JULIANNA HARWOOD

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Professional Experience

Senior Data Scientist, *Los Angeles Times,* Los Angeles CA *July 2022 - Present*

- Sole data scientist responsible for developing a real-time dynamic metering system using Random Forest models to predict user subscription propensity and ad revenue in order to personalize free content limits and increase revenue per user.
- Research and apply causal inference methods such as difference-in-difference and regression discontinuity to time series data from un-controlled feature launches to understand the causal relationships between features and KPIs such as homepage clickthrough rate and visits per user.
- Refined and expanded the business's LTV prediction model by standardizing performance testing of the base Cox proportional hazards regression model and expanding use cases to achieve less than 5% error in predicting average annual LTV per subscriber. Re-architected pipeline and built front end application to make inference self-serve for product stakeholders.
- Implemented a platform to automate A/B test results analysis, including audience segmentation, SRM checks, correction for multiple comparisons and dimensional analysis to reduce data science work needed for each test from weeks to hours, doubling the number of A/B tests YoY.
- Frequently present findings to non-technical stakeholders and cross functional partners in order to translate complex analysis into actionable strategies.

Data Scientist, *Accenture*, Los Angeles CA *August 2019 – June 2022*

- Co-authored novel optimization model to reduce transaction costs of financial portfolios. Implemented the model as a proof of concept to achieve one of the first demonstrations of Amazon Braket, AWS's quantum computing service.
- Developed test suite in Python to evaluate performance of custom-made, BERT-based, conversational Q&A platform, hosted on AWS.
- Created and implemented in a proof of concept a mixed integer model to optimize delivery truck routes using annealing algorithms.
- Routinely summarized and communicated results of projects to product owners and lead developers to facilitate informed decision making around iterations and improvements.

Data Analyst*, Cogo Labs,* Cambridge MA *June – August 2018*

- Analyzed web traffic data using SQL to develop plans for online happy-hour-finder that reached 11,000 visits in seven weeks.
- Designed and conducted A/B tests to evaluate website features and ad strategies against KPIs such as daily unique visitors, bounce rates and ad CPM.
- Developed dashboards from SQL workflows to provide accessible and up to date visibility into KPIs.
- Won the company-wide hackathon by building a messaging bot using Python and SQL that alerts users to long running and long-standing SQL executions and deliveries to minimize company data storage costs.

Education

Wesleyan University, Middletown CT *May 2019*

Bachelor of Arts in Physics and Economics, Minor in Data Analysis

- Graduated Phi Beta Kappa, Fall inductee (reserved for top 2% of graduating class)
- Awarded *Outstanding Contribution to Science Education*, May 2019: Given to a senior who has demonstrated exceptional skills as an undergraduate teaching assistant.
- Awarded *Johnston Prize*, May 2016: Given to those first-year students or sophomores whose performance in their first two semesters of physics shows exceptional promise.

Skills

Programming Expertise: Python (pandas, NumPy, scikit-learn, Jupyter), R, SQL (Snowflake), Git, Shiny

Technical Expertise: machine learning, causal inference, A/B testing, survival analysis, AWS ecosystem