canary update, autoscaling and resource specification.
   - Available in Python script and command-line interface (implemented with Click).

Awards and Competitions

Winner of AIVIVN Sentiment Analysis Competition   **Spring 2019**
- Predicted accurately the sentiment of **over 90%** of product reviews, with an **F1 metric of 0.90012** on the test set.
- Model: word2vec embedding + ensemble of attentional recurrent neural network and residual convolutional neural network.
- GitHub Repository: https://github.com/petrpan26/Aivivn_1
8th Place in Emotion Recognition Competition 2019   **Fall 2019**
- Designed a convolutional neural network classifier of the speaker's emotion from raw audio data with nn-toolbox (see below).
- GitHub Repository: https://github.com/nhatsmrt/erc

Personal and Research Projects

Neural Network Toolbox (nn-toolbox)   **Summer 2019**
- Implemented deep learning procedures and models in PyTorch with a *composable and modular design*.
- Reduced the time to set up model development and prototyping for projects and competitions **from weeks to 1-2 days**.
- GitHub: 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.
- Implemented with PyTorch and my nn-toolbox (see above), based on Huang and Belongie's paper.
- GitHub Repository: https://github.com/nhatsmrt/torch-styletransfer
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
- Made API calls and geometric queries **3-6 times faster** with multiprocessing and spatial indexing (geopandas + rtree)
Coding Platform for Solving Algorithmic Questions   **Winter 2020**
- Technology stack: Judge0 for evaluation. Django REST Framework (Backend); React (Frontend). Deployed on Heroku
- Prototype Website: http://codingplatform-cp.herokuapp.com/

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. Client and CLI development.
   - scipy, statsmodels, numpy, pandas, geopandas, matplotlib, scikit-learn, pytorch, keras, Google Colab; argparse, click; pytest
3. *Scala* (1 year): Functional Programming Principles and Design Patterns.
   - Behavior-Driven Testing and Property Based Testing with ScalaTest. Big Data with Apache Spark and MLLib
4. *Software Engineering Skills*: Agile Project Management via Jira; Software Versioning Control with Git and GitHub.

Familiar With:
1. *Full Stack Web Development*: Server-side with Django. Client-side with HTML, CSS, JavaScript, ReactJS
2. *Other CS Topics*: Algorithms and Data Structures. Relational database and SQL.
3. *Other Technologies*: R (dplyr, tidyr, ggplot2, shiny). C, gdb, valgrind. Unix, emacs. AWS S3

📱 *(857) 300 8127*   •   ✉ *nphamcs@gmail.com*   •   🌐 *nhatsmrt.github.io/*   •   ⓞ *nhatsmrt*
in *nhat-pham-72624b66*