Daniela Nieto Prada

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https://github.com/danielanietp

Data-driven engineer with 7+ years of experience in simulation and data workflows, seeking to transition into a full-time data science role focused on machine learning and predictive analytics. Experienced in model development, data processing, and visualization, with strong foundations in applied statistics and data analysis.

EXPERIENCE

Systems Analysis Engineer

Argonne National Laboratory — Chicago, IL — 2018 - 2025

Argonne's Vehicle and Mobility Systems Department conducts research to improve the energy efficiency, sustainability, and performance of advanced vehicles and transportation systems. The group develops simulation tools, data platforms, and AI-driven models to evaluate vehicle technologies, electrification strategies, and mobility systems for industry and government partners.

- Developed object-oriented **MATLAB** classes to automate simulation workflows and streamline data processing pipelines reducing manual effort, cutting simulation time, and enabling large-scale parallelization.
- Designed and implemented end-to-end data workflows in **Python** and **MATLAB** to transform complex simulation outputs into structured, high-quality datasets, leading to the development of AutonomieAI, a simulation framework running 10,000× faster than traditional methods.
- Leveraged **Python**, **SQL**, and **Tableau** to preprocess, analyze, and visualize multi-dimensional vehicle datasets, developing a comprehensive database covering all U.S. vehicles sold in the last 25 years and delivering interactive dashboards for decision support.
- Authored and contributed to multiple publications, conferences, and client deliverables, translating advanced modeling and simulation research into data-driven engineering solutions adopted by industry and DOE partners.

EDUCATION

Masters in Computer Science

University of Illinois Urbana-Champaign — 2024

> **Relevant Coursework:** Database Systems, Applied Machine Learning, Practical Statistical Learning, Advanced Bayesian Modeling, Cloud Computing Applications, Theory and Practice of Data Cleaning

Bachelor of Science in Mechanical Engineering, cum laude

Illinois Institute of Technology — 2018

PROJECTS

Predicting House Prices with Elastic Net and Gradient Boosting

- Built and compared Elastic Net and Gradient Boosting models in **R** to predict log-transformed house prices, meeting strict RMSE performance targets.
- Designed a robust feature engineering and preprocessing pipeline (outlier capping, skew correction, standardization, and one-hot encoding) to ensure reproducibility across train/test splits.
- Implemented cross-validation and hyperparameter tuning, achieving strong predictive performance and model stability.

Time-Series Forecasting of Weekly Retail Sales using SVD Smoothing and Linear Regression

- Implemented a forecasting pipeline for retail sales by applying Singular Value Decomposition (SVD) smoothing to weekly sales data by department and store, enhancing prediction stability
- Built department-level linear regression models leveraging encoded time-based features (week, year) and postprocessing logic to handle holiday shifts, achieving competition-aligned prediction accuracy.

SKILLS

Python (pandas, NumPy, scikit-learn, matplotlib, TensorFlow, PyTorch), Tableau, R, SQL, MongoDB, MATLAB

RELEVANT PUBLICATION

AutonomieAI: An Efficient and Deployable Vehicle Energy Consumption Estimation Toolkit. Transportation Research Part D: Transport and Environment, Vol. 142, 2025.