TIMOTHY WENG, PHD

Computational Neuroscientist

PhD-trained computational neuroscientist with 9 years of data science experience on large-scale biomedical and behavioral research data, emphasis on human behavior & decision-making. Unique combination of technical skills, critical thinking aptitude, and creative problem solving abilities to produce data-driven and actionable solutions. Effective communicator who regularly translates technical analyses into written reports and presentations that are understandable to both technical and non-technical audiences.

WORK EXPERIENCE

2018 | present

Postdoctoral Research Fellow
Computational Neuroimaging Laboratory, Dell Medical School, The University of Texas at Austin
Austin, TX

- Build, maintain, and test Python-based ETL pipelines for processing terrabytes of multi-modal neuroimaging data on high performance computing systems
- Aggregate multiple data streams from image processing pipelines and automate production of data quality metrics and descriptive statistics
- Deploy statistical models and machine learning algorithms in R and Python to predict brain aging from longitudinal cardiovascular health data (N = 1,000+)
- Write documentation on using Python-based software C-PAC for different use cases
- Identify software defects and collaborate closely with C-PAC software engineering team to reproduce them and test patches
- Design and manage collaborative projects with multiple academic disciplines and diverse team settings

2020 | present

Consultant
Center for Biomedical Image Computing and Analytics, Perelman School of Medicine, University of Pennsylvania
Philadelphia, PA (remote)

- Develop infrastructure for automated and efficient data processing pipeline for functional MRI data using state-of-the-art image processing techniques
- Provide technical support and education for biomedical imaging acquisition protocols and data processing methodologies

PROJECT EXPERIENCE

2012-2018

Graduate Researcher
Health, Brain, Cognition Laboratory, The University of Iowa
Iowa City, IA

- Co-developed software package to optimize and automate processing of MRI data, reducing computational time by ~150%
- Enabled team to explore data, build statistical models, and publish results more quickly than previous implementation (10+ papers published using this codebase)
- Utilized high performance computing cluster to parallelize pipeline execution
- Completed 5 research projects that culminated in doctoral thesis using high-dimensional biomedical and behavioral data to predict human behavior change
- Implemented multivariate analyses in R, including linear mixed effects modeling, principal components analysis, and MANCOVA
- Awarded first-place in departmental data competition for ability to visualize and present data clearly and succinctly

2020

ANC Neighbors
Austin New Church
Austin, TX

- Data-driven geospatial analysis to inform church leaders about connecting their ~460 church members across Austin metro
- Built Python-based application to load and extract from database and transform them to geospatial coordinates
- Applied k-means clustering to identify geospatial clusters and classify new datapoints
- Performed basic descriptive statistics and visualizations for geospatial clusters

CONTACT INFO

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linkedin.com/tbweng

SKILLS

Python (Pandas, SciKit-Learn, SciPy, Matplotlib, NumPy),
R (Tidyverse),
Data Analysis,
Advanced Statistics,
Hypothesis-driven Testing (A/B Testing),
Experimental Design (Randomized Control Trial),
Machine Learning,
Regression Analysis (Linear, Logistic, Linear Mixed Effects),
Containers (Docker, Singularity)
Jupyter Notebook, AWS, Git, SQL, Bash, Data Visualization
Agile

EDUCATION

The University of Iowa

Ph.D. in Psychology (Behavioral and Cognitive Neuroscience), 2018

Thesis: "Brain network predictors of exercise behavior change in sedentary older adults: an emotion and decision-making perspective"

University of Illinois at Urbana-Champaign

B.S. (Honors) in Psychology (Behavioral and Cognitive Neuroscience), 2011

PUBLICATIONS

For a full list of my publications (15+ articles, 500+ citations), please see my Google Scholar

Last updated August 2021