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, RNASeq and scRNASeq

EXPERIENCE

Scipher Medicine 03/2021-Present
Data Scientist *Boston, MA*

- Used Bayesian and graph theoretic techniques to infer causality/directionality in proprietary PPI, using RNASeq techniques, pipelines, and data sources.
- Organized, collated, and streamlined patient metadata, wrote functions to determine clinical endpoints, and externalized these data pipelines to an AWS-native data lake.

Brandeis University 09/2013 - 03/2021
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, providing published 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.

Freelance Data Science Consulting 10/2020 - 02/2021
Neuroscience/Data Science Consultant for Wave Neurosciences *Boston, MA*

- Analyzed double-blind clinical trial data of veterans with PTSD, consisting of 84 21-channel EEGs at 3 longitudinal time points (300 EEGs total).
- Used supervised and unsupervised machine learning techniques, information theory, and graph theory for comparisons and longitudinal trends in functional connectivity between sham and neuromodulation groups in wide and narrow-band power and coherence.
- Contracted for 80hrs, with deliverables including code, notebooks, and a study report outlining analyses.

Insight Data Science 08/2019 - 01/2020
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.

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