William Thyer

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Education

PhD Integrative Neuroscience, Psychology August 2023
University of Chicago, Institute for Mind and Biology Chicago, IL

BS Psychology, Minor in Statistics 2017
Florida State University Tallahassee, FL

Experience

Graduate Researcher July 2018 - July 2023
Awh & Vogel Lab, University of Chicago Chicago, IL

- Lead teams of researchers in projects resulting in publications in high-impact peer-reviewed journals, advancing knowledge in the field of cognitive neuroscience
- Developed a machine learning library for EEG analysis with Python, Scikit-Learn, and Matplotlib, which is now used by more than 5 researchers
- Collected and curated multi-modal datasets comprising hundreds of hours of EEG, eye-tracking, and behavioral data
- Created a data processing pipeline in MATLAB that synchronizes and cleans neural, eye-tracking, and behavioral data which is now used by 2 research labs

Data Scientist Intern June 2022 - September 2022
Intuitive Surgical Atlanta, GA

- Researched real-time feedback systems for surgeons during robotic surgeries, leading to improved understanding of potential future applications
- Trained machine learning models on multivariate time series data with Scikit-Learn, TSFresh, and TSLearn
- Applied unsupervised clustering methods to improve model interpretability, providing insights into model performance and improving feedback systems

Data Scientist Intern July 2021 - December 2021
Spark Neuro Remote

- Trained XGBoost models on biomedical data for the diagnosis of neurological disorders, improving accuracy and specificity of the diagnosis processes
- Created 3D interactive visualizations of neural data which provided more specific and interpretable medical reports
- Utilized AWS cloud services and parallel processing techniques to efficiently process large datasets, reducing computation time and improving data analysis efficiency

Relevant Projects

Calm Hands, AI-Powered App to Reduce Habitual Nail-Biting

- Developed a Tkinter desktop application that provides real-time feedback on nail-biting behavior
- Trained a deep neural network using the Fastai library by fine-tuning an image classification model from the Pytorch Image Model library

CityMapper, Package for Visualizing and Analyzing Bicycle Infrastructure

- Developed a tool for visualizing and analyzing cycleway networks in major US cities using Geopandas, Matplotlib, and OSMnx, a Python library for accessing OpenStreetMap data
- Created an online dashboard so users could generate custom maps with Jupyter-Widgets