Nupur Rathod

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SUMMARY

As a graduate student pursuing a Master's degree in Computer Science with a major in Data Science, I possess a track record of exceptional execution and delivery, underpinned by strong communication and presentation skills and meticulous attention to detail. My ability to effectively manage multiple projects under pressure is complemented by my aptitude for presenting complex subject matter to diverse audiences. I am known for upholding values of integrity, respect, and teamwork while specializing in data analytics, innovative big data solutions, software development, and agile development.

EDUCATION

Master of Science in Computer Science (Major in Data Science), *Trinity College Dublin* 09/2023 – 10/2024
Dublin, Ireland

- Core Modules: Machine Learning, Data Analytics, Advanced Software Engineering, Optimization of Algorithm, Security and Privacy, Computer Vision, Artificial Intelligence, Statistics

Bachelor of Engineering in Information Technology, *Savitribai Phule Pune University* 06/2018 – 08/2022
India

Core Modules: Programming Fundamentals, Data Structures and Algorithms, Computer Vision, Database Management Systems (DBMS), Software Engineering, Machine Learning, DevOps, Cloud Computing

PROFESSIONAL EXPERIENCE

Software Engineer Intern, *Skippio* 09/2024 – present
Dublin, Ireland

- Developing crowd analytics using YOLO and OpenCV to count and analyze the number of people in images, aimed at improving venue efficiency by reducing queue times.
- Implementing queue length detection for high-traffic areas, utilizing object detection and distance measurement to classify queue status and update live data on the app.
- Working on the frontend development using React, HTML, CSS, and JavaScript, while integrating APIs and backend services built with Django.

IT Intern, *Creddos Inc* 01/2022 – 06/2022
India

- Conducted data cleansing and preprocessing using Python, handling over 100,000 records to ensure data accuracy for analysis. Developed and maintained dynamic dashboards using Power BI for real-time business performance monitoring.
- Utilized MySQL and Excel to manipulate data, contributing to a 10% increase in operational efficiencies by providing actionable insights for business optimization.
- Assisted in devising customer retention strategies that achieved a 5% reduction in attrition rates, enhancing customer loyalty and supporting long-term relationship building.

Machine Learning Operations Intern, *LinuxWorld Informatics Pvt Ltd* 05/2021 – 08/2021
India

- Completed training and internships in machine learning and DevOps, mastering Python, TensorFlow, OpenCV, Keras, and CI/CD pipeline management with Git, Docker, and Kubernetes for efficient model deployment.
- Conducted data analysis and machine learning model deployments, extracting insights and visualizing them with Tableau dashboards. Developed predictive models for real-time production environments.
- Implemented projects like automated text retrieval and sentiment analysis using NLP, license plate detection, and Social Distance Monitoring Systems, deploying all with Docker and Kubernetes for scalability and management.

SKILLS

- Programming Languages/ Framework: - Python, R, JavaScript, ReactJS, Django,
- Database: - MySQL
- Cloud Technologies: - AWS
- Business Intelligence Tools: - Tableau, PowerBI
- DevOps Tools: Docker, Kubernetes, Jenkins
- Machine Learning Libraries/ Framework: TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy, Keras, XGBoost, Matplotlib, YOLO, OpenCV, Selenium, Beautiful Soupy, NLTK
- MS Office Stack :- MS Excel, MS Word, MS Powerpoint

PROJECTS

Determining the Impact of Maintenance Treatment Duration on ANCA Vasculitis Outcomes

- As part of the ADAPT project and for my thesis, conducted counterfactual analysis to investigate the individual treatment effects (ITE) of maintenance treatment durations on relapse rates in ANCA-associated vasculitis, aiming to develop personalized treatment strategies.
- Developed a robust statistical model for predicting ITEs, factoring in patient demographics such as age, gender, and smoking status to enhance the precision of treatment effectiveness assessments.
- Translated ITE estimates into a practical clinical decision support tool to guide clinicians in optimizing treatment durations for individual patient care in clinical settings.

Sustainable Dublin City Management

- Led the development of Dublin's Sustainable City Management webapp, integrating modules like dynamic bus rerouting, real-time bike stand availability, pollution level monitoring and prediction, and waste management, enhancing city management and public service efficiency.
- Managed Agile workflows to deploy real-time urban management features, significantly improving the user experience across Dublin's transportation and environmental monitoring systems.
- Implemented CI/CD processes and robust monitoring solutions, ensuring system reliability, operational continuity, and proactive enhancements for long-term stability and effectiveness.

Automated Web Content Analysis and Sentiment Scoring System
- Created a Python application for automated retrieval of web text using requests and BeautifulSoup, preparing the foundation for advanced content analysis. Leveraged Python's nltk for efficient text cleaning, which is crucial for accurate sentiment evaluation, and integrated nltk with TextBlob for sentiment scoring, as well as textstat for assessing text complexity.
- Compiled key linguistic and sentiment indicators into a comprehensive Excel report, providing essential metrics that facilitate strategic content analysis and informed decision-making.

DublinBikes Usage Impact Study during COVID-19
- Conducted a detailed study on DublinBikes data to evaluate COVID-19's impact, using advanced data preprocessing and feature engineering for accurate trend predictions.
- Built and optimized a Ridge regression model to forecast bike usage trends during and post-COVID, enhancing urban mobility planning.
- Provided predictive insights into potential bike usage without the pandemic's impact, supporting informed urban planning and infrastructure decisions.

SafeSpace Monitor (Social Distance Monitoring System)
- Developed a real-time monitoring system using YOLOv5 with TensorFlow and OpenCV to accurately detect individuals in video frames, crucial for identifying potential social distancing breaches. This included applying spatial analysis to calculate distances between detected individuals, effectively flagging any violations of social distancing guidelines.
- Enhanced the system to provide visual alerts for social distancing compliance, improving safety measures in public and crowded spaces and ensuring timely interventions when necessary.

CERTIFICATES

- Google Data Analytics Professional Certificate
- Cloud Computing Basics (Cloud 101)
- Stanford Machine Learning Specialization
- Complete Python Bootcamp by Dr. Angela Yu
- The Web Developer Bootcamp Certificate - Udemy
- University of California - Data Visualization with Tableau Specialization

EXTRA-CURRICULAR ACTIVITIES

Vice President of Information Technology Department 2019 – 2022
India
- Demonstrated exceptional leadership by organizing SparkTech, the largest college fest, and various technical fests for the IT department, engaging over 3,000 students and enhancing community involvement.
- Served effectively as a student body representative, addressing over 200 student queries to the administration, facilitating improved communication and problem resolution.
- Coordinated over 20 academic and professional talks and programs, significantly enhancing the educational and professional environment of the IT department.

Volunteer, *Police Mitra* (*Government NGO*) 2017 – present
India
- Conducted campaigns on Women's health awareness and village cleaning with over 50 volunteers and led effective town planning initiatives to improve infrastructure, while collaborating with Police Mitra NGO to leverage data-driven insights in schools and universities, creating safer environments for women and promoting women's safety.

Smart India Hackathon 2020 2020
- Secured a position in the top 300 out of over 200,000 participants in the Smart India Hackathon 2019, demonstrating exceptional problem-solving skills and innovative thinking in competitive software development.

Publications
The Paper **Developers Simplicity by Automating Code** published in **International Journal of Scientific Research in Engineering and Management (IJSREM)** Volume 06, Issue 06 June 2022