

# Conner Rose

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## 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\*, Foundations of Computer Science\*, Computer Organization\*, Web Systems\*
- **Math Coursework:** Calculus I-IV, Linear Algebra, Combinatorics and Graph Theory, Advanced Calculus I (Analysis)\*, Probability\*, Probability Theory\*, Advanced Linear Algebra\*  
\*2023-24 coursework

## 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

## 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 create a minimum spanning tree 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% with optimal solutions

### 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