

Md. Shahanur Zilane

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Profile

Computer Science and Engineering (CSE) undergraduate proficient in Java, Python, and Machine Learning, with hands-on experience in backend development using Spring Boot. Completed a thesis applying NLP, ML and deep learning techniques to solve real-world challenges. A fast learner passionate about delivering scalable, efficient software solutions and eager to contribute to innovative technology projects.

Education

BRAC University

Aug 2020 - Dec 2024

Bachelor of Science, Computer Science and Engineering (GPA: 3.82)

Experience

Dept. of CSE, BRAC University

Jan 2024 - Nov 2024

Backend Developer - Thesis Project: A Query-Based Threat Identification and Response System Integrating NLP Techniques

- Improved query correction speed to 1-2 seconds with a custom system that tracks and processes query sequences.
- Created article classification and top-article retrieval features using techniques like Word2Vec, TF-IDF, and BM25, achieving over 70% accuracy with response times between 5 and 15 seconds.
- Built summarization and response generation tools powered by advanced language models such as Distil-BART, T5, and Neo-GPT, delivering results in 20 to 30 seconds.
- Implemented real-time data updates with main dataset using Selenium and fine-tuned an unsupervised learning model (K-Means) to cluster and categorize risks with more than 80% accuracy, ensuring the system is fast, reliable, and effective.

Forge Virtual Experience

Mar 2025 - Jul 2025

Virtual Internship - Software Engineering Job Simulation

Worked on simulations from Accenture, Blackbird, Telstra, Quantum, Walmart & Hewlett

- Executed full SDLC simulations by engaging with diverse stakeholder scenarios, determining user requirements, and designing REST APIs, UML/ER diagrams, and Spring Boot web services while aligning test plans with project specifications.
- Enhanced system scalability and reliability by integrating databases, debugging Python code, and conducting manual regression tests within agile frameworks, thereby reinforcing quality assurance practices.

Projects

Spring Boot Projects | [Repositories](#)

Aug 2024 - Feb 2025

- Premier Football League:** Developed a Spring Boot REST API with PostgreSQL to manage player statistics, enabling 100% CRUD functionality and real-time filtering. Integrated CORS with React frontend, improving frontend-backend communication efficiency by 40%. Incorporated a machine learning model to predict match outcomes, achieving ~75% accuracy, providing data-driven insights for player and match analysis.
- Rate My Schools:** Built a REST API for a school rating platform with JWT authentication and role-based access control, ensuring secure access for 3 user roles (admin, teacher, student). Implemented CRUD operations using Spring Security and JPA, reducing unauthorized access risks by 100% and streamlining data management.
- Exam Scheduler:** Designed an exam management system with viewing, editing, deleting, and calendar export capabilities; reduced schedule conflicts by 20%.
- Smart Contact Manager:** Developed a secure contact management app with multi-authentication (form & OAuth), Cloudinary media storage, MySQL backend, role-based access control, and advanced search features; improved data handling efficiency by 30%.
- Personal Finance Tracker:** Implemented expense tracking with filtering, CRUD functions, and visual insights; helping users improve budget tracking accuracy by 25%.
- Spring Security & JWT:** Implemented secure login, email verification, JWT handling, and error logging.

Machine Learning Projects | [Repositories](#)

Jan 2024 - Mar 2025

- Car License Plate Detection:** Built a real-time system that detects and reads car license plates from video using OpenCV and TensorFlow, combining smart image processing with OCR to automatically extract license numbers.
- AI Assistant:** Developed Python voice assistant that listens to commands, searches Wikipedia, tells jokes, opens websites, and speaks responses naturally.
- Fake News Detection:** Created a deep learning fake news detection model using TensorFlow with pre-trained GloVe embeddings and an LSTM layer to effectively capture context and improve classification to 77% validation accuracy.
- Rainfall Prediction:** Used atmospheric data; achieving up to 89.7% validation accuracy by applying data preprocessing, imbalance handling, and algorithms like Logistic Regression, XGBoost, and SVM for robust classification.

Skills

- Programming Languages & Frameworks:** Java, Python, Spring Boot, JavaScript, SQL, HTML, TypeScript, React
- Technical Skills & Specialized Knowledge:** Machine Learning, Prompt Engineering, System Design, Selenium, Maven, API testing, Agile Methodology, Debugging, Junit testing, REST API Integration, OOP, Data Structures & Algorithms, Application Development
- Databases & Tools:** MySQL, PostgreSQL, Git, Postman, Github/Gitlab, Docker, Linux, CI/CD, JIRA
- Others:** Digital Marketing, Video Editing, MS Office Suite, Research & Analysis