Senthil Palanivelu

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PROFILE:

- Background in computer science. Interested in programming and data science

PROFESSIONAL EXPERIENCE:

Bioinformatician I, Brigham and Women's Hospital   Sep 2022 – Dec 2024

- Led data harmonization projects to produce an analysis-ready dataset by standardizing EMG, ECG, and EEG channel configurations, units and sample rates across cohorts and delivered a reproducible HTML workflow with scripts, facilitating future audits and replication efforts.
- Contributed to an open-source C++ software package for manipulating and analyzing polysomnographic recordings, with a focus on the sleep EEG
- Validated and deployed ML predictive model for automated sleep staging and brain age prediction
- Implement best practices and methods for building efficient docker container images
- Automated the process of building and distributing Python packages across different platforms using GitHub Actions

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

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

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
- 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, processing, and visualization in python and UNIX shell scripting to monitor HPC compute usage
- Handled high throughput data in Linux HPC clusters using UNIX shell scripting

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

CERTIFICATIONS:

- Mathematics for Machine Learning and Data Science by DeepLearning.AI on Coursera.   July 2024