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EXPERIENCE

Kaggle Competition: Decoding Human Brain MEG Signals **May 2014 – present**

:: To understand how the brain represents information by studying a simple situation: trying to predict when a subject is viewing a face or scrambled face
:: Built Linux Debian server from scratch to store and analyze data
:: Collaborated with creator of Comp-Engine Time Series software which automatically extracts hundreds of miscellaneous time-series features
:: Carried out data exploration, feature selection, and machine learning using Python (pandas, scikit-learn)

Mechanisms behind Cortical Connectivity (postdoctoral researcher at NYU) **June 2013 – May 2015**

:: Determine the nature of the neural synchronization and oscillations that allows discrete brain areas to communicate information in order to support high-level cognition
:: Collected and analyzed eyetracking data of people making eye movements to a target
:: Utilized various analyses: frequency domain methods (ERP, spectrograms, coherence), frequency connectivity methods (granger causality, phase-locking), multiple comparison correction through clustering

Cortical Networks Subserving Memory (graduate student at UCB) **Sept 2008 – Aug 2012**

:: Establish which localized brain areas communicate information between each other to subserve working memory
:: Designed experiments with competing hypothesis to be resolved using behavioral data (reaction time, accuracy, verbal responses) involving attention and memory
:: Analyzed big data (fMRI) in Linux server computing environment utilizing parallel distributed processing on UC Berkeley computer cluster
:: Utilized multiple statistical tests: PCA, linear regression, t-tests, ANOVA, FDR, connectivity methods (correlation, coherence, granger causality), non-parametric, bootstrapping, and permutation statistics
:: Presented results at 4 conferences and in 1 published manuscript

Machine Learning fMRI Project (graduate student at UCB) **Aug 2006 – Sept 2008**

:: Elucidate how Alzheimer's disease causes memory problems by determining if brain representations of face and scene images have more overlap with each other
:: Implemented a neural network with a backpropagation learning algorithm because of its powerful ability to classify patterns and similarity to real brain networks
:: Feature selection, cross-validation, and other machine learning processing steps
:: Results demonstrate face and scene brain activity are more distinct while on Alzheimer's medication
:: Presented results at 2 international conferences

EDUCATION

PhD in Neuroscience, University of California, Berkeley (Berkeley, CA) 2012
MD, Columbia University (New York, NY) 2006
BS in Biotechnology, Valedictorian, Rutgers University (New Brunswick, NJ) 2002

SKILLS

R (ggplot, dplyr) || Python (numpy, pandas, scikit-learn) || Matlab || shell scripting || visual C++ (many years ago) || HTML/CSS/Javascript (enough to blog)