

# Mohammed Zaid Mir

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## EDUCATION

### University of Western Ontario

London, ON

*B.Sc. (Honors) in Computer Science, Minor in AI and Game Development*

*April 2026*

- **GPA:** 4.0/4.0 (91.3%), Dean's Honor List (2022, 2023), Western Scholarship of Distinction
- **Coursework:** Computer Architecture & Organization, Data Structures & Algorithms, Operating Systems, Discrete Mathematics, Statistics, Quantum Computing, Linear Algebra I & II, Calculus I & II

## TECHNICAL SKILLS

**Languages:** Python, Java, C#, C, HTML/CSS, PostgreSQL/MySQL, R

**Libraries:** NumPy, Pandas, Matplotlib, Seaborn, TensorFlow, cvzone, OpenCV, Neo4j, SpaCy, Swing, AWT

**Developer Tools:** Git, Unix/Linux, Unity, Unreal Engine, LaTeX

## EXPERIENCE

### Junior Analyst

Sep. 2023 – Present

*Western Investment Club*

*London, ON*

- Researcher for \$300k long-only student-led value investing fund, specializing in the Consumer Retail Group.
- Acquired and applied valuation techniques, including Discounted Cash Flow (DCF) analysis and comparison of financial multiples.
- Utilized SQL and Pandas to analyze complex datasets, refining our investment strategy by identifying key financial indicators and trends in consumer retail companies, thereby enabling more informed investment decisions.

### Undergraduate Student Researcher

Jan 2023 – Jun 2023

*University of Western Ontario*

*London, ON*

- Conducted advanced research on Google's Page Ranking Algorithm under Dr. Asghar Gorbanpour, analyzing the algorithm's foundations in linear algebra and its implications, contributing to a published paper.
- Implemented a robust Java program to rank web pages of the Department of Mathematics website using Jsoup for efficient parsing, extraction, and manipulation, ensuring comprehensive and accurate data processing.
- Constructed and analyzed a 364x364 transition matrix to model the link structure of web pages. Applied iterative methods to compute PageRank values, achieving convergence after 66 iterations.
- Demonstrated advanced skills in managing large-scale data sets and implementing optimized numerical algorithms

## PROJECTS

### Coinbase | Python (Flask, JSON), Postman

- A decentralized blockchain encompassing block creation, transaction management and proof of work.
- Implemented a RESTful API with Flask to enable interaction with blockchain, transaction creation, block mining.
- Integrated a consensus algorithm to ensure blockchain integrity and resolve conflicts across decentralized nodes.

### SignSpeak | Python (TensorFlow, OpenCV, cvzone, NumPy)

- A real-time ASL converter that tracks and classifies hand gestures into corresponding letters.
- Developed a robust preprocessing pipeline for image data to enhance model performance and reliability.
- Trained and fine-tuned CNNs optimizing the model with transfer learning to boost gesture recognition accuracy.

### SMS-Filter | Python (Scikit-learn, Pandas, Flask), Postman

- An SMS spam detection system using Scikit-learn to accurately classify messages as 'spam' or 'ham'.
- Trained and validated models on a dataset of 5,574 SMS's achieving a high accuracy score of 98.8%.
- Created a Flask-based API for real-time spam detection, enabling seamless integration into web applications.

### mittensOS | Python (Pygame, NumPy)

- A comprehensive chess engine implementing negamax search with alpha-beta pruning for advanced AI
- Engineered a robust game state management system to handle move validation, special moves, and game status.
- Implemented a depth feature allowing the engine to evaluate multiple moves ahead, enhancing decision making.