JACOB MOLOMO

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JUNIOR SOFTWARE ENGINEER | BSC APPLIED MATHEMATICS & COMPUTER SCIENCE

Analytical and motivated developer with hands-on experience building full-stack applications, image-based diagnostic tools, and data analysis scripts. Proficient in Java, Python, React, and mathematical modeling. Strong problem-solving skills with academic and project-based experience in machine learning, software engineering, and optimization.

TECHNICAL SKILLS

- Languages & Tools: Python, Java, SQL, JavaScript, React, HTML/CSS, Git, Firebase, Flask
- Libraries: NumPy, pandas, scikit-learn, Matplotlib, yfinance
- Concepts: Object-Oriented Programming, REST APIs, Statistical Analysis, Linear Regression
- Mathematics: Calculus, Linear Algebra, Probability, Optimization

PROJECTS

MedApp – Disease Detection Desktop Application   **Final Year-Project**

Java, Sobel, KNN, A Algorithm*

- Developed a Java-based desktop application to detect diseases (e.g., COVID-19) from X-ray scans with 90% classification accuracy and ~60s inference latency per image
- Applied Sobel edge detection for efficient feature extraction from grayscale medical X-rays
- Trained a K-Nearest Neighbors (KNN) model on labeled X-ray data, achieving reliable predictions on unseen cases
- Integrated A* search to generate optimized and explainable diagnostic paths with minimal computational overhead

Cinema – Streaming Platform Clone   **Personal Project**

React, JavaScript, Firebase, REST APIs

- Built a full-featured streaming platform supporting movies, trailers, and live sports, with over 180 active users and ~20s initial streaming latency on average
- Managed dynamic content (episodes, seasons, metadata) using React for frontend state management and Firebase Realtime Database for scalability
- Integrated custom REST APIs for user authentication, content delivery, and watch history tracking
- Designed and deployed a fully responsive, mobile-optimized UI with smooth transitions and adaptive layouts

Cryptocurrency Data Analysis Projects   **Personal Project**
Python, pandas, yfinance, Matplotlib

- Analyzed BTC price trends using hourly and daily market data
- Achieved R^2 score of 0.78 using linear regression for trend prediction
- Applied Linear Regression to model future price movement
- Created visualizations to communicate findings and predictions

More Projects on

my portfolio: https://myjacob.netlify.app

Source codes: https://github.com/molomojc

RELEVANT COURSEWORK

- Data Structures & Algorithm
- Computer system architectures
- Data Communication
- Mathematical Modelling
- Calculus
- Linear Algebra
- Probability and Statistics

EDUCATION

University of Johannesburg   **2022 - Present**

BSc in Mathematical Sciences – Applied Mathematics & Computer Science

Gwenane Secondary School   **2017-2021**

National Senior Certificate – Bachelor's Pass (2017–2021)

SOFT SKILLS

- Effective in cross-functional team settings and collaborative development
- Skilled at communicating complex technical solutions to peers and non-technical audiences
- Proven ability to balance multiple project deadlines under academic and personal workloads
- Experienced in debugging and troubleshooting under limited supervision
- Able to think algorithmically and reason through abstract computational problems