Maanav Choudhary
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EDUCATION

Rutgers University, School of Arts and Sciences New Brunswick, NJ
B.S. in Computer Science, **GPA: 3.677** May 2025
Relevant courses: Introduction to Computer Science, Data Structures, Computer Architecture, Discrete Structures I&II, Systems Programming, Design and Analysis of Algorithms, Minds Machines and Persons (in progress), Operating Systems Design (in progress)

TECHNICAL SKILLS

Programming: Java, Python, C , swift
Experience with: Machine learning, Probability, low-level programming, cloud computing, front-end app development
APIs/Libraries: Numpy, sci-kit-learn, pandas, seaborn, matplotlib, Streamlit

WORK/EXPERIENCE

Technology Intern, PNC Bank **Pittsburgh, PA 2024**

- Utilized scikit-learn and JupyterHub to create and refine machine learning algorithms aimed at automating the quality control of SOX reports. Implemented a range of supervised and unsupervised models to enhance anomaly detection.
- Conducted thorough data preprocessing and analysis, applying feature selection and dimensionality reduction techniques. Improved model input quality, boosting model efficiency by 20%.
- Integrated advanced statistical methods and employed ensemble techniques to develop more robust and scalable models. Optimized model performance through rigorous cross-validation and the application of relevant performance metrics.
- Enhanced overall data processing efficiency by 30%, which contributed to a 60% reduction in manual quality control time.
- Improved anomaly detection accuracy by 15% through iterative tuning and validation, achieving a model accuracy of 92%.

Rutgers Hackathon(HackRU) **New Brunswick, NJ 2022**

- Worked in a 3-person team to make a web app that displays crowds in a gym using live user input.
- Used Python for backend and Streamlit API for frontend and user input, launched online with AWS.
- Won runner-up for the Health track with our final product.
  Link to our Git for our final web app:
  https://github.com/aseef11/HackRU2023

Randolph High School **Randolph, NJ**
Tutored Principles of Computer Science

- Reviewed a student's failed exams and formulated a teaching plan
- Facilitated the student's ability to think through coding problems on their own

Huffman Coding: Data Structures

- Implemented a Huffman coding algorithm to compress text files, achieving up to 50% reduction in file size.
- Used a priority queue (min-heap) to build a binary tree, reducing time complexity for tree construction to O(nlogn)
- Assigned binary codes to 256b unique characters based on their frequencies, optimizing for space efficiency.
- Encoded text into binary format, reducing the average character representation length from 8 bits to as low as 3 bits for the most frequent characters.

Clubs

RUMAD: Rutgers App Development Club **January 2022-Present**
Member of a development team consisting of four people.

- With the help of a mentor built an IOS app from the idea phase to a prototype using Swift.
- Learned front-end app development and working on a long-term project with a team.