MAHAVIR CHANDALIYA

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EDUCATION

Master of Science in Computer Engineering, Machine Learning Engineering **(Jan 2022 – Dec 2023)**
San Jose State University, San Jose, CA
Relevant Courses: Machine Learning, Data Mining, Math & Statistics for Data Science, Advanced Computer Design, Algorithms and DS in C++.

Bachelor of Engineering in Computer Science and Engineering **(Aug 2016 – Nov 2020)**
D.J. Sanghvi College of Engineering, University of Mumbai, Mumbai, India
Relevant Courses: Applied Math, Linux Scripting Lab, Advanced Algorithms, NLP, Database Mgmt., Big Data Analytics, Distributed Computing.

EXPERIENCE

Research Assistant at SJSU (**Feb 2024 – Current)**
- Contributed to AI cloud research for a surveillance dashboard, leveraging AWS for deployment and integrating data from IoT stations, drones, and CCTV for traffic analysis and accident detection, achieving over 90% accuracy.
- Trained and fine-tuned a CNN-based model for crime detection on campus for crime classification task using CCTV video, improving accuracy by 15%.
- Authored and published a research paper on the "Powerline Inspection System," presented at the Big Data Conference in 2024.

Software Developer at Remajin **(July 2021 – Dec 2021)**
- Developed a user-friendly retail app, a sales representative application, and an admin panel, used by over 1000 retailers and 13 sales representatives.
- Enhanced the sales app and admin panel by collaborating with software and business teams, leading code reviews, and conducting quality checks.
- Resolved over 10 software bugs and added features to the mobile application, leading to the onboarding of 32 manufacturers and over 100 retailers.

Software Engineer Intern at Reckon Energy **(July 2019 – Sept 2020)**
- Led the transition to a robust online presence by enhancing the company's website and optimizing data management with SQL, resulting in a 35% increase in online traffic. Utilized AWS services and third-party providers to ensure reliable and scalable deployment, significantly reducing downtime.
- Spearheaded database development, implementing efficient data management and retrieval with SQL, improving operational efficiency by 40%.
- Provided technical support to customers, resolving 90% of issues within 24 hours, improving customer satisfaction.

PROJECTS

Ayurveda Chatbot (Prompt Engineering, Generative AI, Natural Language Processing**)** **(June 2024 – July 2024)**
- Engineered a Generative AI Ayurveda chatbot using Meta's Llama2 Large Language Model, integrated with LangChain and deployed via Streamlit.
- Implemented Pinecone for efficient text embedding's and similarity search using PDFs, designed prompts for accurate and relevant responses.

Cloud File Manager (AWS Cloud Development, Full-stack Engineering, Restful API's) **(June 2024 – July 2024)**
- Designed a full stack React application for cloud file and text uploads, utilizing Amazon S3 for storage, DynamoDB for data management, and AWS Lambda for serverless CRUD operations. Managed infrastructure with AWS CDK.
- Incorporated API Gateway for API calls and Lambda invocation, hosted on Amplify with secure authentication using Cognito.

Book Genre Prediction (Natural Language Processing, Data Mining, Data Visualization, Machine Learning) **(Oct 2022 – Dec 2022)**
- Developed a web application using deep neural networks to predict literature genres from book summaries, achieving over 90% accuracy. Created a Flask web app to display results.
- Conducted data cleaning, EDA, feature extraction, data augmentation, and experimented with decision trees, Naive Bayes, and various word embeddings, leading to a 10% improvement in classification accuracy.

PUBLICATIONS

UAV-based Powerline Fault Detection and Classification (Link) **(Dec 2023 – July 2024)**
- Devised a Powerline Inspection System using YOLOv8 for fault detection and classification of powerline components, achieving 87% accuracy.
- Managed workflows including data acquisition, annotation, preprocessing with Roboflow, and applied data augmentation and transfer learning techniques. Presented the research paper at the 10th IEEE International Conference on Big Data Computing and Machine Learning Applications.

Social Distancing Detection using Computer Vision (Link) **(Dec 2020 – May 2021)**
- Engineered a Computer Vision application using TensorFlow Graphs, Object Detection API, OpenCV, and Python to enforce social distancing by analyzing live CCTV video. Utilized OpenCV and evaluated CNN, RCNN, Faster-RCNN and YOLO models for object detection.
- Presented the paper at the 5th International Conference on Computing Methodologies and Communication 2021, published in IEEE Xplore.

TECHNICAL SKILLS

- Programming Languages: Python, C++, SQL, C, R, HTML, CSS, JavaScript, TypeScript
- Data Engineering: ETL tools, Hadoop, Spark, Airflow, Kafka, AWS CDK, Terraform, AWS (Redshift, S3, Glue), GCP (BigQuery, Dataflow), Hugging Face
- AI and Machine Learning: Pandas, NumPy, Scikit-learn, PyTorch, OpenCV, TensorFlow, Jupyter Notebooks, Google Colab, SpaCy, NLTK, LangChain
- Data Visualization: Excel, Tableau, Power BI, Matplotlib, Seaborn, Looker, Quarto, Plotly
- Software Development: React, Node.js, Django, REST APIs, Jira, Pytest, Docker, Kubernetes, Git, GitHub, CI/CD
- Databases: MySQL, PostgresSQL, SQLite, MongoDB, Cassandra, DynamoDB, Neo4j, Pinecone, ChromaDB, Weaviate

OTHER ACHIEVEMENTS

- Secured first place in Machine Learning Track at Intel's AI for Social Good Hackathon. Utilized models like RandomForest, XGBoost for an ML prediction problem, building an entire pipeline during a 9-hour event.
- Completed certification courses from OpenCV University CV/DL Professional Program, FreeCodeCamp & LinkedIn Learning.