CAROLINE LEDBETTER

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Experienced Machine Learning Engineer

Expert engineer with a deep understanding of probability and statistics with a demonstrated record of making algorithms fast, efficient, and robust. Proven problem solver experienced in applying statistical and scientific rigor to an array of data questions. Skilled researcher able to quickly implement new methodologies from the literature. Driven scientist who understands the importance of actionable insights and data driven decisions. Effective communicator delivering for a wide variety of technical and non-technical audiences.

Core Competencies

Python, Databricks, Spark, git, SQL, R, Airflow, Docker | Predictive Modeling | Causal Inference | Machine Learning & Statistics | Simulations | Bayesian Data Analysis | Generalized Linear Regression | Survival Analysis | Cluster and Hierarchal Modeling | Dimensionality Reduction | Study Design | Time Series Forecasting | Test Driven Development | Big Data | Data Analysis | Data Visualization | Missing Data

Professional Experience

Softheon, Inc. (acquired with NextHealthTechnologies July 2022)
Lead Data Scientist | July 2022 – Present

- Managed a team through the acquisition and transition. Provided stability, guidance and mentorship. Key leader in discussions of business strategy and new product offerings.
- Implemented algorithm updates to use the latest in causal inference research for high dimensional and time dependent data.

Senior Data Scientist | Mar 2021 – July 2022
Data Scientist | Apr 2020 – Mar 2021

- Complete rebuild of core intellectual property into pyspark from pandas resulting in 50% reduction in cloud computing costs, 10x improvements in speed, robust testing frameworks, and improved extensibility.
- Implemented docker runtime deployments and CI/CD pipelines. Improvements to full testing suite resulting in 10x improvements to speed of pipelines.
- Winner of the GEM Award, a companywide award given to one individual per quarter for contributions that exceeded expectations for exceptional performance.
- Integration of new analytics methods into the core offerings of our platform from proof of concept to production.
- Client presentations to introduce and explain new and existing analytics capabilities to broad range of technical and non-technical audiences.

Center for Innovative Design and Analysis, University of Colorado,
Collaborative Biostatistician | 2017-2020

- Developed a predictive model for food source attribution for enteric disease outbreaks and deployed as a shiny app.
- Conducted a multi-year, multi-site step wedge study of the effectiveness of a clinical decision support tool to improve opioid prescribing.
- Performed a unique pilot analysis to develop evidence-based oxygenation standards in trauma patients using time dependent covariates in a survival analysis.
- Piloted a study developing predictive models for opioid abuse.
- Developed an R package to automate and standardize project workflows.
- Taught R courses and seminars on R, SAS, reproducibility, and version control.

JFK Partners , University of Colorado

Research Assistant | 2015-2017

- Worked with collaborators to develop clear research questions and design statistical analyses.
- Used SQL, SAS, and R to clean and analyze data from a large relational database.
- Methods included linear regression and mixed models.

Colorado School of Public Health

Research Assistant | 2015-2016

- Literature review and meta-analysis for burden of foodborne illness.

Education

MPH, Biostatistics and Epidemiology, 2017
Colorado School of Public Health
BA, **Biochemistry,** 2015
University of Colorado at Boulder