**About us**

This is an opportunity for a postdoctoral researcher position in the Department of Neurology and Weill Institute for Neurosciences at the University of California, San Francisco. The Coma Computational Neuroscience research program is focused on advancing our understanding of the physiology of coma and neurological recovery from injury caused by trauma, cardiac arrest, or epilepsy.

1)    Computational Neuroscience: focus on electrocorticography analysis in traumatic brain injury and multimodal physiology data (waveform analysis) in critically ill patients.

Our Neurocritical Care research group employs state-of-the-art statistical and machine learning approaches to decode information from massive databases of surface and invasive brain recordings (EEG & ECoG) originating from the ICU.  Our group is pursuing innovative and rigorous scientific research involving consciousness circuits in the brain, seizure and epilepsy prediction and modeling, as well as the effects of medications on brain rhythms and their impact on functional recovery after severe injury. We are integrating this unique type of physiological information about the brain with neuroimaging and electronic health records to provide a comprehensive picture of each patient and their care. You will join a dynamic and multi-disciplinary group of physicians, neuroscientists, and data scientists developing cutting-edge technologies and applications that leverage advanced signal processing, time-series prediction modeling, and quantitative neuroimaging. Our group is experienced in using both traditional machine learning and deep learning approaches. We are a diverse team with members from various ethnic, gender, and language backgrounds who are poised to advance methods and knowledge in the neurosciences as well as promote the professional and personal development of all members of our team.

This is a two-year postdoctoral position focusing on Neuroscience and Data Science.

Time range: This position is funded for two years full-time (100% time).

Qualifications:

Required

* Ph.D. in a field related to computer science, statistics, mathematics, electrical engineering, or computational biology/neuroscience.
* Demonstrated proficiency in programming in Python and ability to create shells for automated data analysis.
* Knowledge or experience with signal processing analysis (Python or MATLAB) such as Fourier and wavelet methods using EKG, EEG, ECoG, NIRS, or other physiologic time series - for the Computational Neuroscience position.
* Knowledge or experience with relational databases (SQL, NoSQL) and electronic health records - for the Biomedical Informatics position.
* Ability to work independently and determine when assistance from the designated supervisor is needed.
* Organizational and efficiency skills, including planning and decision-making abilities to complete assigned duties promptly, attention to detail, logical thinking/analytical abilities, and problem-solving skills.
* Enthusiasm, adaptability, good communication skills, and ability to work with a diverse team.
* Ability to work and interact positively with people from diverse backgrounds.

The candidate must possess the required qualifications by the time of appointment and the candidate’s CV and cover letter must list qualifications (or if pending) upon submission.

Preferred

* Knowledge and familiarity working with Jupyter notebooks and familiarity with version control (GitHub/Git).
* Knowledge or experience with machine learning and statistical analysis.
* Knowledge or experience with deep learning frameworks, e.g., TensorFlow, Keras, or PyTorch.
* Knowledge of high-performance computing and dynamic modeling methods.
* At least six months of experience in direct data management and analysis using medical and or health-related data.

Under the guidance and supervision of the supervisor, you will:

* Perform data mining, develop algorithms, as well as analysis involving physiological and health records time-series as well as maintain the laboratory’s computational infrastructure and analysis tools.
* Develop pipelines for data cleaning and preprocessing as well as data integrity tasks with the goal of optimizing and correcting errors, inconsistencies, or missing data needed for analyses.
* Assist in acquiring and maintaining data acquisition from multiple sources including multimodal physiological time series, neuroimaging, and electronic health records.
* Organize, support, and maintain a central large research database with various data types including physiological time series, neuroimaging, and electronic health records.
* Assist with user-interface software development.
* Ensure confidentiality for sensitive documents (protected health information) as per institutional guidelines.

Desirable roles:

* Opportunity to collaborate with members of the Department of Neurology, Neurosurgery, and Radiology at UCSF as well as Computer Science and Statistics at UC Berkeley, Harvard Medical School, and Massachusetts Institute of Technology.
* Opportunity to career development and seek external funding from funding agencies for projects within our laboratory.

Well-qualified applicants should send the following to amorim@ucsf.edu:

* Cover letter (2-page maximum) indicating current and future research interests and expected availability dates;
* CV (curriculum vitae);
* A concise list of computational/programming skills, and how they were applied toward prior research questions if applicable;
* Example(s) of computer programming experience, such as a link to your public Github or MATLAB File Exchange webpage if available;
* Names and contact information for three references

Schedule:

* 8-hour shift
* Monday to Friday

Ability to commute/relocate:

* San Francisco, CA 94110: Reliably commute or planning to relocate before starting work (Required)

Work Location: In person

UC San Francisco seeks candidates whose experience, teaching, research, or community service has prepared them to contribute to our commitment to diversity and excellence. The University of California is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, age, or protected veteran status.