

HARSH VERMA

✉ hverma4@pride.hofstra.edu  linkedin.com/in/veharsh  vermahash.github.io  github.com/Vermahash 🏠 Uniondale, NY

PROFESSIONAL SUMMARY

Data scientist with ~3 experience building and deploying end-to-end machine learning systems. Skilled in Python, SQL, and Docker with expertise in supervised learning, model evaluation, and API-based deployment. Experienced in calibration, explainability, and automation workflows for data-driven decision-making. OPT STEM through 2028.

TECHNICAL SKILLS

Languages and ML: Python, SQL, Pandas, NumPy, scikit-learn, XGBoost, LightGBM, LangChain, sentence-transformers, Feature Engineering, Cross-Validation, Calibration, Explainability (SHAP).

ML ops and infra: Docker, FastAPI, Flask, Streamlit, Git, n8n, AWS (S3, Lambda, SageMaker familiar), Pinecone, CI/CD Concepts.

Methods: Supervised Learning, Clustering, Dimensionality Reduction, NLP, RAG Workflows, Evaluation, Model Deployment.

EXPERIENCE

Data Analyst Co-Op(Strategic Program Office), Optimum (Altice USA)

Feb 2025- May 2025, New York

- Built a portfolio KPI view from FP&A and Ops inputs across ~250 active projects.
- Suggested a real-time ROI-risk forecasting model (Python, SQL, XGBoost) for 100 + FP&A-approved projects, surfacing potential performance dips 8 weeks in advance, designed to prevent approx \$150 K / yr in misallocated budgets through proactive staffing adjustments.
- Cut manual audit time from ~24-36 hours per cycle to under 2 minutes.
- Used Power BI, DAX, and SQL to publish a live dashboard for an SVP, tracking stage gates, CapEx vs OpEx, forecast revenue, and dependencies.
- Partnered with cross-functional teams to automate KPI reporting pipelines, improving portfolio visibility and reducing reporting latency.
- Integrated SQL and Power BI workflows into a repeatable data quality framework, raising audit accuracy and traceability.

Data Analyst, Deloitte (Offices of the US)

May 2021- Aug 2023

- Delivered Workday HCM data conversions for Wells Fargo, AT&T, MUSC, Carrier.
- Authored 100+ SQL scripts, split across ~40 pre-load validations, ~60 mappings and transforms, ~30 post-load reconciliations.
- Improved first-build data error rate from ~25 percent to ~2 percent by final build through iterative validations and reconciliations.
- Executed ~120–150 total loads across 4 projects. Supported ~2 mock cutovers per project.
- Designed reusable SQL validation and reconciliation templates, improving load consistency and reducing manual effort across clients.
- Collaborated with technical leads to optimize ETL performance and monitor load quality metrics in production environments.
- Mentored 3 junior analysts. Wrote Mapping Checklist and Validation Script Checklist.

PROJECTS

Retrieval Augmented Chatbot

- **Retrieval-Augmented Chatbot (Python, LLaMA 3, Pinecone, LangChain):** Created a privacy-focused chatbot to query internal technical documents. Indexed PDFs with paragraph chunking and MiniLM embeddings. Achieved p50 latency under 1 second. Verified retrieval accuracy using a 50-question evaluation set.

Generative AI & Search

- **Property-Matching Ranker (Python, Hybrid LLM, Vector Embeddings, FastAPI):** Built a recommendation system to rank properties for user profiles based on budget and preferences. Combined vector embeddings with a logic layer for numeric constraints and topic overlap. Generated top matches with rationales in under 10 seconds. Served results via a FastAPI backend with a lightweight frontend.

Machine Learning Projects

- **Health Insurance Risk Classifier (Python, Docker, SHAP, Scikit-Learn):** Developed a calibrated classifier to predict insurance premiums and risk factors. Trained the model using 5-fold cross-validation to achieve a 0.88 ROC-AUC. Explained top risk drivers like BMI and income using SHAP values. Containerised the application with Docker for consistent deployment.
- **House-Price Prediction API (Python, AWS EC2, MLP, XGBoost, LightGBM):** Engineered a pricing engine to estimate real estate values across 247,000 records. Cleaned data by imputing missing values and removing outliers using IQR logic. Trained an MLP model that achieved an R2 of 0.981 and a MAPE of 4.37 per cent. Deployed the model on a public AWS EC2 instance for real-time inference.

Job Matching Workflow

- **AI Workflow for Job Matching (n8n, Ollama):** Automated manual job curation by building a local LLM workflow that parses LinkedIn listings and evaluates fit against resumes using AI Agent. Reduced per-job review time from 15 minutes to 45 seconds.

AWARDS

3 SPOT awards across Wells Fargo, MUSC, Carrier for high-quality loads and fast defect resolution.

EDUCATION

Hofstra University, Zarb School of Business

Jan 2024 – May 2025

M.S. in Business Analytics

Hempstead, NY

Courses: Advanced Quantitative Analysis, Machine Learning, Data Mining, Data Visualization, Database Management, Web Analytics.

Manipal University

Aug 2016 – May 2020

Bachelor of Technology in Computer Communication Engineering

Jaipur, India