Brian K. Hurley

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bkhurley.github.io bkhurley bkhurley

EXPERIENCE

Insight Data Science — Palo Alto, California
Data Science Fellow — *January 2018 - Present*

- Developed "Beat the Crowd," a Python-based web application for predicting crowd levels on Bay Area Rapid Transit (BART).
- Used Pandas to collect and clean 7 years of hourly BART ridership data, scraped 7 years of weather history from Weather Underground using lxml, and stored data in a PostgreSQL database.
- Identified trends and patterns in data through visualization with Matplotlib and Seaborn.
- Applied machine learning techniques to predict passenger volume using a random forest regression algorithm with Scikit-Learn. Random forest model explained 93% of the variance in test data.
- Deployed a front-end interface on Amazon Web Services using Flask with Bootstrap. Returns crowd predictions based on user input.

University of California Davis, Center for Mind and Brain — Davis, California
PhD Researcher — *September 2010 - January 2018*

- Created and led multiple research projects on human auditory processing using controlled experiments, cognitive tasks, psychophysics, motion capture, and computational models.
- Developed analysis pipelines in R, MATLAB, and Python to obtain, clean, visualize, and statistically model data. Pipelines subsequently used by several laboratory researchers across projects.
- Collaborated across institutions and disciplines to leverage complimentary skills. Resulted in 1 inter-institution publication and the optimization of a prevalent experiment paradigm.
- Developed Attmap Experiment Manager and AdaptBAT experiment software programs using MAX/MSP and MATLAB, respectively. Both used a Bayesian framework to optimize estimation of listener thresholds for deviance detection in sound patterns and were used by researchers at multiple institutions.

University of California Davis, Psychology Department — Davis, California
Teaching Assistant — *September 2010 – December 2017*

- Translated complex topics in human behavior, neuroscience, and research methods to new learners in understandable, compelling terms.
- Wrote and delivered presentations to student audiences that ranged from small groups to hundreds.
- Assisted undergraduate students in improving writing and research design skills.

University of Texas at Dallas, School of Behavioral & Brain Science — Richardson, Texas
Research Assistant — *January 2008 - May 2010*

- Collected and analyzed behavioral data from 3 experiments on human memory.
- Trained 4 research assistants on data collection procedures and assisted with laboratory management.

EDUCATION

University of California, Davis — Davis, California
Ph.D., Psychology (Cognitive Neuroscience) — *January 2018*

University of Texas at Dallas — Richardson, Texas
B.A., Psychology, *Magna Cum Laude* — *May 2010*

- Awarded *Undergraduate Research Scholar Award* grant.
- Awarded *School of Behavioral & Brain Sciences Honors with Distinction*

SKILLS

Languages: Python, R, MATLAB, SQL
Tools: *Python*: Pandas, NumPy, Scikit-Learn, Matplotlib, Seaborn; some experience: SciPy, lxml, Beautiful Soup | *R*: ggplot2, dplyr, tidyr | *Version control*: git, svn

SIDE PROJECT

Diablo Velo – https://github.com/bkhurley/diablo_velo

- Used Python to analyze and predict cyclists' moving times for a popular segment on Strava.com
- Obtained data from Strava API and scraped weather data from Weather Underground using Beautiful Soup.
- Munged, visualized data and built ridge regression using Pandas, Matplotlib, Seaborn, and Scikit-Learn.