

Conner Rose

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EDUCATION

University of Michigan, Ann Arbor, MI

August 2022 – May 2025

B.S.E. in Computer Science, Completing Requirements for B.S. in Honors Mathematics

GPA: 3.88/4.0

- **CS Coursework:** Programming and Data Structures, Data Science for Engineers, Data Structures and Algorithms, Discrete Mathematics, Machine Learning, Algorithm and Computation Theory, Computer Organization, Web Systems
- **Mathematics Coursework:** Calculus I-IV, Linear Algebra, Combinatorics and Graph Theory, Probability, Real Analysis, Probability Theory, Advanced Linear Algebra
- **Extracurricular:** Traders at Michigan, Quantitative Investment Society, Michigan Hackers, Mathematics Club, MRun

EXPERIENCE

Bloomberg L.P., New York, NY

May – August 2023

CTO Office Intern - Compute Architecture and OSPO

- Designed automated access revocation system using **Python** and **LDAP**, deployed to **Docker**-containerized **Jenkins Pipeline**, ensuring appropriate removal of inactive accounts from Bloomberg's open-source GitHub repositories
- Developed a GitHub crawler using **Python** to scan all projects contributed to by Bloomberg employees over 10 years, automating contribution cataloging and open-source license compliance verification, increasing audited projects by 3x

PROJECTS

Historical Landmark Image Classifier

October – November 2023

Python, PyTorch, Pandas, NumPy, Matplotlib, Computer Vision

- Designed and implemented **convolutional neural networks** for multiclass image classification of historical landmarks
- Researched **model architecture** and **data augmentation**, employing subsampling and noise generation to improve accuracy and mitigate overfitting while training model with 5 convolutional layers and +2,000,000 learnable parameters
- Utilized **transfer learning**, leveraging multiclass model to initialize weights for training on binary classification target problem, reducing training time, preventing overfitting, and fine-tuning fully-connected layers to improve performance

Movie Review Prediction System

September – October 2023

Python, Scikit-learn, Pandas, NumPy, Gensim, Matplotlib, Natural Language Processing

- Trained **support vector machines** capable of classifying positive and negative movie reviews achieving 92% accuracy through **sentiment analysis** techniques, including learned **word association** and **negation handling**
- Leveraged **word embedding association test** to determine association of gendered language with positive/negative adjectives in reviews, identifying gender bias within dataset and resulting learned support vector machines

MST/TSP Solution Generator, C++

April 2023

- Developed an implementation of **Prim's algorithm** to efficiently find **minimum spanning trees** for complete graphs
- Utilized **arbitrary insertion** heuristic approach to generate approximate solutions for the **traveling salesperson problem** with quadratic time complexity, allowing for computation for +10,000-order complete graphs in seconds
- Created a **branch and bound** algorithm to guarantee optimal solutions to the traveling salesperson problem and optimized via **solution tree pruning**, using MST-derived upper bound, reducing runtime by 90%

SQL Clone, C++

February 2023

- Implemented a database and query command language similar to **SQL**, including various database and table commands including table creation, deletion, insertion, conditional printing, conditional deletion, and inner join
- Incorporated **red-black trees** and **hash tables** to index tables, increasing efficiency of conditional print commands
- Utilized map indices to optimize inner join command from quadratic to linear time complexity

TECHNICAL SKILLS

Languages: Python, C++, Rust, Java, JavaScript/TypeScript, HTML/CSS, SQL (SQLite), \LaTeX

Tools: Git, Docker, Jenkins, Jupyter Notebook, MongoDB, Pandas, NumPy, Scikit-learn, Django, LDAP