ALANKRUTHA REDDY PURUMANDLA

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TECHNICAL SKILLS

Programming Languages: Python, Java, R, SQL, JavaScript, C, C#, C++ Kotlin, NoSQL
Databases: MySQL, PostgreSQL, MariaDB, Mongoose, T-SQL, PL/SQL, MongoDB, Google Big Query, Neo4j
Libraries: Pandas, Numpy, Scikit-learn, Keras, Pytorch, Tensorflow, Seaborn, Statsmodels, dplyr, sqldf, Shiny, Package Development
Data Visualization: PowerBI, Tableau, Google Analytics, Python Dash, Advanced Excel, D3.js, ObservableHQ
Methodologies and Developer Tools: Agile, SDLC, Waterfall, Git/GitHub, GitLab, Bitbucket CI/CD, JIRA, AWS, CRM, Salesforce
Web Development Technologies: HTML5, CSS3, Ajax, React.js, Express.js, Node.js, PHP, XML, jQuery, ASP.NET

EDUCATION

Northeastern University **Boston, MA, USA** Sep' 2022 – May' 2024
Master of Science in Information Systems
- **Relevant Coursework:** Machine Learning, Advanced Database Concepts, Algorithm Design and Analysis, Statistical Modelling, Intelligent Systems, Data Mining, Software Engineering, Data Visualization, Data Analytics Engineering

Vasavi College of Engineering **Hyderabad, India** Aug 2018 – May 2022
Bachelor's in electrical engineering with a minor in Computer Science
- **Relevant Coursework:** Data Structures, Database Management Systems, Algorithms, Object Oriented Development

WORK EXPERIENCE

Software Engineer at **Northeastern University** Dec' 2022 – May' 2024
- Leveraged **Python** and **SQL** to clean, transform and analyze TransLoc ridership data, identifying peak usage times and high-demand areas, implemented **A/B-tested** route adjustments, reducing average user wait times and improving rider satisfaction by 25%.
- Implemented REST web services and integrated **REST APIs**, leading to a 20% improvement in data retrieval efficiency.
- Engineered interactive and data-driven webpages using **React.js and Observable JS**, resulting in a 20% boost in data presentation efficiency and enabling faster, more informed decision-making for the team.
- Optimized **data pipelines** and implemented advanced **caching mechanisms** to manage peak usage effectively, reducing data latency by 20% and significantly enhancing user experience and performance during high-traffic periods.
- Implemented **test-driven development** (TDD) and participated in **Agile** ceremonies and **code reviews** to ensure adherence to development standards and timely delivery, contributing to improved **team alignment** and project success.

Software Developer at **SKIPS** May' 2021 – Aug' 2022
- Developed an automated lab results portal using **Python** and **SQL** to generate individual performance reports and class-wide analysis from student data, reducing manual grading time by 40% and improving feedback turnaround for professors by 30%.
- Enforced security protocols using **JWT (JSON Web Tokens)** and **AES session encryption** for secure user authentication, significantly enhancing data protection and reducing unauthorized access attempts by **25%** across web applications
- Optimized backend services with **Node JS and Express.js** to streamline dataflow between laboratory systems and LIMS, achieving a 30% boost in retrieval efficiency and reducing processing time.
- Leveraged **DevOps** practices, including **continuous integration** and **automated tests**, to ensure stability and performance.
- Designed interactive front-end interfaces using **React JS**, and **Observable HQ** for internal portals and the institutional website, improving user engagement and ease of navigation by **15%**, as reflected in user feedback.

PROJECTS

Virtual Assistant
- Engineered a virtual assistant using **Python**, **Tkinter GUI**, **pyttsx3 Text-to-Speech**, and **Google's Speech Recognition API**, enhancing user communication and interaction by **40%** with improved voice command processing.
- Optimized performance by implementing **OS multithreading** and applied **Natural Language Processing (NLP)**, **sentiment analysis** to adjust the assistant's voice pitch based on user mood, increasing user satisfaction by 25%.
- Integrated **Wolfram Alpha and Wikipedia APIs** to enable accurate, efficient web browsing capabilities, delivering factual and summarized information with a **35%** improvement in response time and accuracy.

Patient Insurance Management System
- Developed a cloud-based web application called *Health Sure* that enables users to schedule appointments, communicate with their doctor, and manage their insurance plans via their respective accounts.
- Built RESTful APIs and hosted application on **AWS**, leveraging **Amazon EC2** for server hosting and **Amazon RDS** for database management, and **AWS S3** was used for secure storage of user files, resulting in 30% faster data access.
- Enhanced user experience and software performance by applying **Agile** methodologies and rigorous testing, achieving a **25%** reduction in loading times and ensuring a seamless user journey.

ACHIEVEMENTS AND CERTIFICATIONS

- Completed "**Accenture – Data Analytics and Visualization Job Simulation**" via Forage, gaining hands-on experience in Data Cleaning, modelling, analysis and presenting insights to stakeholders.
- Certified in "**Career Essentials in Data Analysis**" by **Microsoft** and **LinkedIn**, with proficiency in data analysis, data extraction, visualization, data-driven decision making, and strategic decision making