Harshil Machhi

732-351-0055 | hrm51@rutgers.edu | linkedin.com/in/harshil | www.machhi.me

EDUCATION

Rutgers University New Brunswick, NJ
B.A. Computer Science, B.S. Data Science *May 2025*
Relevant Coursework: Deep Learning, Data Science, Regression Methods, Applied Statistical Learning, Algorithms, Data Structures, Databases, Computer Architecture, Linear Algebra, Calculus III

EXPERIENCE

Software Engineer Intern June 2024 – Aug. 2024
Barclays Investment Bank | Java, Typescript, Spring Boot, Maven, React, Node.js, REST APIs *Whippany, NJ*
- Engineered a compliance tool in Java that automates the extraction and comparison of 500+ commit histories from Bitbucket against JIRA stories, ensuring strict adherence to release scopes, reducing production outages by 95%
- Designed and implemented REST APIs that facilitated seamless communication between JIRA and Bitbucket, improving data validation processes and reducing manual errors by 75%, leading to a reliable deployment pipeline
- Spearheaded the development of a cutting-edge solution with React and Node.js, streamlining the review process for unplanned commits; enabling 50% faster review of unplanned commits and used by over 12 divisions at Barclays

Rutgers University – New Brunswick Aug 2023 – May 2024
Learning Assistant – Calculus I *New Brunswick, NJ*
- Created and implemented collaborative strategies with 150+ students and faculty, resulting in increased learning environment feedback scores; developed constructive feedback mechanisms that encouraged continuous growth
- Established a structured learning initiative that served over 60 students weekly, resulting in a tangible 20% boost in exam scores; program focused on building confidence in solving complex problems through hands-on practice

PROJECTS

Trendify.ai | *Python, TensorFlow, Pytorch, Scikit-learn* October 2024 – Present
- Developed a dynamic song recommendation system using LSTM models to analyze user preferences via Spotify's API and a Kaggle dataset of 1.4M tracks, achieving a $\sim$0.02 training loss for personalized music recommendations
- Fine-tuned a pre-trained BERT model for NLP-driven playlist generation, mapping contextual embeddings from user prompts to audio features via a regression neural network trained with MSE loss
- Optimized data pipelines for scalability and accuracy through extensive preprocessing of Spotify data and Kaggle datasets, ensuring seamless integration of user-specific recommendations and prompt-driven playlist generation

FlightLink | *Java, SQL, HTML, CSS, JavaScript, JDBC* December 2023
- Engineered a fictional relational database system optimize online travel reservation operations; improved data retrieval speeds by 40%, enhancing user experience for over 1000 daily transactions in a scalable framework
- Designed and developed a responsive web application with advanced search algorithms, secure user authentication, and role-based access control, improving system reliability and reducing simulated booking errors by 30%
- Engineered analytical tools to extract insights such as top revenue-generating flights by implementing advanced SQL optimizations and indexing strategies, achieving up to 25% faster query performance in simulated large-scale data environments

RURideShare (HackRU Runner Up) | *Python, SQLite3, HTML, CSS, JavaScript, Flask* October 2023
- Developed a campus ride-sharing platform enabling students to post and join rides in real-time, reducing bus congestion and improving transportation efficiency. Processed 500+ rides in the first month with Flask-powered backend systems, cutting user inquiry response times by 40%
- Integrated Google Maps API for dynamic route mapping and real-time ride tracking, enhancing user trust and scalability while reducing driver location inquiries by 40% for 5,000+ users

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL, JavaScript/TypeScript, HTML/CSS, R
Frameworks: React, Node.js, Flask, Keras, SpringBoot, JDBC
Developer Tools: Git, Docker, IntelliJ, Visual Studio, Eclipse, Jupyter Notebook, Google Colab
Libraries: TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn