

Brandon Fafata

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EDUCATION

Carnegie Mellon University
B.S. Statistics and Machine Learning

Pittsburgh
August 2019 - May 2023

SKILLS

Machine Learning: Deep neural networks, statistical learning, regression, text and data mining, computer vision, natural language processing, transformers, multiagent reinforcement learning, stochastic processes, alignment
Data Science: Feature engineering, model selection, validation, data cleaning
Python: Pytorch, Tensorflow, Keras, scikitlearn, huggingface, pandas, numpy, Flask
Languages, Visualization: Javascript, R, C, C++ (OpenCV). Tableau, Tensorboard, MATLAB pyplot, jupyter
Databases, Engineering: SQL, NoSQL, MongoDB. Docker, AWS, Google Cloud

ACADEMIC EXPERIENCE

CMU Department of English Pittsburgh
Research Assistant. Under Christopher Warren. September 2021- March 2022

Applied internal NLP software DocuScope trained on modern English to English Civil War texts 1648-1650.

Utilized traditional statistical tools to identify ideologies and forgeries from 1000 newsbooks.

CMU Department of Computational Biology Pittsburgh
Research Assistant. Under Siyu Huang April 2021 - August 2021

Applied GANs (pix2pix) to recover segmented molecules in cryo-electron tomography images, reducing time and computational load compared to traditional means by orders of magnitude.

Created a super-resolution network fine-tuned with macro molecule slides using Pytorch.

CMU Department of Computational Biology Pittsburgh
Research Assistant. Under Xiangrui Zeng April 2020 - December 2020

Used Tensorflow to create deep learning semantic image segmentation models for macromolecules captured by cryo-ET, improving classification to from 72% to 96%.

Formulated with a team of three to create a convolutional neural network for image classification invariant under transformations by adversarial training

PROJECTS

10701 Project Leveraged graph neural networks for communication in multi agent reinforcement learning

Mohimani Lab Collaboration Constructed protein changes in several contexts to train a NN

BERT-QG Question answering/generating system finetuned for Wikipedia using BERT, 11411 NLP Project

walkability NASA population distribution data and Google Maps API to better define urban planning metrics

handtracking Google hand posture tracking to create a virtual keyboard

OTHER

Summer Work

Taco Bell, Summer 2017

Research Assistant at University of Pittsburgh Department of Biology, Summer 2018

Etna Borough, Pool (Food), Summer 2019

Etna Borough, Pool (Admissions), Summer 2021

Dunkin, Summer 2022

Scouts BSA Eagle Scout, 2018

Japanese Intermediate speaker

Shaler Area High School Summa Cum Laude, Rank 9 of 312, National AP Scholar