NIVETHINI SENTHILSELVAN

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EDUCATION

Northeastern University - Master of Professional Studies in Applied Machine Intelligence (GPA – 3.9/4.0) **Boston, MA**
Key courses: Data Mining, AI Communication and Visualization, ML Operations, Business Intelligence. Dec 2025

Anna University - Bachelor of Technology in Information Technology (CGPA – 9.1/10) **Chennai, IN**
Key courses: Probability and Statistics, DBMS, Python, Java, OOPS, Data Structures, Supply Chain Management. May 2022

PROFESSIONAL EXPERIENCE

Mutlicoreware/Uhnder Pvt Ltd **Chennai, IN**
Software Engineer Jun 2022 – Jul 2024

- Developed a Performance Analysis Dashboard for CPU, RAM, DSP, and ACP usage, integrating **SQL** for data retrieval and processing real-time live data, leveraging **Matplotlib** and **Seaborn** for dynamic visualization.
- Engineered a Peer's KPI Metrics Dashboard to track bug metrics, test case execution, and automation coverage. Optimized data extraction with **SQL**, automated preprocessing with **Python**, and enabled real-time visualization in **Grafana**.
- Automated Radar performance data collection and integration with **SQL**, developed a **Flask-based dashboard** for real-time visualization, identifying 25% more undetected bugs across releases.

Mutlicoreware/Uhnder Pvt Ltd **Chennai, IN**
Intern - Software Sept 2021 – May 2022

- Developed a **Python Auto-Mail Trigger Script** to identify MISRA-C++ violations in Git commits.
- Developed a Hardware Inventory Dashboard using **Python/Flask** to display radar details and its current operational state.

PROJECTS

CPS-AI Assistant (Northeastern University) | RAG | Vector DB | OLLAMA | Groq | Streamlit (Github) **Feb 2025**

- RAG-Powered Chatbot – Built an AI chatbot using **Retrieval-Augmented Generation (RAG)** for precise, context-aware student queries.
- Efficient Vector Search – Implemented **Ollama embeddings with Supabase** vector DB for fast, accurate semantic retrieval.
- Scalable AI UI – Developed a **Streamlit-based interface** with real-time responses via **Groq's LLAMA 3.3 70B** model.

Predictive Analytics for High-Value Customer Churn in the Telecom Sector | EDA & Machine Learning (Github) **Jul 2024**

- Developed a machine learning pipeline leveraging **logistic regression and decision tree classifiers** to predict customer churn for high-value telecom subscribers using monthly usage data.
- **Feature Engineering & Dimensionality Reduction: Applied PCA** and advanced feature extraction techniques to optimize model performance and reduce dimensional complexity, handling class imbalance using **SMOTE.**
- Identified key churn indicators like call volume, data usage, and recharge frequency for retention strategies.

Customer Segmentation and Lead Scoring System for Predicting Lead Conversion | EDA & Logistic Regression(Github) **Jun 2024**

- Engineered a logistic regression model with **feature selection and regularization techniques (L1/L2)** to predict lead conversion probability, optimizing resource allocation for sales teams.
- Conducted data cleaning, outlier treatment, and encoding (one-hot/label) to ensure model robustness.
- Implemented **cross-validation, ROC-AUC analysis, and hyperparameter tuning** to achieve a predictive accuracy of 80% for lead scoring, streamlining lead prioritization and enhancing sales effectiveness.

SQL-Driven Insights for Optimizing Global Movie Release Strategy - Insights for RSVP Movies (Github) **Mar 2024**

- **Applied advanced SQL techniques** such as complex JOINs, subqueries, and window functions (e.g., ROW_NUMBER(), RANK()) to analyze and rank global movie performance based on revenue, genre, and audience demographics.
- **Utilized CTEs and nested queries** for dynamic aggregation, trend analysis, and identifying relationships between budget, cast, and box office success across different regions.
- **Employed advanced filtering and aggregation** with GROUP BY, HAVING, and CASE WHEN statements to uncover insights into movie language, cast impact, and budget allocation, optimizing strategies for global releases.

TECHNICAL SKILLS

Programming Languages: Python (Pandas, NumPy, Matplotlib, Scikit-learn, Seaborn, TensorFlow, PyTorch), Java, SQL.
Data Science and ML: Regression, Classification, Decision Trees, SVM, Clustering, Neural Networks, NLP, LLM.
Data Analytical Tools: Tableau, Power BI, MS Excel (VLOOKUP, Pivot Tables, VBA), Jupyter Notebooks, Google Analytics.
Data Warehouse Tools: MySQL, MSSQL Server, GCP, AWS (S3, EC2), Snowflake, ETL, Airflow, Kubernetes, Docker.
Other Tools and OS: Jira, Confluence, Git, Agile, Kafka, MS PowerPoint, MS Word, Microsoft Office Suite, Windows, Linux.
Soft Skills: Strong Written and Verbal Communication, Easy Collaboration and Teamwork, Problem Solving, Analytical Skills.