

# JULIANNA HARWOOD

Los Angeles, CA | 207-233-3240 | [jgaharwood@gmail.com](mailto:jgaharwood@gmail.com) | [juliannaharwood.com](http://juliannaharwood.com)

## Professional Experience

---

**Senior Data Scientist**, *Los Angeles Times*, Los Angeles CA

*July 2022 - Present*

- 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 click through rate and visits per user.
- Spearheaded the refinement and expansion of 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.
- Trained Random Forest models to forecast user subscription behavior, enabling strategic placement of high-revenue articles behind paywalls to increase monetization.
- Implemented a platform to automate A/B test results visualization, audience segmentation 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.
- Achieved one of the first demonstrations of Amazon Braket, AWS's quantum computing service.
- Created and implemented a mixed integer model to optimize delivery truck routes using annealing algorithms.
- Performed grid search parameter tuning to achieve valid solutions for networks 10x larger than previously possible with our mixed integer models.
- Scripted automated tests with Pytest to evaluate performance of custom-made, BERT-based, conversational Q&A platform, hosted on AWS.
- Routinely summarized and communicated results of projects to product owner 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 AB tests to evaluate website features and ad strategies against KPIs such as daily unique visitors, bounce rates and cost per click of ads.
- 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, R, SQL (Snowflake), Git, Shiny

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