

COLIN QUIRK

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EDUCATION

University of Chicago

*PhD in Psychology (All but Dissertation)**

2016 — 2020

Hampshire College

BA in Cognitive Neuroscience

2011 — 2014

WORK EXPERIENCE

Cohere Health – Senior Data Scientist

2023 — Present

- Led an extended effort to improve the performance of 19 deployed models which automatically approve authorization requests. This included standardizing the codebase for these models to make improvements easier to implement and track.
- Extended the models described above to ensure high performance for a new client and implemented changes to how the models were deployed to ensure they were operational on launch day.
- Launched a new monitoring tool for our models which involved extensive work in pyspark and airflow to generate the required data in the correct format.
- Led a high-value project looking into possible fraud with a fast turnaround time, presented my findings to the client, and co-authored an internal white paper describing the method and results.

SparkNeuro – Director of Machine Learning

2020 — 2022

Previous titles: Data Scientist, Senior Machine Learning Engineer

- Managed a team of 3 data scientists on the creation of XGBoost models to predict whether patients had cognitive impairment and Alzheimer's disease in support of a clinical study and published the results of our models at a medical conference (AUC: 0.90, sensitivity: 0.88, specificity: 0.91).
- Helped plan and build a production level MLOps infrastructure built on AWS Lambda to ensure our data science processes were trackable, testable, and repeatable.
- Designed and created a python dashboard with input from business stakeholders in order to allow for tracking our clinical study progress by combining data from multiple sources into clear and understandable figures.
- Assisted with the design and writing of our clinical study's statistical analysis plan and protocol and performed power analysis and simulations to guide internal thinking.

Allstate – Data Science Intern

Summer 2019

- Created a model using XGBoost to predict likelihood of a quote binding to a high level of performance given the difficulty of the task (AUC: 0.77) while being vigilant about the possibility of data leakage. After ending my internship project ahead of schedule, I extended this work and created a new model for other types of quotes.
- Presented an analysis based on simulations I ran suggesting that applying our team's models to a different business problem could earn over \$1,000,000 more than the current solution.
- Added the ability to visualize SHAP values from our models into our shared machine learning libraries.

ADDITIONAL PROJECTS

- Classifying Individuals with Eyetracking Data using Deep Learning
- [Spatial Biases Influence Encoding of Information into Working Memory](#)
- Started Writing an [Open-Source Statistics Textbook](#)
- [Youtube Channel for Teaching R](#)

Technical skills: Python, R, SQL, pyspark, airflow, statistics/ML, classification, regression, CNNs, AWS, docker, bash, git

For a full list of my publications, please see colinquirk.com/publications