# TEJAS KUMAR DADHANIYA

DATA SCIENTIST

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## Profile

Data Scientist over 2.5 years of experience, in developing anomaly detection, image analytics, object detection, fraud detection, unsupervised machine learning, and demand forecasting solutions. Proficient in Python programming and well-versed in supervised and unsupervised machine learning techniques, big data analysis, and deep learning methodologies. Adept in data preprocessing, feature engineering, and model optimization, actively contributing to tangible business outcomes through collaborative, data-driven strategies across cross-functional teams.

## Experience

### Data Scientist | Ada Asia | September 2021 - Present

- Collaborated with stakeholders to comprehend business requirements and define the scope of solutions, ensuring alignment with organizational objectives.
- Developed a system to identify and manage **anomalous behaviors, predict future demand of buyers, and automated processes through task scheduling on an Apache server for enhanced efficiency and reduced manual workload.**
- Communicated the solution's advantages and potential impact on the client's business, presenting to the leadership team, including the Chief Strategy Officer (CSO), Director, and category owners.
- Provided mentorship to colleagues and peers for client interviews and projects.

### Computer Vision Intern | Ineuron.Ai | May 2021 – Aug 2021

- Designed and trained a custom object detection model on **Nvidia's GPU, utilizing state-of-the-art (SOTA)** algorithms, to achieve **90% Mean Average Precision (mAP).**
- Created comprehensive documentation, and wireframes for the solution.

## Projects

### Demand Forecasting

- Vendors miss procurement opportunities due to insufficient stock from a lack of demand foresight.
- Designed a **Flask API to extract data from MySQL, category selection, and data preprocessing.** Implemented various **time series algorithms (auto ARIMA, SARIMA, smoothing techniques, GAM, LSTM)** for forecasting and offered **customizable metrics for model selection,** with a default **MAPE option.**
- Automated model updates on a monthly basis using a **cronjob and integrated forecasts into Qlik dashboards.**

### Robotic Arm

- A robotic arm for person detection, mask-wearing assessment, and temperature measurement.
- Designed and trained an **object detection model on Nvidia's GPU, obtain 90% Mean Average Precision (mAP) by state-of-the art algorithms (SSD, YOLO).**
- Model possessed the capability to identify face covering materials (cloth or hands), detect hands, and measure temperature using sensors.
- Module compassed **data preparation, precise annotation, model training, and real-time Nvidia Jetson Nano deployment** for versatile face mask and health monitoring applications.

### Market Sanitization

- Sellers use unconventional image uploads and unique product specs to conceal items in different categories, such as listing a whiteboard under the eraser category or a CD with atypical dimensions.
- Utilized **state-of-the-art algorithms, such as Resnet50, VGG16, InceptionV2, and YOLO, with a statistical approach** module to effectively identify products misaligned with their designated categories.
- Designed a **Flask API to pull data from MySQL, convert messy data into a structured format, and set up automated monthly reports with cronjobs for new catalogs**. Suspected catalog reports were regularly published on **Qlik dashboards.**
- The module reports the **over 3,500 erroneous catalogs across a 200+ categories** in phase I**.**

### Avoiding Order Aggregation

- Avoiding order aggregation, where one transaction is split into multiple transactions, can signal larger collusion or be an early collusion indicator, due to internal limitations.
- **Utilized unsupervised ML (DBSCAN) to** detect AOA transactions by **analyzing buyer behavior and category patterns,** leading to a **restrict monthly transaction value of ~10 crore rupees.**
- Implemented a **Flask API for MySQL data extraction, prepared analytical datasets, and** enabled **automated monthly reporting through cronjob scheduling**. Additionally, integrated the suspected transactions report into Qlik Dashboards for streamlined stakeholder access.

## Technical Skills

- **Language & Database:** Python, MySQL, MongoDB, Hive
- **Packages:** Tenasorflow, keras, sklearn, pandas, numpy, pyspark, openAI, selenium, scrapy, MLflow, CI/CD pipeline etc.
- **IDE:** Jupyter notebook, pycharm, VS code
- **Tools:** Github, Docker, dvc, git bash, excel, power point
- **Cloud:** Cloudera, GCP, Azure, heroku
- **Framework:** TFOD, Darknet, Flask, Gramex

## Education

- **M.Sc Physics | 2015 - 2020 | CGPA - 7.96/10**
  Sardar Vallabhbhai National Institute of Technology, Surat
- **Machine Learning Masters | Aug 2020 – Apr 2021**
  iNeuron.ai, Bengaluru

## Awards & Recognition

- **Customer Delight Award** | NEC Corporation India Private Limited | FEB 2022
- **NEC Team Oscar Award** | NEC Corporation India Private Limited | JUNE 2023
- **Best Impact Award** | ADA Asia | JULY 2023