

# Brandon Fafata

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## EDUCATION

### Carnegie Mellon University

*B.S. Statistics and Machine Learning, 3.0 GPA*

Pittsburgh

*August 2019 - May 2023*

## SKILLS

**Machine Learning:** modeling, regression, data mining, computer vision, natural language processing, reinforcement learning, statistical learning, LLMs, alignment

**Python:** Pytorch, Tensorflow, Keras, scikitlearn, huggingface, pandas, numpy, PySpark

**Languages, Visualization:** Javascript, R, C, C++ (OpenCV), Java, Tableau, Tensorboard, MATLAB pyplot

**Databases, Engineering:** SQL, NoSQL (MongoDB), . Docker, AWS, Google Cloud, git

## RESEARCH EXPERIENCE

### CMU Department of English

Pittsburgh

*Research Assistant. Under Christopher Warren.*

*September 2021- March 2022*

Utilized traditional statistical tools to identify ideologies and forgeries English Civil War texts.

Demonstrated validity of applying modern English semantic modelling to Middle English

NLP, feature engineering, model selection, validation, text mining, scikitlearn

### CMU Department of Computational Biology

Pittsburgh

*Research Assistant. Under Siyu Huang*

*April 2021 - August 2021*

Developed generative images of CET scans for classification training.

Significant training time reduction compared to molecular dynamics simulation

CV, Pytorch, GANs (pix2pix), finetuning, huggingface, data pipelines

### CMU Department of Computational Biology

Pittsburgh

*Research Assistant. Under Xiangrui Zeng*

*April 2020 - December 2020*

Created deep learning semantic segmentation models for CET images.

Worked with a team that improved macromolecule classification above SOTA from 72% to 96%.

CV, Tensorflow, data cleaning, validation, web-scraping

## 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

**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

**Scouts BSA** Eagle Scout, 2018

### Summer Work

Taco Bell (2017)

Lab Assistant at University of Pittsburgh Dept of Biology (2018)

Etna Borough Pool Food (2019), Admissions (2021)

Dunkin (2022)

**Japanese** Intermediate speaker

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