MARK C ZIELINSKI, Ph.D.

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SKILLS

Languages	Python, MATLAB, Bash/Unix/Linux
Tools & Packages	NumPy, SciPy, Pandas, Matplotlib, Seaborn, Scikit-learn, Librosa, Jupyter, Git, SQL, BeautifulSoup, Selenium
Skills & Techniques	parametric/nonparametric/circular/bayesian statistics, regression, classification, clustering, resampling, dimensionality reduction, time series analysis, digital signal processing, manifold learning, graph theory

EXPERIENCE

Freelance Data Science Consulting 2020 - Present
Neuroscience/Data Science Consultant for Wave Neurosciences *Boston, MA*

- Analyzing double-blind clinical trial data of veterans with PTSD, consisting of 84 21-channel EEGs at 3 longitudinal time points (300 EEGs total). Project calls for comparisons and longitudinal trends between sham and neuromodulation groups in wide and narrow-band power, coherence, and frequency components, using supervised and unsupervised machine learning techniques for time series.
- Contracted for 40hrs, with deliverables including code, notebooks, and a study report outlining analyses.

Brandeis University 2013 - Present
Graduate Researcher, Teaching Assistant, and Postdoctoral Scholar *Boston, MA*

- Collected and analyzed 1GB/min time series data to study neural interactions between the hippocampus and prefrontal cortex, two interconnected brain regions important for learning and decision making
- Used PCA, generalized linear models, unsupervised learning techniques, and bayesian methods to decode brain cell responses and brain area communication, resulting in 4 published papers providing new insights into representations of memory
- Mentored graduate and undergraduate students in analytical techniques; wrote and directed a yearly internal course on computer science, continuous and discrete data analysis, and common statistical methods

Insight Data Science 2019 - 2020
Data Science Fellow *Boston, MA*

- Consulted with PyrAmes Inc. to identify, cluster, and clean movement artifacts from a wireless, non-invasive wearable device collecting continuous blood pressure diagnostics
- Parsed over 100 hours of labeled and 1000 hours of unlabeled time series data, used spectral methods to engineer features and perform unsupervised clustering / blind signal source separation
- Delivered well-documented code to PyrAmes Inc, a report on possible further optimization techniques, and a pipeline to implement the detection, cleaning, and clustering algorithm

University of Chicago Medical Center 2011 - 2013
Research Technologist- Pancreatic Islet Research Lab *Chicago, IL*

University of Chicago 2009 - 2011
Research Assistant- Somatosensory Research and Neuroprosthetics Lab *Chicago, IL*

EDUCATION

Brandeis University 2013 - 2020
Ph.D. in Neuroscience, Certificate in Quantitative Biology

University of Chicago 2007 - 2011
B.A. in Biology, Specialization in Neuroscience, Minor in Computational Neuroscience