

Momina Aziz

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SUMMARY

Computer Science student specializing in Machine Learning and Artificial Intelligence with hands-on experience developing full-stack applications and intelligent systems. Skilled in Java, Python, and modern web technologies, with demonstrated ability to build scalable backend systems, responsive user interfaces, and data-driven solutions. Combines technical expertise with business through a management minor, bridging the gap between technical implementation and strategic organizational objectives. Seeking full-time or internship opportunities to contribute expertise in software engineering, machine learning, and the intersection of technology and business strategy.

EDUCATION

Northeastern Illinois University | Chicago, IL Bachelor of Science, Computer Science | Expected Spring 2027

- GPA: 3.4/4.0
- **Relevant Coursework:** Programming I & II (Java), Object-Oriented Programming & Data Structures, Discrete Structures, Computer Organization, Fundamentals of Software Engineering, Introduction to Design of Algorithms, Theory of Computation, Modern Database Management, Introduction to Human-Computer Interaction, Introduction to Natural Language Processing, Computer Ethics, Machine Learning, Managing Global Business Organizations.

TECHNICAL SKILLS

Languages: Java, Python, SQL, JavaScript, HTML5, CSS3.

Backend & Software Engineering: Java Spring Boot, RESTful APIs, JDBC, Hibernate, Object-Oriented Design, Data Modeling, Algorithm Design, Software Development Lifecycle.

Frontend & Web Development: React, Node.js, Express.js, Responsive Design, Component-Based Architecture, User Interface Design.

Databases: MySQL, PostgreSQL, MongoDB, Schema Design, Query Optimization, JOINS, Indexing, Database Normalization.

Machine Learning & Data Science: Scikit-learn, Pandas, NumPy, NLTK, spaCy, Feature Engineering, Model Training & Evaluation, Classification Algorithms.

Tools & Practices: Git, GitHub, Docker, Agile/Scrum, Unit Testing (JUnit), CI/CD, Software Design Patterns.

EXPERIENCE

Freelance Full-Stack Developer | Self-Employed | Remote December 2022 – December 2024

- Delivered end-to-end web applications for multiple clients using the MERN stack (MongoDB, Express.js, React, Node.js), managing projects from requirements gathering through deployment.
- Built secure RESTful APIs with Node.js and Express.js, implementing authentication, authorization, input validation, and comprehensive error handling.
- Designed and optimized MongoDB database schemas, ensuring efficient data retrieval and maintaining data integrity across applications.
- Developed responsive, user-friendly interfaces with React, leveraging hooks, state management, and component lifecycle optimization for enhanced performance.
- Worked directly with clients in Agile sprints, incorporating feedback iteratively and consistently meeting project deadlines and quality standards.

PROJECTS

Library Management System (Java Spring Boot, MySQL, Spring Data JPA, RESTful API)

- Engineered a complete backend system for managing library inventory, user accounts, and book transactions with a focus on scalability and maintainability.
- Designed normalized relational database schema in MySQL with proper constraints and indexes, utilizing Spring Data JPA for object-relational mapping.
- Implemented RESTful API with full CRUD functionality and complex SQL queries using JOINS and conditional logic for efficient data retrieval.
- Applied software engineering best practices, including modular code design, comprehensive documentation, and unit testing with Junit.

Intrusion Detection System (IDS) (Python, Scikit-learn, Pandas, Machine Learning)

- Developed a machine learning classification pipeline to detect DoS attacks using the CIC-IDS2017 dataset with 78 network flow features.
- Performed comprehensive data preprocessing, including cleaning, transformation, and feature engineering across multiple data formats (CSV, JSON, Parquet).
- Trained and evaluated multiple classification models (Logistic Regression, Random Forest, and SVM), achieving optimized performance through hyperparameter tuning and class balancing techniques.
- Documented technical decisions using Architectural Decision Records (ADR) and delivered complete analysis in Jupiter Notebook with exploratory data analysis and model evaluation metrics.

ADDITIONAL INFORMATION

- **Availability:** Immediately available for full-time roles; flexible schedule for internships.
- **Work Authorization:** Authorized to work in the United States.