Dr. Naveed Merchant
Statistician

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Work Experience

Current, from Jan 2022

Climate Corporation
Data Scientist

Explored, queried, manipulated and modeled big data using mixed models, bayesian statistical modeling, and visualizations. Extracted, transformed and loaded (ETL) abstract data structures to model the effect of disease on crop systems. Evaluated data quality and discovered data limitations and reported to team and senior management.

Apr 2021 – Dec 2021

MAXIS-IT
Statistical Modeling Intern

Applied semi-supervised and unsupervised machine learning techniques to detect a person's stress given real time biological information. Coordinated with HR, reviewed resumes, drafted technical interview questions and conducted/evaluated technical interviews to recruit new team members.

Jan 2019 – Jun 2020

General Motors (Texas A&M)
Research Assistant

Optimized algorithms to enable calculations on huge volumes of data regarding car operations and its correlation to future mechanical flaws. Developed and delivered a tool to query weather data from 3rd party sources and merge it within the General Motors database. Engineered informative features to use in large time series analysis to explain malfunctions in conveyor belts

Aug 2019 – Dec 2019

Texas A&M
Teaching Research Assistant

Developed and delivered STAT 201 introductory statistics course designed to introduce sampling concepts to a class of 71 undergraduate students. Overall student rating: 4.22 out of 5. Increased engagement by leveraging online learning platforms.

Doctoral Research Projects

"Screening Methods for Classification Based on Non-parametric Bayesian Tests"

We propose a Bayesian non-parametric method for checking if data sets share the same distribution, create a frequentist analogue, and apply it for variable selection in classification. A R package is available that implements the research.

"COVID-19: Short Term Prediction Model Using Daily Incidence Data"

A new method is proposed and used for forecasting the number of daily incidences of COVID-19. A dashboard is developed, and a paper is prepared for the method used.

Education

2017 – 2022 **Doctor of Philosophy**
Statistics
Texas A&M University

2014 – 2017 **Bachelors of Science**
Applied Mathematics
Texas A&M University

Skills

Beginner	Linux, APIs, Teaching, Julia
Intermediate	LaTeX, Microsoft Office SQL, Spark, AWS, Hadoop C++, SAS Experimental Design Causal Inference
Expert	R, Python Bayesian Statistics Machine Learning Markdown, GitHub Dimension Reduction, Big Data Parallel Computing Approximate Bayesian Computing

Communication Skills

Conferences	Cross-validation Bayes Factors to Test Equality of Two Densities 2021 World Meeting of the International Society for Bayesian Analysis

Publications

Merchant N, Hart JD. A Bayesian Motivated Two-Sample Test Based on Kernel Density Estimates. *Entropy*. 2022 Aug 3;24(8):1071.

Zhao H, **Merchant NN**, McNulty A, Radcliff TA, Cote MJ, Fischer RS, Sang H, Ory MG. COVID-19: Short term prediction model using daily incidence data. PloS one. 2021 Apr 14;16(4):e0250110.

Merchant N, Hart J, Choi T, Use of Cross-validation Bayes Factors to Test Equality of Two Densities. arXiv preprint arXiv:2003.06368. 2020 Mar 13.