Tommy Blanchard, PhD

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Data Science Lead at Fresenius Medical Care, with a background in Computer Science and Computational Neuroscience. Experienced teacher and mentor.

Technical Skills Summary

- 15 years experience programming
- Data analysis: parametric and non-parametric statistics, machine learning, data simulations
- Python (5 years experience): Pandas, sklearn, Matplotlib, Bokeh, Flask, NLTK, Requests
- R (4 years experience): ggplot, caret, RStan, RShiny, tm
- Comfortable with: SQL (1 year experience), Matlab (5 years experience)
- Familiarity with: JavaScript, Hadoop, Spark, MapReduce, git

Professional Experience

Fresenius Medical Care – Waltham, MA

Data Science Lead (January 2018 – Present)
Data Scientist (January 2017 – January 2018)

Duties

- Develop predictive models to be put into production
- Perform advanced analytics and data exploration
- Manage and lead the data science team
- Represent data science and advanced analytics work in company presentations
- Mentor analysts and junior data scientists

Major Projects

- Used hundreds of medical variables and unstructured notes to develop a model to find patients most likely to be hospitalized in next two days. Achieved an ROC AUC of 0.80. Technologies used: **XGBoost, word2vec, NLTK, Pandas**
- Developed a model to detect undocumented comorbidities. Led to an over 10-fold in increase in efficiency of finance claims group of finding undocumented comorbidities. Technologies used: **Random forest, logistic regression, Pandas**
- Developed an algorithm for scheduling nurse visits to dialysis clinics. Allowed the freeing up of one full-time nurse while increasing efficiency of scheduling. Technologies used: **Google Maps API, Pandas**
- Developed an RShiny dashboard for exploring employee survey comments. The user-interface allowed HR to easily find most mentioned phrases, and slice data based on employee engagement levels, employee job type, or geographical location. Technologies used: **R/tm, RShiny**

Harvard University – Cambridge, MA

Postdoctoral Researcher in Computational Cognitive Neuroscience Lab (July 2015-January 2017)

Duties

- Designed experiments, collect behavioral and fMRI data
- Communicated experiment results through scientific presentations and manuscripts
- Analyzed data using statistical methods
- Mentored graduate students and undergraduates

Major Projects

- Designed and performed an experiment to understand neural mechanisms of exploration. Computationally modeled behavior and analyzed fMRI data using GLMs. Produced a manuscript that was published in a peer-reviewed journal. Technologies used: **RStan, Matlab**

University of Rochester – Rochester, NY

Postdoctoral Researcher in Neuroscience of Decision-Making Lab (May 2015-July 2015)

Major Projects

- Designed and implemented a new analytical tool for analyzing neural data using Bayesian statistics. Led to a published manuscript. Technologies used: **RStan**

Teaching Experience

Teaching assistant for undergraduate courses (6 semesters of experience):

- University of Rochester: Animal Minds (Fall 2012, Fall 2013), Neural Foundations of Behavior (Fall 2014)
- University of Waterloo: Business Ethics (Fall 2010, Summer 2011), Critical Thinking (Spring 2011)

Full-time instructional support for computer science (3 semesters of experience):

- University of Waterloo: Foundations of Sequential Programming (Spring 2008, Summer 2009, Spring 2010)

Education

- **The Data Incubator** – New York, NY
  - September 2016-October 2016: Data Science Fellowship
- **University of Rochester** – Rochester, NY
  - May 2015: PhD in Brain and Cognitive Sciences
- **University of Waterloo** – Waterloo, Ontario, Canada
  - August 2011: MA in Philosophy
  - May 2010: BS in Computer Science

Achievements

- Finalist for Forbes Top 30 Under 30 in Science (2015, 2016)
- Research has been featured in The New York Times, Wired, and Scientific American
- Author of 13 scientific articles (10 first-author) and 1 statistics chapter, cited 328 times (h-index: 9)
- Research talks given at Harvard, Brown, MIT, Yale, and UPenn
- Oral presentations given at 11 different conferences, including 2 international (Japan, France)