Stephen K. Bailey

Data Scientist and Educator

DATA ANALYSIS AND MANAGEMENT

AUG. 2013 – PRESENT

Vanderbilt University

NIH Predoctoral Research Fellow

Used multi-modal MRI to describe how the brain specializes for reading and language. Awarded competitive NIH F31 research fellowship, valued at $100k. Authored 8 papers (3 first author) published in *PNAS*, *Journal of Neuroscience* and elsewhere. Utilized diverse analytical methods, including GLM, ICA/PCA, graph theory, timeseries, multilevel modeling. Primarily worked with Large Data (200-1000 GB datasets) in a computing cluster environment. Managed lab imaging database of 13,000+ scans, and directed migration to web-based storage platform (XNAT).

- **Tracking the development of the modular network architecture of the brain**
  Used graph theory methods with functional and diffusion MRI to describe how brain networks develop between ages 6 – 21.

- **Detailing brain dynamics in expert readers with high temporal resolution fMRI**
  Pioneered use of multi-band fMRI at Vanderbilt to show how "neuronal" responses to words become refined in expert readers.

- **Classifying poor readers by brain structure with support vector machines**
  Used neuroanatomical data and SVMs to differentiate typical readers, dyslexic readers and those with poor comprehension.

MAY 2017 – AUG. 2017

Metro Nashville Public Schools

Data Analyst

Synthesized data from multiple systems (state, local government, internal databases) to create reports on teaching force retention and hiring trends. Power BI reports were shared district-wide with 130+ school and administrative leaders. Reported to Executive Director of Talent Strategy.

MAY 2011 – AUG. 2013

Teach For America

Manager – Regional Operations

Built systems for tracking grant compliance, teacher development and business operations. Sole manager of compliance for $120k AmeriCorps grant – awarded a 55% increase in funding ($60k) after first year. Organized 15 professional development events attended by 60-120 professionals. Forecasted and tracked monthly business expenses for $1,000,000+ operating budget.

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EDUCATION

2013 – PRESENT	**Neuroscience & Quantitative Methods** DOCTOR OF PHILOSOPHY *Vanderbilt University*
2007 – 2011	**Chemistry & Philosophy** BACHELOR OF SCIENCE BACHELOR OF ARTS *Samford University*

TEACHING AND COMMUNICATION

2018	**Biomedical Imaging Analysis** DATACAMP.COM COURSE *Designer and instructor for introductory course on using Python (scipy, numpy, matplotlib) for image processing. To be released mid-2018.*
2017	**"Principles of Network Analysis"** PYNASH & PYTENNESSEE *One-hour tutorial on graph theory and NetworkX using scraped data from Meetup.com. Code and slides on Github.*
2016	**Intermediate English** CONEXIÓN AMERICAS *Volunteer teacher of ESL course for new Americans. 100+ instructional hours.*
2015	**Rural STEM Enrichment** CARROLL COUNTY, TN *Instructor of Saturday morning lab classes for high school freshman.*
2014	**Toastmasters International** VANDERBILT CHAPTER *Honed speaking skills with weekly presentations and professional development. Served as VP of Education.*

SOFTWARE EXPERTISE

ADVANCED	Python (esp. numpy, scipy, pandas, matplotlib, scikit-learn), Matlab, bash, Power BI, SLURM
PROFICIENT	Docker/Singularity, R, SQL, Linux, HTML, CSS, LaTeX, Windows, Office suite