Surya Vardhan Reddy Puchalapalli

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Houston, TX

EDUCATION

University of Houston, Houston, TX   *May 2025*
Master of Science in Engineering Data Science
Relevant Coursework: Probability and Statistics, Data Science, Data Analysis, Digital Image Processing, Big Data Analytics, Database Management Tools for Business Analytics, Data Mining for Engineers, Applied Statistics for Technology, Information Visualization, Machine Learning

Sathyabama Institute of Science and Technology, Chennai, India   *May 2023*
Bachelor of Engineering in Computer Science
Relevant Coursework: Python and Problem Solving Techniques, Data Structures, Database Management Systems, Machine Learning, Big Data Analytics, Probability and Statistics, Object-Oriented Analysis & Design, Artificial Intelligence, Augmented & Virtual Reality
Leadership & Activities: Member, Ads Marketing Club (conducted workshops); Volunteer Organizer, Cultural Fest; University Admissions and Student Counseling Assistant (social media campaigns, admissions processing)

PROFESSIONAL EXPERIENCE

University of Houston – IT Department   Houston, TX
Instructional Assistant   Jan 2024 – May 2025

> Built Python scripts to automate weekly data collection from 3+ sources (Cape sensors, HPE GreenLake, Aruba Central), saving 3 hours/week of manual effort previously spent on Excel consolidation.

> Centralized Wi-Fi usage and signal data for 6,500+ access points into a single Excel file, enabling faster diagnostics of low-performance zones across the university campus.

> Integrated Excel with Power BI to auto-refresh dashboards used by IT managers in weekly meetings, cutting preparation time from 3–4 hours to under 5 minutes.

> Helped improve Wi-Fi coverage by 20% by identifying poor signal zones and supporting infrastructure upgrades including the installation of new routers in 10+ buildings.

> Performed on-site signal testing and designed Wi-Fi layouts for large facilities like the university library, leading to a 30% increase in signal reliability in high-traffic student areas.

PROJECTS

Financial Risk & Customer Analytics Platform
Python, XGBoost, Scikit-learn, Streamlit, Power BI, LangChain, OpenAI

> Built a unified platform to detect fraud, flag anomalous transactions, segment customers, and predict lifetime value using real/synthetic financial data; deployed interactive dashboards and apps for business use.

> Detected fraud with 97% accuracy and forecasted customer lifetime value with strong precision; added SHAP-based model explainability and PDF Q&A using LangChain.

Disneyland Visitor Experience Dashboard
Python, NLTK, TextBlob, Tableau

> Reviewed 40,000+ customer reviews to identify common visitor concerns across Disneyland parks using NLP.

> Engineered 45+ features from 6 base fields with Python; built Tableau dashboards showing trends in satisfaction and complaints by year and country.

Generative AI Cold Email Generator
Python, Llama 3.3, LangChain, ChromaDB

> Built a role-aware cold email generator powered by LLMs, scraping job descriptions and matching them with candidate profiles.

> Achieved 93% semantic match accuracy by integrating ChromaDB for similarity search and deploying a Streamlit-based UI.

Movie Recommendation System
Python, R, Shiny, KNN, Apriori

> Designed a hybrid recommendation engine combining user-based KNN with Apriori rules on the MovieLens-20M dataset.

> Delivered 100% top-5 hit rate and deployed interactive, filterable results through a responsive Shiny dashboard.

RESEARCH PUBLICATION

Fish Species Classifier for Allergic People using Convolutional Neural Network (CNN) Algorithm
Conference: 2023 7th International Conference on Computing Methodologies and Communication (ICCMC)
DOI: 10.1109/ICCMC56507.2023.10084124
Summary: Proposed a Convolutional Neural Network (CNN)-based fish classification model trained on 9,000 images across 9 classes to detect species causing seafood allergies. Achieved 99.6% classification accuracy using TensorFlow, supporting allergy prevention and aiding professionals in clinical immunology and fish species analysis.

SKILLS

Programming Languages: Python, R, SQL, Git
Programming Tools & Platforms: Google Colab, Jupyter Notebook, GitHub, Oracle Cloud Infrastructure
Libraries & Frameworks: PyTorch, TensorFlow, Scikit-learn, Keras, OpenCV, LangChain, ChromaDB, Matplotlib, Seaborn
Visualization Tools: Tableau, Power BI