Tejas Sanjay Kakad

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Professional Profile:

Driven data science and analytics professional with a solid foundation in data analysis, machine learning, and software engineering. Proficient in Python, statistical modeling, and big data processing, with hands-on experience in developing data workflows, automating analyses, and extracting actionable insights from complex datasets. Skilled in applying data-driven approaches to solve business challenges, optimize processes, and support informed decision-making.

Education:

Texas A&M University – College Station, TX ***January 2024 – Present***

- **Major**: *Master of Science, Computer Science*

Texas A&M University – College Station, TX ***August 2018 – December 2022***

- **Major**: *Bachelor of Science, Computer Science* | **Minor**: *Cybersecurity, Mathematics*

Certifications:

- **Tableau** Desktop Specialist ***October 2024***
- **TensorFlow** Developer Certificate ***November 2024***

Professional Experience:

Urban Resilience.AI Lab – College Station, TX ***January 2024 – May 2024***

Data Science Researcher –

- Collaborated with a doctoral candidate to spearhead an in-depth analysis of traffic disruptions caused by Hurricane Harvey, leveraging Python in a *Jupyter Notebook* setting to manage and analyze sophisticated traffic datasets.
- Utilized Pandas for robust data structuring and manipulation, and NumPy for complex numerical computations to analyze pre- and post-disaster traffic flows across Houston.
- Integrated *NetworkX* to model and analyze the network of city junctions, enabling a detailed examination of traffic patterns and connectivity disruptions.
- Applied *GeoPandas* for advanced geospatial analysis, correlating junction-to-junction travel times with property damage assessments within a one-mile radius, providing a spatial dimension to the traffic data.
- Developed predictive models that combined temporal and spatial data analyses to yield comprehensive insights into the infrastructural impact of natural disasters, contributing significantly to urban planning and disaster resilience strategies.

Urban Resilience.AI Lab – College Station, TX ***August 2022 – December 2022***

Data Science Researcher –

- Developed advanced data collection frameworks in Python to systematically capture and analyze user-level recovery patterns in disaster recovery studies, increasing the resolution and accuracy of behavioral data analysis.
- Applied machine learning techniques and statistical models (including regression analysis and cluster analysis) to dissect large datasets, identifying patterns and trends to inform equitable recovery strategies.
- Utilized Python libraries such as Scikit-Learn, Pandas, and NumPy to perform exploratory data analysis and visualize disparate data sources, deriving actionable insights for urban resilience enhancement.
- Co-authored a journal publication focusing on the statistical analysis of homogeneity and entropy in post-disaster recovery, contributing to academic discourse on urban resilience.

Major Projects:

- **Speed Limit Sign Detector**: Implemented a computer vision system using SVM, CNN and KNN in Python to detect speed limit signs, including data preprocessing, model training, and integration with ROS2 for real-time control in autonomous navigation. The project enhanced object recognition and decision-making in autonomous vehicle systems.
- **Bayesian Personalized Ranking model:** Developed a Bayesian inference-based model to analyze user preferences, achieving high accuracy in recommendation personalization. Utilized Pandas and NumPy for data manipulation and Matplotlib for visualizations, significantly improving AUC performance and delivering enhanced user satisfaction.

Skills:

- *SQL*
- *C/C++*
- *Python*
- *Tableau*
- *JavaScript*
- *Airflow*
- *PySpark*
- *Hadoop*
- *Scikit-Learn*
- *Apache Spark*
- *Pandas*
- *Matplotlib*
- *Linux/Unix*
- *Git/GitHub*
- *TensorFlow*