

TORIN KOVACH

Undergraduate Student • Carnegie Mellon University • School of Computer Science

@ tkovach@cs.cmu.edu

+1 3092355528

in torink.me/linkedin

torink.me/github

SUMMARY

Background includes both academic and industrial experience focused on applications of computer science and machine learning. Highly organized worker bringing articulate communication skills, relentless work ethic, and eagerness for growth and learning.

EXPERIENCE

Machine Learning Student Researcher

Auton Lab @ Carnegie Mellon University

February 2022 – Present

Pittsburgh, PA

- Developed novel fuzzy decision tree model with greater interpretability and near equivalent performance to random forests.
- Designed gradient-based methods using this model's differentiable loss to train feature transformations for automated feature engineering and dimensionality reduction.
- Worked with Python, including **PyTorch**, **scikit-learn**, and **Cython**.

Machine Learning Student Researcher

MetaboloGenomics Lab @ Carnegie Mellon University

September 2021 – Present

Pittsburgh, PA

- Developed novel classification models and techniques outperforming current SOTA to predict gene interaction from mass spectrometry data aiding in high-throughput antibiotic discovery.
- Worked with Python, including **PyTorch**, **scikit-learn**, and **Biopython**.

Machine Learning & Software Engineering Intern

Impira, Inc.

June 2021 – August 2021

San Francisco, CA

- Redesigned sequence alignment algorithm merging multiple sources of text for a document, achieving improved accuracy, >95% reduction in memory usage, and up to 70% reduction in runtime.
- Implemented named-entity recognition (NER) model to detect addresses, dates, etc. in documents with >97% precision and recall.
- Built Gaussian Mixture Models to detect spatial information between text (spaces, line breaks, etc.) for use in NER model.
- Worked with **Python** (including **Cython**, **scikit-learn**, **scipy**), **Linux**, and **LaTeX**, using the **Agile** methodology.

Machine Learning Research Intern

Cognitive Neuroscience Lab @ Northwestern University

May 2020 – August 2020

Evanston, IL

- Designed and trained deep neural networks to predict stages of sleep given live data from a wearable Fitbit device.
- Built Fitbit and Android applications as a part of a system to allow patients to use these ML models at home.
- Worked with **JMP** statistical software, **Android Studio** (Java), **Node.js**, **Python**, and the **Fitbit SDK**.

EDUCATION

B.S. in Artificial Intelligence

Carnegie Mellon University

2020 - May 2024

GPA: 4.0

High School Diploma

Illinois Math and Science Academy

2017 - June 2020

GPA: 4.0

COURSEWORK

Computer Science

- Data Structures and Algorithms
- Computer Systems
- Artificial Intelligence
- Machine Learning & Statistics
- Natural Language Processing

Mathematics

- Linear Algebra
- 3D Calculus
- Probability Theory
- Discrete Mathematics
- Theoretical Computer Science

SKILLS

Technical Skills:

Python PyTorch scikit-learn Git
Linux R SQL C/C++ AWS
Node.js HTML/CSS LaTeX

Areas of Experience:

Machine Learning Data Visualization
Statistical Analysis Agile Methodologies

PROJECTS

Click on any project description to be directed to the corresponding site.

- Pipeline using SOTA language and grammar models for high-precision question generation from a given text.
- Web application using regression models to predict venous disease, avoiding need for exploratory surgery
- Interactive digital story that runs in web browser using HTML, CSS, JS