Harshal Patil

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Education

- **SUNY Buffalo** — New York, USA
  MS Engineering Science (Data Science) — *Aug. 2024 – Present*
- **Modern Education Society's College of Engineering** — Maharashtra, India
  Bachelor of Engineering in Electronics and Telecommunication — *Aug. 2018 – April 2022*

Skills Summary

- **Programming Languages**: Python, SQL, C#, R, C++, JavaScript, HTML/CSS, Data structures
- **Frameworks**: TensorFlow, Blazor, .NET, React, Camunda Workflow, Entity Framework
- **Libraries**: Pandas, NumPy, Matplotlib, Scikit-learn, Keras
- **Big Data & Distributed Computing**: Apache PySpark, Hadoop, HDFS, MapReduce, Spark SQL
- **Cloud Platforms**: Microsoft Azure, AWS
- **Tools & Platforms**: Azure, Git, Tableau, Docker, Power BI, VS Code, snowflake, Visual Studio, Matlab, Swagger, Postman, Office, Excel, R-Studio, Jupyter Notebook, PostgreSQL
- **Soft Skills**: Leadership, Time Management, Team Collaboration, Communication, Attention to Detail

Experience

- **Assistant Manager (Senior Software Developer Engineer)** — Sept 2022 – July 2024
  Reliance Jio Platforms LTD — *New Mumbai, India*
  - **Planned, designed, and developed web applications**: To achieve company objectives, scalable web apps were designed and created following best practices for software development.
  - **Automation Optimization**: Built automation scripts using Mudblazor, reducing server downtime by 10 hours monthly while maintaining a database of 100,000+ records.
  - **API Development:**: Designed APIs to improve operational operations and increase data accessibility.
  - **Workflow Implementation**: Camunda BPMN was used to model and implement automation process workflows and systems, increasing operational efficiency.
  - **Database Management**: Oversaw MySQL databases emphasizing data integrity and analysis-ready reporting.
  - **Quality Assurance**: Worked with QA teams and carried out thorough unit testing to produce software that is error-free and of the highest caliber.
  - **Project Management**: Completed several projects on schedule and within budget while maintaining high standards of quality.
  - **Software Engineering Practices**: Oversaw projects to raise development standards, review procedures, and testing.
  - **Team Collaboration**: Encouraged cross-functional teams to have an innovative, well-communicated, and ever-learning culture.

Projects

- **Fall Detection Using Image Processing (Machine Learning, Deep Learning)** : A system that uses video input, machine learning, and deep learning was developed to identify human falls. Convolutional neural networks (CNNs) were used for classification, feature extraction, and picture pre-processing. The system accurately classifies fall events by segmenting video data and training a CNN.
- **Smart door and security system (Embedded Systems, IoT)**: created an automated door lock system and a real-time home security monitoring system. ILC7107, Arduino, PCB, Bluetooth, Relay, GSM, and LCD are integrated parts for communication and system control.
- **Machine Learning for the Identification of False News (Data Analysis, Recurrent Neural Networks)**: cleaned text data by eliminating stop words and punctuation, and used padding and tokenization techniques to get datasets ready for analysis.To obtain insights into text data, data analysis was carried out and datasets were represented using word clouds and other visualization techniques.To identify bogus news, a Recurrent Neural Network (RNN) model was constructed and trained using LSTM units. Evaluated the training deep learning model's performance, making adjustments to improve its accuracy and dependability in identifying false information.
- **Database Operations Web Application (Web Development)**: Using REST APIs, a web application was developed to carry out CRUD operations on a database. Utilized HTML and CSS for front-end design and SQL,.NET, Entity Framework, and C♯ for back-end development.
- **ARIMA and LSTM (Time Series Analysis, Machine Learning) for Short-Term Temperature Forecasting**: created a hybrid forecasting model to improve short-term temperature predictions by fusing deep learning (LSTM) and statistical (ARIMA) techniques. Data preprocessing, trend analysis, and the dynamic integration of LSTM and ARIMA models utilizing weighted performance criteria were all steps in the process. The technology showed scalability to real-world applications and high accuracy (RMSE ¡ 0.03) across a range of climatic zones.

Certifications

- Python for Data Science, AI, and Development
- Introduction to Cloud Computing
- Web development with HTML, CSS, and JavaScript
- Introduction to Entity Framework
- Developing Front-End app with React