

Caleb E. Strait

Data Scientist

(413) 884 - 4767
caleb.strait@gmail.com
Greater NYC Area

calebstrait.com
github.com/calebstrait
linkedin.com/in/calebstrait

Education

University of Rochester

Ph.D., Brain & Cognitive Sciences, May 2016
M.A., Brain & Cognitive Sciences, January 2014
Computational Neuroscience of Decision Making

Oberlin College

B.A., Psychology, May 2011
Minor, Computer Science
Concentration, Cognitive Science

Skills

Communication - with both technical and non-technical audiences
Data Analysis: Data Visualization, Statistical Modeling, Insight Mining
Machine Learning: K-Means, PCA, SVM, Linear & Logistic Regression, Artificial Neural Network, Decision Trees, Naive Bayes, Natural Language Processing
Python: Flask, Pandas, Numpy, Jupyter Notebook, SciKit-Learn, Matplotlib
Github, Java, C/C++/C#, Matlab, R, HTML, CSS, JS, API, SQL, AWS

Experience

Data Science Fellow, Insight Data Science, 2017

- Devised and wrote custom recommendation algorithms for Insight client companies.
- Built a proof-of-concept web application around one of these algorithms. "Nextgame" gives increasingly personalized video game recommendations by prompting user feedback for each of a series of recommended games. Wrote a back end that collects data from web scraping and APIs, cleans data with regular expressions, and stores data in a PostgreSQL database hosted with AWS. The app averages reviewer scores to create an initial item recommendation hierarchy, then uses reinforcement learning to recalculate that hierarchy as the user gives feedback on recommendations. Built a Flask front end that queries the database for each user using SQLAlchemy. (Python)
- Repo at goo.gl/2dGQ3C
- Analytically validated the app's performance showing that there were significantly more users than we would expect by chance for whom recommendations were more positively received after incorporating more feedback. (Python)
- Presented the algorithm and web app to over a dozen Insight client companies, including Facebook, Amazon, and Microsoft. (PowerPoint)

Computational Neuroscientist, University of Rochester, 2011-2016

- Designed and programmed 30+ custom experiments to characterize neural signal processing during human decision-making. (Matlab, C++)
- Estimated mid-decision neuronal spike frequencies from extracellular voltage measurement time series data using PCA with K-Means. (Matlab, OmniPlex)
- Wrote a series of custom signal processing toolkits for use with decision-making experiment datasets whose formats I had standardized. Used sliding-window logistic regression models of neuronal spike frequencies to characterize how the recorded brain area's neurons encode decision parameters. (Matlab)
- Example at goo.gl/1TndRV
- Published these findings across four 1st-author peer-reviewed articles in some of the highest impact-factor journals in computational neuroscience.
- Hosted at calebstrait.com

Adjunct Professor, Brain & Cognitive Sciences, Univ. of Rochester, 2014-2015

- Designed, taught, tested, & graded two sessions of a 16-lecture undergraduate course, *Foundations of Cognitive Science*. (PowerPoint)
- Built and presented a curriculum to college freshmen, broadly covering the current scientific understanding of how the brain processes different types of information.