

# Pranav Raj

[praj36@gatech.edu](mailto:praj36@gatech.edu) | [linkedin.com/in/pranav-raj1](https://www.linkedin.com/in/pranav-raj1) | [github.com/pickpranav](https://github.com/pickpranav) | <https://pranavraj.netlify.app/>

## EDUCATION

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### Georgia Institute of Technology

Atlanta, GA

*Bachelor of Science and Master of Science in Computer Science*

4.0 GPA — Aug. 2021 – Dec. 2023

- Courses: Computer Organization (Assembly + C Programming), Systems + Networks, Design and Analysis of Algorithms, Probability + Statistics, Robotics + Perception, High-Performance Computing, Automata and Complexity, Intro to AI, Computer Vision, **Teaching Assistant for Machine Learning**.

## EXPERIENCE

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### Machine Learning Engineer Intern

May 2023 – Aug 2023

*Skytap*

*Remote*

- Developed models (Poly Regression, Exponential Smoothing, Autoregressive Integrated Moving- Average) to forecast resource (CPU, RAM, and storage) utilization using historical utilization/sales data.
- Worked with Stationary and Non-Stationary data; Transformed Non-Stationary data.
- Explored AWS SageMaker DeepAR and Holt's Winter Seasonal Exp Smoothing forecasting algorithms.

### Software Engineer Intern

May. 2022 – Aug. 2022

*Intuitive Surgical*

*Sunnyvale, CA*

- Created a customized front-end form where end-users input essential information about their API
- Upon form submission, the project generates and runs a Tavern test file, displaying detailed test results.
- Handles a variety of scenarios: certificate checks, enrolling a certificate without a CSR, comparing against secure databases, OKTA Authorization, lifetime bearer token generation, text file checks, etc.
- Integrated within Digital Organization's Jenkins CI/CD pipeline to enable organization-wide use.

### Machine Learning Research Lead

Sep. 2021 – Present

*Stadium-IoPT Project Team*

*Atlanta, GA*

- Led dev of white paper summarizing progress; Ran the model on PACE supercomputer Phoenix cluster.
- Improved CNN model that predicts play type from play clip with data cleaning + hyperparameter tuning.
- Created binary classification model and Markov Chain model based on prior play information.
- Created a final neural network that fuses the Markov Model and LSTM Neural Network results.

### Socioeconomic Poverty Prediction (SPP) and Parkinson's Lead

Sep. 2021 – Present

*Big Data Big Impact*

*Atlanta, GA*

- Improved the socioeconomic indicator to account for new land classifications using Sentinel-2 dataset.
- SPP: Led Platform (collect clean satellite imagery), Analysis (classify imagery and compute final score), and Data Visualization (create Heat Map) teams.
- Parkinson's: Facilitated creation of distinct models to predict Parkinson's (trained SVM classifier/XGBoost algorithms on voice data, Convolutional Neural Networks on handwriting data, etc.)

### Data Science Intern

May 2021 – Aug. 2021

*Innception*

*Remote*

- Performed massive web scrape (100000+ records) of a freelance services marketplace using Selenium.
- Analyzed data, retrieved from pSQL, to provide valuable insight for the company's major release.

## PROJECTS

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- **COVID-19 Vaccination Analysis of India:** Web scraped population data using BeautifulSoup from Wikipedia, and vaccination data from government report. Visualized relationship using Plotly Express.
- **Mercury:** Digital Receipt Management service with NCR API, MongoDB, NuxtJS. Created at HackGT.
- **Numerical Ranking of 2020 NFL Regular Season:** Performed eigenvalue and eigenvector calculations to implement the Regular Model and Colley Model, similar to Markov Chains.

## TECHNICAL SKILLS

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**Proficient:** Python, Java, Tavern, Web Scraping, Pandas, Statistical + Time Series Analysis, NumPy, Git  
**Competent:** SQL, C, CNNs, Assembly, Databases, Jenkins, YAML, Markov Chains, Pyodbc, RNNs