Katherine Delno

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Profile

Recent statistics graduate transitioning into the data science field, eager to build on a rigorous statistical foundation through hands-on machine learning work. Seeking a role where I can collaborate with seasoned machine learning experts, solve real-world data problems, and grow into a proficient machine learning engineer.

Education

M.S. Statistics: Advanced Methods and Data Analysis 2022 – 2025
University of Washington – Seattle, WA

B.S. Mathematics 2018 – 2022
University of Nevada – Reno, NV

Relevant Skills

Statistics & Data Analysis: Statistical theory (asymptotic theory, distributional theory); hypothesis testing (t-tests, likelihood ratio, Wald); uncertainty quantification (confidence intervals, calibration, conformal methods); analysis of variance and experimental design; regression and generalized linear models (linear, logistic, Poisson, Gamma); regularized regression (ridge, lasso); classification methods (linear discriminant analysis, naïve Bayes); mixed-effects models (linear mixed models, generalized linear mixed models, generalized estimating equations); causal analysis; resampling methods; multivariate methods (principal components analysis, clustering); Bayesian basics.

Data Science & Machine Learning: R (tidyverse, ranger, xgboost); Python (pandas, numpy, scikit-learn, TensorFlow, PyTorch); natural language processing and transformers (text preprocessing, embedding-based feature engineering); tree-based and ensemble methods; visualization and reporting (ggplot2, matplotlib/seaborn, Jupyter).

Experience

Mentor for Statistics & Probability Directed Reading Program September 2024 – December 2024
University of Washington – Seattle, WA
Designed and delivered a one-on-one 10-week short course on statistical learning, covering topics including linear regression, classification methods, resampling techniques, and regularization. Created all course materials and lectures, guided the student through weekly discussions, and provided ongoing feedback and support to deepen their understanding.

Graduate Teaching Assistant January 2022 – June 2022
University of Nevada – Reno, NV
Served as a Graduate Teaching Assistant for an undergraduate statistics course, leading discussion sections, designing and delivering lecture materials, and providing one-on-one and group tutoring to help students understand complex statistical concepts. Mentored undergraduate students by offering academic support and career guidance.

Relevant Projects

RandomForestSpecCheck: A Permutation-Based Random Forest Diagnostic for LMMs
Developed a novel diagnostic method for detecting model misspecification in linear mixed models (LMMs) utilizing random forests and permutation testing. Achieved false-positive rates <3% and >90% power in detecting misspecification in 5400 simulated datasets and verified on real-world data.

A Conformal Prediction Framework for Multi-Label Movie Genre Classification
Led development of a multi-label movie genre classifier by fine-tuning a lightweight transformer and integrating conformal prediction to produce calibrated sets of genre tags, striking an effective balance between capturing all relevant labels and avoiding spurious ones.

Fine-Tuning BERT Models for Recipe Classification
Fine-tuned transformer-based NLP architectures to classify recipes by dietary category, leveraging transfer learning to capture rich culinary semantics and implementing an end-to-end ML workflow while embedding-driven feature engineering, hyperparameter optimization, and cross-validation to deliver a robust, generalizable classifier.