Deven Rahul Shah

716-573-4760 | deven.rshaha@gmail.com | linkedin.com/in/deven-shaha | github.com/ShahaDeven

Education

University at Buffalo — Buffalo, NY
Masters in Data Science — *Aug. 2024 – Dec 2025*

MIT World Peace University — Pune, IN
B.Tech in Computer Science and Engineering — *Nov. 2020 – July 2024*

Experience

Python Developer Intern — Jan. 2024 – June 2024
Markytics — *Pune, IN*

- Leveraged data analysis to identify performance bottlenecks in Django-based web applications, achieving a 30% reduction in response times.
- Restructured complex SQL statements using data-driven methods, reducing latency and optimizing user experience during peak traffic.
- Collaborated with a team of 3 front-end developers, enhancing interface usability based on post-deployment user metrics.
- Spearheaded implementation of standardized code review checklists, increasing review throughput by 50% within six months.
- Skills: Python, Django, SQL, Data Analysis, UX Optimization, Team Collaboration

Researcher – Graduate Admission Prediction — Mar. 2025 – Present
University at Buffalo — *Buffalo, NY*

- Led a solo research project under Dr. David Doermann (Chair, Dept. of CSE) to predict graduate admissions using historical applicant data.
- Performed end-to-end data processing, feature engineering with AHP scoring, and model training using Random Forest, Neural Networks, and Gradient Boosting.
- Achieved 74% accuracy through k-fold cross-validation and iterative tuning with Scikit-learn.
- Visualized feature importance and model diagnostics using Python libraries for explainability and reporting.
- Incorporated LIME to provide transparent, interpretable local explanations as part of an XAI pipeline for model decision analysis.
- Skills: Python, Scikit-learn, Pandas, AHP, Machine Learning, Random Forest, Neural Networks, Gradient Boosting, Data Preprocessing, Model Evaluation

Projects

Optimization for Fleet Management using Ant Colony Optimization | *Python, Jupyter Notebook*

- Developed a capacity-aware routing system for large-scale distribution fleets using Ant Colony Optimization under time and speed constraints.
- Applied Clark-weights cost model to determine optimal truck costs under VRP settings.
- Published findings in IEEE Xplore: https://ieeexplore.ieee.org/document/10988157
- Skills: Optimization, Python, Ant Colony Algorithm, Jupyter, Logistics Modeling

Time Series Sales Forecasting using LSTM | *Python, Machine Learning,Deep Learning*

- Spearheaded the design and development of a time-series forecasting model to predict daily retail sales using stacked LSTM neural networks with dropout regularization and Huber loss.
- Used Rossmann Store Sales data from Kaggle.
- Orchestrated end-to-end data preprocessing pipeline including outlier removal, temporal feature engineering (e.g., day-of-week, weekend, week-of-year), and MinMax scaling for sequential LSTM input.
- Implemented autoregressive forecasting loops to accurately predict next-day, 7-day, and 30-day future sales with visual trend analysis using smoothed plots and downsampling.
- Tuned deep learning architecture using Optuna hyperparameter optimization across epochs, learning rate, batch size, LSTM units, and dropout rate to improve validation MAE and R^2.
- Skills: Python, TensorFlow/Keras, LSTM, Time Series Forecasting, Optuna, NumPy, Pandas, Matplotlib, Hyperparameter Tuning

Technical Skills

Languages: Python, Java, JavaScript, SQL, HTML, CSS, Salesforce
Frameworks/Tools: Django, Flask, React, Node.js, Jupyter, VS Code, Google Colab
Databases: MSSQL, SQLite, PostgreSQL, MongoDB
Libraries/Other: Scikit-learn, Pandas, NumPy, Matplotlib, TensorFlow, Machine Learning, Deep Learning, NLP, Tableau, Git, Docker