Dalston Ward

Data Science and Machine Learning Engineering

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Experience

SENIOR DATA SCIENTIST | Clayco

September 2023 to present | St. Louis, MO

MACHINE LEARNING ENGINEER | Decide Technologies

2021 to 2023 | St. Louis, MO

Data Analyst, Applied Machine Learning (2021-2023)

- Built models with TensorFlow, scikit-learn, and catboost to predict click-through and conversion rates from ad placements.
- Deployed containerized machine learning (ML) models with Docker and Google Cloud Platform (GCP) that automate ad selection and pricing.
- Implemented dynamic queries, multithreaded data fetches, and more memory-efficient python code that sped up model training and lowered costs.
- Prevented bugs from reaching production by writing scripts that allow colleagues to easily train and test-deploy models on GCP.
- Incorporated software design best practices such as reducing cohesion, using dependency injection, and documenting code.
- Maintained Decide's codebase by conducting code reviews, implementing unit tests, and automating dependency management.
- Voted Team MVP by colleagues for Q4 2021–Q1 2022.

POSTDOCTORAL FELLOW | Swiss Federal Institute of Technology

2017 to 2021 | Zurich, Switzerland

- Implemented a randomized control trial on naturalization campaigns with the City of Zurich and employed ML to uncover variation in the campaign's effectiveness.
- Used causal inference and ML methods such as instrumental variables, dimension reduction, and lasso regression on population-level data to research immigration.
- Taught masters-level courses in data science, statistics, and causal inference and advised student research projects.
- Presented research to university faculty, policymakers, and at various conferences.

RESEARCH AND TEACHING ASSISTANT | Washington University in St. Louis

2012-2017 | St. Louis, MO

Skills

PROGRAMMING:
Python • SQL •
R • Scala

DATA SCIENCE:
TensorFlow & Keras • numpy •
pandas • numba • scikit-learn

DATA ENGINEERING:
Kafka • Spark • Hbase • Hive

TOOLS/PLATFORMS:

GCP • Docker • Git •
Airflow • nbdev

QUANTITATIVE METHODS:

- Machine learning
- Causal inference
- Probability & statistics
- Experimental design
- Data visualization
- Generalized linear models
- Multi-level modelling

Education

WASHINGTON UNIVERSITY IN ST. LOUIS

PhD Political Science (2017)
MA Political Science (2014)
Fields: Quantitative Methods & Comparative Politics

DRURY UNIVERSITY

BA Political Science and German (2011)
magna cum laude

Select Projects & Other Training

COMPETING IN PROGRAMMATIC AUCTIONS FOR AD TRAFFIC | Decide Technologies

- Spearheaded the use of experimentation and causal inference to iteratively improve pricing models.
- Participated in cross-team collaborations to develop data- and model-driven strategies to identify and remove bot traffic.
- Streamlined the process of deploying models by creating tools that flexibly combine ML models with business logic.
- Expanded the set of features available for modeling by connecting auction data from BigQuery with the ML environment.

HOURS WITH EXPERTS: FUNDAMENTALS OF MODERN DATA ENGINEERING | 1904labs, Spring 2023

- Eight-week course on streaming data pipelines with theoretical and hands-on instruction.
- Covered topics include: pub/sub systems, data pipelines, streaming data frameworks, and NoSQL databases.
- Tools: Scala, Kafka, Spark, Hbase, Hive