Aditya Patel

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EDUCATION

New Jersey Institute of Technology, Newark, NJ **Sep 2023 - Dec 2024**
Master of Information Science, CGPA: 4.0/4.0

Dr. A.P.J. Abdul Kalam Technical University, Lucknow **Aug 2015 - Jun 2019**
Bachelor of Technology in Mechanical Engineering, CGPA: 3.2/4.0

SKILLS

- Programming Languages: Python, SQL, R
- Libraries/Frameworks: Pandas, NumPy, Matplotlib, SciPy, Scikit-learn , PyTorch, TensorFlow
- Tools and Technology: AWS, Linux, Hadoop ecosystem, Power BI, VS Code, Git CUDA, Conda, MySQL Workbench

WORK EXPERIENCE

NEW JERSEY INSTITUTE OF TECHNOLOGY
Data Scientist **Mar 2024 - Dec 2024**

- Conducted data collection, transformation, and preprocessing for the analysis of spatiotemporal variation in harmful algal blooms (HABs) across New Jersey lakes, integrating remote sensing data and geospatial datasets
- Implemented a deep learning model to identify and predict the driving forces behind harmful algal blooms
- Leveraged AI techniques to analyze patterns in satellite imagery and environmental data, contributing to early warning systems for environmental monitoring
- Engineered on point cloud data for 3D segmentation and object identification, utilizing Open3D libraries to build models capable of processing large-scale 3D datasets from remote sensing sources
- Optimized data pipelines for remote sensing AI models, ensuring efficient handling of complex data sets. Reduced processing time by **20%** and improved model accuracy through advanced feature engineering

CAPLINE SERVICE
Business Analyst **Feb 2022 - Mar 2023**

- Incorporated SQL for data extraction, cleaning, and analysis on revenue cycle management (RCM) data, improving billing cycle optimization across healthcare providers
- Created predictive models to forecast client billing trends, leveraging SQL for structured query processing and Excel for data visualization to drive decision-making
- Analyzed and interpreted large datasets using SQL and Python libraries like Pandas, to identify key metrics and support upselling strategies, leading to a **15%** increase in client satisfaction

ACADEMIC PROJECTS

AI-Based Assessment and Validation of Exam **Sep 2024 – Dec 2024**

- Led the development of an AI-powered grading solution for handwritten exams, integrating OCR for handwriting recognition, grammar correction, and plagiarism detection
- Deployed innovative machine learning algorithms to compare grading patterns with generative AI outputs, influencing evaluation accuracy for **1,200+** assignments, and elevating overall student satisfaction ratings by **20%**
- Developed pattern recognition models to detect cheating behaviors, leveraging Python and machine learning techniques to encourage deeper analysis through subjective question formats

Temperature - Forcing Climate modeling **Jan 2024 - Mar 2024**

- Developed a machine learning model to forecast temperature forcing using 12 months of historical data, collaborating with CO-PI Prof. Mengjia Xu
- Implemented advanced architectures, including UNet, ViT (Vision Transformer) with attention mechanisms, and Graph Kernel Networks, achieving a predictive accuracy of **94%.**

American Sign Language Interpreter **Sep 2023 - Dec 2023**

- Created a real-time ASL interpreter that converts video input into sentences using Deep Learning, trained on the WASL dataset, achieving **96%** accuracy
- Integrated Generative AI to form questions from minimal input and deployed the solution in a mobile app to enhance accessibility
- Incorporated Google Text-to-Speech (GTTS) for audio output and performed data manipulation that reduced data size by **87%**, improving runtime efficiency for real-time deployment