

Afsana Bhuiyan

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EDUCATION

Rensselaer Polytechnic Institute

Troy, NY | August 2020 - May 2024

Bachelor of Science in Computer Science, Concentration in Artificial Intelligence & Data

Coursework: Data Structures, Intro to Algorithms, Operating Systems, Database Systems, Interactive Visualization

Brooklyn Technical High School

Brooklyn, NY | September 2016 - June 2020

WORK EXPERIENCE

ISO New England | Software Engineer Intern

Holyoke, MA | June 2023 – December 2023

- Tested and validated an internal web application with **JUnit** achieving 85% code coverage.
- Upgraded the application on 10+ servers, resulting in a 4% performance improvement.
- Analyzed test data using **Excel** and generated detailed graphs and charts that visualized key metrics and trends.
- Developed an automated email notification system using **Java**, **Spring Boot**, **Maven**, and **Apache Camel**.
- Integrated **PL/SQL** with **Java** to retrieve and process data from the Oracle database, handling data sets of up to 1 million records and improving data retrieval time by 20%.
- Created dynamic graphs and charts using **Java**, based on data retrieved via **PL/SQL**.
- Presented findings and insights to a team of 15 engineers through 3 comprehensive **PowerPoint** presentations.

Rensselaer Polytechnic Institute | Discrete Math TA

Troy, NY | January 2023 – May 2023

- Offered technical support to over 400 students during bi-weekly office hours, clarifying complex concepts in the Discrete Math course.

Girls Who Code | Teaching Assistant

New York, NY | June 2022 – August 2022

- Led 3-hour coding lessons for 40+ students in the GWC Summer Immersion Program, crafting and delivering comprehensive lesson plans on web development fundamentals with **JavaScript**, **HTML/CSS**.
- Hosted weekly office hours and mentoring sessions, providing personalized guidance and support to help students successfully complete projects and refine their career/academic goals.

PROJECTS

Genre Galaxy

- Led development of web application with **Python** to visualize genre relationships from Goodreads data.
- Processed and analyzed dataset of over 10,000 books, generating network graphs with **NetworkX** to map co-occurrence patterns of 100+ genres, optimizing data representation for enhanced insights into genre dynamics.
- Implemented interactive features like genre search functionality and click-to-highlight connections.

PosiText

- Developed binary classifier using Logistic Regression for detecting happiness in text, achieving overall accuracy of 72% in sentiment analysis through NLP and machine learning techniques.
- Prepared a dataset of 13,847 tweets from Kaggle, implementing text preprocessing, TF-IDF vectorization, and model evaluation using **Python (Pandas, Scikit-learn, NLTK)**.
- Optimized model for key performance metrics, achieving 0.70 precision and 0.42 recall for happiness detection.

SwiftDorms

- Collaborated with a team in developing an open-source platform for off-campus housing and roommate matching, connecting students with potential roommates.
- Designed and implemented the database with **MySQL** using **SQL** queries to manage housing listings and user profiles.
- Created wireframes and developed the frontend using **HTML/CSS** and **JavaScript** for an intuitive user interface.

Movie Mate

- Developed **MovieMate**, a responsive web app providing personalized movie recommendations using the TMDb
- Implemented advanced filtering options like genres, ratings, runtime, and popularity for tailored suggestions.
- Designed an intuitive frontend using **HTML**, **CSS**, and **JavaScript**, optimized for responsiveness.
- Built a secure backend with **Python (Flask)** for API integration and server-side logic, deployed on **Vercel**.

SKILLS

Programming Languages: Python, Java, JavaScript, HTML/CSS, SQL, PostgreSQL, C++, C, Erlang, Prolog, Oz, Haskell, Assembly/MIPS

Tools & Technologies: Linux, Git, React, d3.js, Pytest, Flask, JUnit, Spring Boot, Apache Camel, Maven, API, Agile

Soft Skills: Problem-solving, Collaboration, Communication, Teamwork, Organization, Detail-oriented