PRIYA PATEL

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Education

Master of Science in Data Science | SUNY, University at Buffalo — GPA: 4.00 — Jun 2024
Master of Science in Applied Physics | The M. S. University of Baroda — GPA: 4.00 — Jun 2019

Skills

Programming: Python *(Scikit-learn, Pandas, NumPy, PyTorch, TensorFlow)*, MATLAB, R, SQLite, PostgreSQL, Shell
Softwares: Power BI, Tableau, DistillerSR, Git, Apache Spark, Hadoop, Microsoft Excel, Microsoft PowerPoint
Data Science Skills: Machine Learning algorithms, Deep Learning Techniques, Predictive Modelling, High-Performance Computing, Database Management, Time Series Analysis & Forecasting, Survival Analysis, CRM, A/B Testing

Experience

Data Analyst (Graduate Research Assistant) | University at Buffalo, Buffalo — Aug 2023 - Present

- Working on applying advanced bioinformatics methods to address challenges in the analysis of high-dimensional omics data (8000 cells $\times$ 21000 gene expressions) using AnnData and Scanpy libraries along with Numpy, Pandas and Scikit-learn.
- Employing latent representational learning to reconstruct reduced spaces capturing underlying data structures.
- Utilizing SCREAM method for clustering single-cell Multiomics data obtained from combined scRNA-seq and scATAC-seq.

Graduate Teaching Assistant | University at Buffalo, Buffalo — Jun 2023 - Jun 2024

- Facilitating lectures reviews, & recitations for **Problem-Solving with Algorithms in Python (CDA 500)** and **Introduction to Python (EAS 503)**, both classes of over 250 students.
- Teaching Python and SQL in lab exercises twice a week to enhance students' programming and problem-solving skills.
- Collaborating with other instructors in designing assignments and communicating students' requirements.

Data Scientist (Research Assistant Professor) | Saurashtra University, India — Jun 2019 - Jan 2022

- Analyzed government databases by utilizing data-wrangling and modeling techniques to assess female education policies.
- Conducted systematic review and cleaning of data utilizing the DistillerSR platform on policy documents.
- Provided data-driven insights to policymakers for strategically restructuring the education budget that prioritizes women.
- Delivered lectures for a class of Statistics, Quantum Mechanics & Classical Mechanics for final-year bachelor students.
- Instructed undergraduate students on Probability Theory, Linear Algebra, and Wave Optics, with each class of 180 students.

Graduate Research Assistant | The M. S. University of Baroda, India — Jun 2017 - Jun 2019

- Collected data from Google Scholar and Scopus, comprising more than 2000 publications and citation records of Physicists.
- Investigated and explored Citation Indices to quantify research output of Physicists.
- Calculated various indices and compared those to measure scientific productivity of physicists which were greater than 90%.

Data Science & Machine Learning Projects

Heart Bounding Box Prediction from X-Ray Images | University at Buffalo — Jan 2024 - Jun 2024

- Developed a CNN model based on modified the ResNet-18 architecture that accommodates grayscale X-ray images as input and predicts four coordinates of bounding box corners, utilizing a dataset of 469 annotated images.
- Implemented various preprocessing and data augmentation techniques like random contrast changes, scaling, rotations, and translations to increase the size of the dataset, resulting in model robustness.
- Optimized computational efficiency by leveraging transfer learning with pre-trained weights for all layers except the first and last layers, thereby fine-tuning the model for heart detection.
- Attained an impressive prediction accuracy of approximately 95%, depicting the efficacy and reliability of the model.

Airport Database Management in SQL | University at Buffalo — Aug 2023 - Dec 2023

- Performed data normalization utilizing BCNF analysis to enhance the structure and memory efficiency of the database.
- Executed multiple queries using PostgreSQL to extract valuable insights, contributing to informed decision-making processes.
- Adapted query optimization strategies to reduce computation time by 41%.
- Designed a interactive Power BI dashboard to visualize key metrics and trends for intuitive data exploration.

Chronic Kidney Disease: A Data-Driven Diagnosis | University at Buffalo — Jan 2023 - May 2023

- Preprocessed the raw data by handling missing values, feature reduction, and data normalization to ensure model performance.
- Implemented exploratory data analysis (EDA) techniques to gain insights into the dataset, identify trends and outliers, examine correlations, and select relevant features for model training.
- Developed and implemented multiple statistical learning models, including logistic regression, support vector machines (SVM), decision trees, random forests, and neural networks, using Python and libraries such as scikit-learn and TensorFlow.
- Conducted a comparative analysis of different models' results, assessing performance and suitability for diagnosis.

Certifications

Microsoft Certified: Azure Fundamentals, Deep Learning with PyTorch for Medical Image Analysis, Statistics with R Specialization