Senthil Palanivelu

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PROFILE:

- Interested in developing predictive models that combines physiological, behavioral, clinical, imaging, genetics, epidemiological, lab and behavioral measures with the goal of improving outcome predictions in various diseases.

PROFESSIONAL EXPERIENCE:

Bioinformatician I, Brigham and Women's Hospital Sep 2022 – Present

- Developed open-source C/C++ software package for manipulating and analyzing polysomnographic recordings, with a focus on the sleep EEG
- Developed and deployed a web-based interactive EDF viewer that captures real time user inputs, integrate with backend models and display analytical results
- Validate, execute algorithms and predictive model for automated sleep staging
- Implement best practices and methods for building efficient docker container images

Research Associate, Battelle Center for Mathematical Medicine, Nationwide Children's Hospital Sep 2021 - July 2022

- Developed programs in MATLAB for analyzing sleep rhythms in human brain
- Developed MALTAB data analysis pipeline for detecting spindles and slow oscillations
- Used K-clustering algorithm to categorize the spatial patterns of slow oscillations
- Studied the neurophysiology of sleep through the lens of multi-taper spectral analysis
- Used SVM to classify slow oscillations based on their source current densities

Research Data Analyst I, **Department of Psychological & Brain Sciences, Boston University** Apr 2020 - Aug 2021

- Built computing tools for multimodal analysis of large-scale connectivity structure of spontaneous and task active rhythmic brain activity
- Implemented and supported statistical analyses and processing pipelines in Python for behavioral, EEG and multimodal neuroimaging analysis, including MEG resting-state and volumetric data
- Organized and managed large sets of physiological, neuroimaging, clinical, and behavioral data derived from a wide variety of translational studies

Clinical Research Coordinator II, **Department of Psychiatry, Massachusetts General Hospital**
Psychiatry Neuroimaging Lab, Brigham, and Women's Hospital Jan 2019 - Mar 2020

- Developed Image processing pipelines in python and shell scripting
- Trained an encoder-decoder deep learning model for brain MRI segmentation
- Visualized and analyzed fiber track data from diffusion MR tractography
- Design and run MATLAB scripts for analysis of task-based fMRI data
- Hands on experience in image processing and analysis tools like 3D slicer, Free surfer, FSL and SPM

Research Assistant, **IT Research Computing, University of Massachusetts Boston** Jul 2016 - Aug 2017

- Developed programs for data retrieval and processing in python and UNIX shell scripting
- Handled high throughput data in Linux HPC clusters with UNIX shell scripting
- Installed and configured Linux on end-user workstations
- Developed data visualization tool for high performance computing usage using python and bash

IT Specialist, **Mphasis, Pune, India** Oct 2012 - Feb 2014

Part of HP Storage Services Management System (SSMS) Backup and Restore

- Performed client data collection, data restoration and reporting
- Identified data collection issues and monitored data collection progress
- Extracted reports from SQL server by running basic SQL queries

EDUCATION:

- MS Computer science, University of Massachusetts Boston, USA Jan 2015 - Jan 2019
- Bachelor of Electronics and Communication Engineering, Anna University, India Sep 2007 - Nov 2011