Joe Heffernan

RESEARCH ENGINEER II

7930 Harwood Avenue, Wauwatosa, WI 53213

414.236.0322 | jheffernan@mcw.edu | heffjos

Skills

DATA SCIENCE

- Machine learning, data wrangling, regression analysis, data quality enhancement, data visualization, classification

APPLICATIONS

- AFNI, FSL, SPM, FreeSurfer, Workbench, Psychtoolbox, E-Prime, Git, RStudio, Redcap, Excel

LANGUAGES

- R, Python, Bash, Matlab

PROJECT MANAGEMENT

- Mentorship of peers, explaining technical material to non-technical audience, strong collaborative skills leading to publications in scientific journals

Experience

Medical College of Wisconsin   *Milwaukee, WI*

RESEARCH ENGINEER II   *Feb 2016 - Present*

- Developed a semi-automated quality control, preprocessing, and first level pipeline for clinical fMRI images of patients with epilepsy to generate results for clinical reports in a timely manner. The pipeline leveraged singularity containers to run specialized software on a high performance compute cluster.
- Created an R package to track research fMRI images on Google Drive beginning from acquisition to the final stage of preprocessing.
- Learned and implemented form creation in Redcap for easier data entry and converted existing SPSS databases to csv files with R to be imported into Redcap.
- Administered lab computers running Ubuntu and troubleshoot computer issues for lab members.

University of Michigan, University of Pittsburgh   *Milwaukee, WI*

INDEPENDENT CONSULTANT   *Feb 2016 - May 2017*

- Designed and created novel fMRI paradigms using Psychtoolbox-3.
- Remotely administered storage and processing servers.

University of Michigan   *Ann Arbor, MI*

RESEARCH LAB TECH INTERMEDIATE   *Jan 2012 - Feb 2016*

- Built an automated Bash pipeline to transfer fMRI images from remote to local storage and to perform standard fMRI preprocessing techniques which prepared the images for analyses.
- Refactored an SPM first level analysis pipeline in Matlab and added more pipeline features and user-friendly error messages.
- Validated fMRI preprocessing scripts and determined the optimal preprocessing methods.
- Administered Linux servers running CentOS. I managed data directory structures, user creation, file sharing through NFS, hard disk usage, data backups, and RAID health.

Mortara Instruments   *Milwaukee, WI*

VALIDATION ENGINEER   *Summer 2009, 2010*

- Validated ECG technology to ensure products functioned correctly.

Education

Illinois Institute of Technology   *Chicago, IL*

MS, BIOMEDICAL IMAGING AND SIGNALS   *2009 - 2011*

- Tutor for undergraduates

Illinois Institute of Technology   *Chicago, IL*

BS, BIOMEDICAL ENGINEERING   *2004 - 2008*

- Research assistant
- Teacher assistant for Intro to Programming