Jayant Babu

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SUMMARY

I'm a devoted Software Developer deeply passionate about coding in Python and JavaScript. Holding a Bachelor's degree in Data Science from Arizona State University, I'm excited to apply my expertise in a Full-stack software development role within a vibrant setting. My forte lies in developing comprehensive digital platforms, including web, mobile, and API applications. With proficiency in frameworks like Django, Flask, and React Native, I've actively contributed in the design, development and migration of applications for Medium and Small Enterprises. Leveraging AWS services, I ensure scalable and streamlined cloud deployments. For a deeper look into my projects and publications, please visit my portfolio website.

EXPERIENCE

Full Stack Developer **August 2022 - December 2022; May 2023 – August 2023**
Tinosys **Houston, Texas**

- Created an app for both Android and iOS using **Android Studio** and **XCode**, designing it specifically to meet the needs of an oil sector client. This involved coding the app's frontend for user interaction and its backend for data processing.
- Set up the backend of the app on **Amazon Web Services (AWS)**, using **S3** for storing data, **Lambda** for processing data without needing physical servers, and **API Gateways** to connect the app's frontend with its backend smoothly.
- Improved how the app communicates with its users by setting up automated emails and notifications using **AWS CloudFormation** to organize and manage these resources and **AWS Simple Notification Service (SNS)** to send out the messages, boosting user engagement and marketing efforts.

Technical Assistant **May 2021 - August 2022**
Virginia Tech Libraries **Blacksburg, Virginia**

- Wrote **Python** scripts to automatically update **Excel** spreadsheets, which minimized errors from manual entry and boosted the efficiency of our operations.
- Used **Python** and **SQL** to merge various book databases into a single, centralized system, making it easier to access and manage our inventory.

Research Assistant **January 2021 - May 2021**
Brown Experiential Learning **Blacksburg, Virginia**

- Built an interactive dashboard using **Python** and **JavaScript** that displayed real-time data on COVID-19 infections and deaths, which could be customized by location.
- Integrated data from reputable sources, including the Johns Hopkins University COVID-19 database, to maintain the accuracy and completeness of the dashboard, making it a reliable resource for tracking pandemic trends.
- Employed bar charts and heat maps to simplify the interpretation of complex epidemiological data, which supported effective decision-making and increased public understanding of pandemic patterns.

Intern **May 2020 - December 2020**
Tinosys **San Jose, California**

- Developed a specialized tool using **Python** to analyze and find similarities between various log files, enhancing the efficiency of debugging processes.
- Utilized Python libraries such as **Pandas** for data manipulation, **NumPy** for numerical data operations, and **Scikit-learn** for implementing machine learning algorithms to categorize error files based on their similarity.
- Streamlined the error categorization process, which significantly reduced the time required for developers to identify and address issues, improving system reliability and performance.

SKILLS

Languages: Python, R, SQL, Java, JavaScript, Swift, TypeScript
Frameworks: Node.js, React.js, Angular, Pytorch, Django/Flask
Methodologies: DevOps, Data-Driven Development, Data Analysis, Machine Learning Techniques, Agile Development
Tools and Environments: AWS Services, Selenium, Tableau, D3.js, Salesforce Platform, Android-Studio, XCode, Database Management

PROJECTS

Air Quality Prediction - GitHub

- Utilized XGBoost to predict the Air Quality Index (AQI) from pollutant data, achieving a Root Mean Square Error (RMSE) of 1.80 for the training set and improving to 0.19 for the testing set through meticulous data preprocessing and model tuning.
- Enhanced the model's performance through hyperparameter tuning, reducing the training RMSE to 1.31 and adjusting the testing RMSE to 0.45, demonstrating effective prediction of AQI and supporting targeted pollution control strategies.

Solar Energy Prediction - GitHub

- Developed a predictive ensemble model using Random Forest, SVM, Gradient Boosting, and Decision Tree algorithms to accurately forecast solar capacity at the county level in the U.S., achieving an R-squared score of 0.79 and highlighting areas for potential renewable energy expansion.
- Enhanced forecasting capabilities through time series analysis using a SARIMA model to predict short-term Global Horizontal Irradiance (GHI) trends, providing precise predictions essential for strategic renewable energy planning and investment.

React Native Base App - GitHub

- Developed a foundational React Native app as a versatile skeleton that can be adapted to various future applications, streamlining development processes.
- Engineered for cross-platform functionality, ensuring seamless operation on both Android and iOS platforms using React Native.
- Implemented a modular architecture with reusable components and scalable infrastructure for easy customization and extension

Deliveroo UK Web Scraper - GitHub

- Developed a web scraping tool using Selenium and Python to dynamically scrape restaurant data from the Deliveroo UK website.
- Programmed to handle any restaurant link, allowing for data extraction from diverse restaurant pages on the platform.
- Converted all scraped data into JSON format, ensuring the data is structured and easily manageable for further analysis or integration into other applications.

EDUCATION

Bachelor of Science — **May 2024**
Arizona State University — **Tempe, Arizona**
Bachelor of Science — **August 2022**
Virginia Tech — **Blacksburg, Virginia**