

# Conner Rose

<https://linkedin.com/in/ConnerRose> | <https://github.com/ConnerRose> | [conner.n.rose@gmail.com](mailto:conner.n.rose@gmail.com) | (517) 648-1359

## EDUCATION

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**University of Michigan, Ann Arbor, MI**

Aug. 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, Computer Science Theory, Computer Organization, Web Systems
- **Math Coursework:** Calculus I-IV, Linear Algebra, Combinatorics and Graph Theory, Real Analysis, Probability, Probability Theory, Theoretical Statistics

## EXPERIENCE

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**Traders at Michigan, Ann Arbor, MI**

Oct. 2023 – Present

*Software Engineer*

**Bloomberg L.P., New York, NY**

May – Aug. 2023

*CTO Office Intern - Compute Architecture and OSPO*

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

## PROJECTS

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### Movie Review Prediction System

*Python, Pandas, NumPy, Scikit-learn, Gensim, Matplotlib*

- Performed feature extraction on movie review dataset by conducting one-hot encoding and trained **support vector machines** capable of classifying positive and negative reviews with **92%** accuracy on imbalanced dataset
- Investigated gender bias within dataset, leveraging **word embeddings** to determine association of male and female gendered language with positive and negative terms in reviews

### MST/TSP Solution Generator

*C++*

- Developed an implementation of **Prim's algorithm** to efficiently find **minimum spanning trees** for a set of vertices
- Utilized **arbitrary insertion** heuristic approach to generate approximate solutions for the **traveling salesperson problem** with quadratic time complexity, allowing for computation for **+10,000** points 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++*

- Implemented a database and query command language similar to **SQL**, including various database and table commands such as 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

### Nim-AI

*Python*

- Constructed an **Epsilon-Greedy Q-learning** algorithm to train an AI agent to play the game Nim
- Optimized training parameters to reduce number of necessary training rounds and maximize AI move accuracy

## TECHNICAL SKILLS

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**Languages:** Python, C++, Java, JavaScript/TypeScript, HTML/CSS, SQL (SQLite),  $\text{\LaTeX}$

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