

Benjamin Hadler B.S.

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EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO

B.S. Biology with a Specialization in Bioinformatics; minor in Psychology

Activities: UCSD Fencing Team Captain, UCSD Philosophy Club

GPA: 3.71 (3.94 in psychology)

RESEARCH EXPERIENCE

SOCIAL COGNITION LAB (UCSD)

Piotr Winkielman (10 Hours/Week)

- Administered a human-subjects study investigating relationships among interoception, social attention, and loneliness, guiding participants through self-report measures and a Social Stroop task
- Managed participant sessions, study records, data entry and participant compensation while ensuring consistent adherence to experimental protocols
- Maintained four experimental computer stations, troubleshooting technical issues and working with the research team to implement protocol updates and support consistent data collection
- Participated in lab meetings focused on experimental design, methodology and theory. Assisted with proofreading research manuscripts.

SELECTED PROJECTS

TOPIC MODELING OF SOCIAL ANXIETY DISCUSSIONS ON REDDIT

Python · pandas · LDA · BERTopic · TopicGPT · Sentence Transformers · UMAP · HDBSCAN · NLP

- Analyzed 27,197 posts and 238,589 comments from r/socialanxiety spanning March 2019 to March 2021 to identify themes in large-scale discussions of social anxiety
- Implemented and compared three distinct approaches to exploratory topic modeling: probabilistic LDA, embedding-based BERTopic and LLM-based TopicGPT
- Built method-specific text preprocessing and modeling pipelines using techniques including lemmatization, transformer embeddings, dimensionality reduction and clustering
- Tuned model parameters and LLM prompts and compared the approaches based on the interpretability, organization and granularity of the themes they identified

NETWORK PSYCHOMETRICS OF CONSCIENCIOUSNESS AND GOALS

R · qgraph · bootnet · EBICglasso · LASSO-Regularized Partial Correlations · Network Analysis · Bootstrapping

- Analyzed relationships between conscientiousness and nine trait-related goals in a sample of 432 participants using network psychometric methods
- Estimated and visualized LASSO-regularized partial correlation networks at the trait, facet and item levels before examining network structure and node centrality.
- Used simulation and bootstrap methods to evaluate projected replicability and network stability.

COMPUTER-ASSISTED DIAGNOSIS (CADx) FOR BRAIN TUMOR DETECTION IN MRI

Python · PyTorch · CNNs · Data Augmentation · Medical Image Classification · ROC-AUC

- Developed and trained a lightweight convolutional neural network for binary brain tumor detection in MRI images using PyTorch
- Implemented image preprocessing and data augmentation and trained the model on stratified training, validation and test sets constructed from 189 MRI images
- Evaluated performance using multiple classification metrics, achieving 85.7% test accuracy and 0.878 ROC-AUC. Examined methodological and dataset-related factors affecting model performance.

RELEVANT SKILLS

Programming & Data Analysis: Python, R, MATLAB, Java, C; tidyverse, qqplot, pandas, NumPy, scikit-learn, PyTorch

Statistics & Quantitative Methods: Regression, bootstrapping, hierarchical/multilevel models, Bayesian analysis, factor analysis, network psychometrics

Research Methods & Software: Human-subjects research, behavioral experiments, survey research, Zotero, SPSS
Git/GitHub

Additional Training: Statistician in R Career Track (DataCamp); Machine Learning Specialization (Andrew Ng);
Introduction to Deep Learning (MIT); Statistics & Research Methods (Publication Academy)

AWARDS AND HONORS

Member, Psi Chi, The International Honor Society in Psychology

Eight Time UCSD Provost Honors Recipient

Arthur Ashe Jr. Sports Scholar Award

UC San Diego Scholar-Athlete of the Week

Three Time NCAA All American Honors (Awarded to top 12 college athletes each year)

YouTube Gold Play Button (1,000,000 Channel Subscribers)