Pranav Raj

praj36@gatech.edu | linkedin.com/in/pranav-raj1 | github.com/pickpranav | pickpranav.github.io/pranavraj/

Education

Georgia Institute of Technology Atlanta, GA

Bachelor of Science and Master of Science in Computer Science, ML Specialization ***4.0 GPA*** *Aug. 2021 – Dec. 2024*

- Courses: Computer Organization, Discrete Mathematics, Data Structures + Algorithms, Systems + Networks, Design and Analysis of Algorithms, Probability + Statistics, Robotics + Perception, High-Performance Computing, Automata and Complexity, Intro to Artificial Intelligence, Computer Vision, Objects and Design, Deep Learning, Natural Language Processing, Data and Visual Analytics, **Teaching Assistant for Machine Learning.**

Experience

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.
- Researched 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.
- Streamlined testing and validation of Da Vinci Robot software, user applications, and simulation programs.

Machine Learning Research Lead Sep. 2021 – Present

Smart Stadium Project Team *Atlanta, GA*

- Led dev of white paper summarizing progress; Ran the model on PACE supercomputer Phoenix cluster.
- Improved Deep Learning model that predicts play type from play clip with data cleaning + fine tuning.
- Created binary classification model and Linear Algebra based model on prior play information.
- Engineered a final Deep 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*

- Enhanced 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 of a freelance services marketplace. Visualized results with Web Analytics Tool.
- Analyzed data, retrieved from pSQL, to provide valuable insight for the company's major release.

Projects

- **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 NFL Regular Season**: Performed eigenvalue and eigenvector calculations to implement the Regular Model and Colley Model, similar to Markov Chains.

Technical Skills + Interests

Python, Java, C++, HTTP, Agile, Linux, Github, PostgreSQL, AWS, Docker, REST API, CI/CD(Jenkins), Databases
Pandas, Numpy, Pytorch, Tensorflow, Keras, Jupyter, ScikitLearn, LLMs, Computer Vision, NLP, Deep Learning, CUDA
Time Series + Statistical Analysis, Cloud + Parallel Computing, Linear Algebra, ML Optimization, GenAI, OpenMPI