

# Mehaerkaur Chhabda

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## EDUCATION

### Rutgers University, School of Arts and Sciences

New Brunswick, NJ

Grade Point Average: 3.9 - Dean's List Fall 2023 - Present

Major in Computer Science - BS, Major in Data Science - B.S.

September 2023 - Present

Relevant Coursework: Data Structures, Introduction to Computer Science, Discrete Structures I, Introduction to Linear Algebra, Calculus II, Calculus I, Statistics I, Data 101, Principles of Computer Science

## EXPERIENCE

### Machine Learning Research (Professor Ayush Khaitan)

New Brunswick, NJ

Research Assistant

September 2023 - Present

- Created and formatted a dataset using a JSON file with 1900 lines of code
- Translated the Ricci package to Mathematica code by finetuning Deepseek
- Researched ways to improve the response of LLMs for mathematical input
- Gained experience using Rutgers' Amarel supercomputer

### RU Solar

New Brunswick, NJ

Systems Administrator

September 2023 - Present

- Mechanically aided in the creation of a solar-powered vehicle to participate in the American Solar Challenge
- Utilizing SOLIDWORKS to design the CAD model of the chassis and other necessary components
- Machining defined parts using various tools such as the band saw, miter saw, table saw, CNC, etc
- Attained proficiency in software such as Vcarve, ShopBot, and Fusion 360

### USACS (Undergraduate Student Alliance of Computer Scientists)

New Brunswick, NJ

Participant

September 2023 - Present

- Participated in events such as hack hours, paired programming, hack lab research
- Gained valuable insight through networking events such as hackathons, company-hosted workshops, and alumni lead events.

### Code Storm

New Brunswick, NJ

Member

September 2023 - Present

- Gained important technical skills by participating in Git, Github, Project API, and Project Development workshops
- Networked with experienced members and received valuable feedback for personal projects

## PROJECTS

### Spider-Verse - Java

- Implemented dimension and cluster management to prevent Kingpin's Collider from destroying the Spider-Verse
- Processed an adjacency list-based graph data structure using multiple CSV inputs to represent interdimensional connections.
- Employed depth-first search, breadth-first search, and Dijkstra's algorithm to efficiently traverse the graph structure

### Calorie Prediction Using Fitbit Data - R

- Organized Fitbit data into a data frame and visualized the correlation between heart rate and calories burned
- Built Decision Trees and Naive Bayes models, and utilized feature engineering to improve their accuracy
- Confirmed a strong correlation between heart rate and calories burned

## LEADERSHIP & VOLUNTEERING

### National Society of Leadership and Success

New Brunswick, NJ

Treasure

September 2024 - Present

- Coordinated with other officers to allocate resources effectively for events and activities
- Maintained effective communication between Rutgers and the NSLS national office to ensure alignment and compliance with organizational standards

### FIRST Robotics Competition

West Windsor, NJ

Electrical Director

September 2020 - June 2023

- Wired the robots that competed in the matches and conducted emergency repairs when needed.
- Trained the incoming members of the electrical subteam

## TECHNICAL SKILLS

**Technical:** Java, Python, R, HTML, Ollama, Microsoft Office, SOLIDWORKS, Rutgers's Amarel

**Languages:** English, Hindi, French, Punjabi