

# Harsh Panwar

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## Education

New Jersey Institute of Technology

2021 - 2025

**B.S. in Computer Science and Mathematical Sciences, Concentration in Applied Mathematics**

GPA: 4.0

Albert Dorman Honors College Scholar

Coursework: Probability and Statistics, Physics II, Data Structures and Algorithms, Calculus III, Discrete Mathematics, Database Design and Management, Differential Equations, Linear Algebra, Programming in Linux

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## Experience

**Undergraduate Research Assistant – NJIT**

May 2022 - Present

- Analyzed and identified patterns in Strong Thermal Emission Velocity Enhancement (S.T.E.V.E.) to create a peak-finding algorithm using 'SciPy' module
- Used the Vires API to retrieve satellite data and processed 60 million data points to identify temperature spikes
- Created a geographic model for temperature spikes to help viewer identify visual patterns
- Streamlined conversions from dataframes to excel files using 'openpyxl' module

**Web Developer – Lyra Stem.**

April 2022 - Present

- Built, deployed, and maintained website through Wix with custom HTML and CSS components
- Embedded code for visuals built through Tableau
- Promoted communication between company and users by setting up contact forms and a chat feature

**Undergraduate Research Assistant – NJIT**

Dec. 2021 - Jan. 2022

- Participated in research with Dr. Afkhami to incorporate physics into a neural network otherwise known as Physics Informed Neural Network (P.I.N.N.)
  - Worked with Slurm Workload Manager, Bash, AFS to run model on high performance computing clusters
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## Projects

**Banking Website**

- Created a mockup using Flask for a banking website from the user view, implementing the following: Checking accounts, Savings accounts, Stock shares, and User Authentications
- Utilized the 'yFinance' API to retrieve market data and updates user portfolio
- Used SQLAlchemy to create a SQLite3 database and query data for updates, i.e. withdrawing/depositing funds, buying/selling shares, updating password/email/address

**BasketballPoints**

- Built a web-scraper with the 'BeautifulSoup' library that summarized career statistics of past/current NBA players
- Accepted user input and outputted summary through IDE console

**Covid-19 Map**

- Filtered, extracted, and combined relevant data using 'Pandas' framework from 2 datasets on Covid cases and country locations with 100+ metrics
- Mapped the data using 'Folium' package to create visual representation of COVID cases that accurately depicted the proportion of cases in a given geographic location

**Tumor Classifier**

- Classified tumors as malignant using the UCI Machine Learning Repository on breast cancer tumors
  - Implemented a KNN algorithm using 'Pandas', 'Numpy', and 'sklearn' resulting in 98% accuracy
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## Skills

Python (NumPy, Pandas, Flask, SciPy, yFinance, openpyxl, Pygame, TensorFlow, Matplotlib, Folium, BeautifulSoup), Java, C++, SQL, HTML/CSS, AFS, Bash, MATLAB