

Dr. Naveed Merchant

Statistician



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WORK EXPERIENCE

Vanguard Data Analyst Specialist

JUN 2023 – PRESENT

Explored and modeled effectiveness of financial tools for clients using SQL and Python. Illustrated effectiveness found with models via Tableau. Automated scripting tasks and updates to dashboards with AWS Glue and GitHub actions. Verified caller intent of transcribed calls to determine why clients called the company.

Climate Corporation Data Scientist

JAN 2022 – DEC 2022

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 data limitations and reported to team and senior management.

MAXIS-IT Statistician

APR 2021 – DEC 2021

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.

General Motors Research Assistant

JAN 2019 – JUN 2020

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

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

SKILLS

BEGINNER	Linux, APIs, Teaching, Julia
INTERMEDIATE	LaTeX, Microsoft Office AWS, Hadoop, Tableau C++, SAS Experimental Design Causal Inference Neural Nets, Deep Learning
EXPERT	R, Python, Parallel Computing Glue, Machine Learning, NLP Markdown, GitHub, SQL, Spark Dimension Reduction, Big Data Bayesian Computing, Sagemaker

COMMUNICATION SKILLS

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

Merchant N, Hart JD. Screening Methods for Classification Based on Non-parametric Bayesian Tests. arXiv preprint arXiv:2301.02283. 2023 Jan 5.

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.

Levy JG, Mendoza-Herrera A, **Merchant N**, Berg-Falloure KM, Kolomiets MV, Tamborindeguy C. Evaluation of the Effect of 'Candidatus Liberibacter Solanacearum' Haplotypes in Tobacco Infection. *Agronomy*. 2023 Feb 16;13(2):569.