

JULIANNA HARWOOD

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Education

Wesleyan University, Middletown CT

May 2019

Bachelor of Arts, Major: Physics, Economics; Minor: Data Analysis; Phi Beta Kappa

Professional Experience

Data Scientist, *Accenture*, Los Angeles CA

August 2019 – Present

I work in Accenture's technology innovation practice, developing quantum computing and AI prototypes to solve business problems and drive client adoption of cutting-edge technologies.

- **Truck Routing Application**
 - Created and implemented mixed integer model to optimize delivery truck routes using annealing algorithms.
 - Performed parameter tuning through grid searches to optimize the model for the algorithm, achieving valid solutions for problems 10x larger than those of previous attempts using similar approaches.
- **Portfolio Optimization Application**
 - Co-authored optimization model to reduce transaction costs of financial portfolios; submitted for patent.
 - Led the integration of the algorithm into a web app using AWS services to achieve one of the first demonstrations of Amazon Braket, AWS's quantum computing service.
- **Radiotherapy Application**
 - Developed Python Flask app for novel approach of using quantum annealing to target cancerous tumors through intensity modulated radiotherapy methods.
 - Created data models, curated test data, and implemented AWS S3 bucket storage.
- **AI Enterprise Search Engine**
 - 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 to product owner and lead developer 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.
- Built a messaging bot using Python and SQL that alerts users to long running and long-standing SQL executions and deliveries to minimize data storage costs for the company.

Analytical Projects

Quantitative Analysis Center, Wesleyan University

January – May 2019

- Designed and completed a research project to analyze data from U.S. News and World Report to explore different grouping of American colleges and universities.
- Preprocessed and cleaned data, performed univariate and bivariate analysis, tested different methods of factor analysis and clustering, and wrote report including finalized analysis and visualizations; written in R.

Quantitative Analysis Center, Wesleyan University

September – December 2018

- Designed and completed a research project using machine learning techniques to predict how likely a given gun violence incident is to have one or more casualties.
- Cleaned data, performed extensive feature engineering and created a series of classifiers using Naïve Bayes, Random Forest, Support Vector Machine and Neural Networks; written in R.

Skills

Programming Expertise: Python (3 years), SQL, R, STATA, Mathematica.

Technical Expertise: AWS Ecosystem, machine learning, statistical inference & data science, quantum information science, virtual reality.