Amol Khade

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PROFILE SUMMARY

Data professional with 4+ years of experience and a hybrid set of skills spread across machine learning, computer vision and data engineering. Excellent communication skills and presentation skills, and experience working across business functions. Proficient in modern tech stack for backend and data engineering. **Open to remote work, as well as relocation for on-site.**

PROJECTS

Soccer Video Analysis using Computer Vision – Python, OpenCV, YOLO, SuperVision ByteTrack, Roboflow

- Used NVIDIA T4 GPU to train custom object detection model using custom Roboflow dataset and YOLO8L
- Object Detection (Apple Silicon GPU) for player movement using Region of Interest and trackers to create Bounding Boxes
- K-means clustering to extract primary color for each team
- Perspective transformation to account for camera placement, and calculate camera movement within a clip
- Calculate player speed and distance using object tracking, while accounting for perspective distortion and camera movement
- Calculate ball possession by implementing logic to define ball control and NumPy to calculate distance
- github.com/khadeamol/OpenCV-YOLO-Soccer-Video/

Volume Control using Computer Vision – Python, OpenCV, Mediapipe

- Users can use the pinch movement (thumb and index finger) to control media volume on their device
- Utilized Mediapipe to detect and visualize hand movements
- Calculate pixel distance between specific hand landmarks, and translate pixel distance into volume levels
- Added text and visual annotations on the output video for volume levels
- github.com/khadeamol/OpenCV-HandTracking/

Formula 1 Racing Analytics Dashboard – Python, Google Cloud, Streamlit, FastF1, Matplotlib, Seaborn (ongoing improvements)

- Dashboard to analyze telemetry and timing data (millisecond precision) for Formula 1 races (f1analysisdash.streamlit.app)
- Driver Comparison reveals differences in driving styles, lap timing, distance delta, and unravels scope for improvements
- Allows user to understand impact of weather, tire compounds, DRS on lap times, and enable them to optimize strategy

WORK EXPERIENCE

xFusion Technologies   February 2022 – March 2023
 Software Engineer   *San Jose, CA*

- Developed Python APIs to facilitate data processing and analytics features
- Achieved 80% faster processing on Data APIs by integrating Vaex
- Collaborated with sales and product teams to develop data ingestion, ETL design and development features for the platform
- Custom AirFlow operators for ETL Automation
- **AWS S3 Bucket Explorer:** Python API based service within the platform to upload, access, manage user data stored in AWS S3
- **Data Quality Engine:** Generates statistical metrics and visualizations allowing users a view into quality of their data
- **SQL Query Execution Engine**: Using Dask, DuckDB, this SQL runner allows to query data assets in S3 within the platform

Avant Financial, LLC   September 2019 – July 2021
 Data Analyst - Data Engineering Vertical   *Chicago, IL*

- Led the migration of Credit Card Application data, building checks to ensure optimum data quality and efficiency
- Built Business Intelligence dashboards, reporting mechanisms in Looker by identifying & implementing business needs
- and ETL processes to identify and implement current and future business use-cases and eliminate bottlenecks
- Improved daily ETL runtime by up to 50% by eliminating bottlenecks and designing a more optimized data model
- Long terms savings of thousands of dollars in projected computation costs through improved ETLs
- Promoted to Data Analyst from Data Management Analyst – expanded responsibilities
- Provided support and bug resolution for ETL processing, demonstrating comprehensive knowledge in programming and data modelling
- Created and owned LookML definitions for Looker dashboards to streamline reporting
- Saved $$ cost by automating repetitive reporting requests from business units

Gloo, LLC   June 2018 - July 2019
 Data Analyst - Data Science and Strategic Analytics   *Boulder, CO*

- Enhanced coverage for Insights platform by 3x by integrating new data sources
- Performed exploration of novel data source using R scripts (dplyr, tidyr, ggplot2)
- 3x-ed longitudinal tracking for attributes through automated R auditing scripts
- Developed **interactive Tableau dashboards to** understand sentiment analysis

EDUCATION

- **MS Management Information Systems** - University of Cincinnati
- **BE Computer Science** – University of Pune

TECHNICAL SKILLS

- **Machine Learning and Computer Vision:** OpenCV, PyTorch, Scikit-Learn, TensorFlow, YOLO, SuperVision
- **Python, SQL** (PostgreSQL, NoSQL, SQL Server, MySQL), R (Tidyverse – tidyr, dplyr, ggplot2)
- Extensive experience with Pandas, NumPy, FastAPI , Flask, Boto3, Vaex, PySpark, Streamlit
- **Workflow Orchestration and deployment:** Docker, Kubernetes, Jenkins, Airflow
- **Big data tools:** Spark, Hadoop, Presto, Hive
- **BI and Data Visualization:** Dremio, Alation, Looker, Tableau, Matplotlib, Seaborn
- **Experienced with developing on cloud environments on AWS and GCP**