

BIOMEDICAL DATA SCIENCE/AI POST-DOCTORAL ASSOCIATE

The Duke University School of Nursing is accepting applications for up to two (2) motivated and talented postdoctoral associates to join a growing interdisciplinary team, led by principal investigator Dr. Xiao Hu, to develop and validate innovative computational algorithm and software tools to discover actionable information from diverse data modalities, ultimately enabling precision health. This position is guaranteed up to three (3) years with potential for further renewal.

PROGRAM HIGHLIGHTS

The analysis of high-dimensional temporal data arising from practices such as patient monitoring, health tracking, and symptom management is challenging but also rewarding. For example, great progress is being made in using patient monitor alarm data and laboratory test results in electronic health record systems to detect patterns predictive of patient deterioration. At the moment, the major application domains being pursued by the hiring team include multimodality brain monitoring of patients with acute brain injuries, integration of data from electronic health record with physiological data to develop predictive models, and modeling/analysis of invasive neurophysiological signals from patients with acute brain injury, Parkinson's disease, and epilepsy. More senior candidates would have the opportunity to generate new research project ideas under the mentorship of the PI and other clinical domain experts leveraging advanced analytics in their own research projects (e.g., intraoperative monitoring, antimicrobial stewardship decision support, and development of predictive models for neonatal patients). In summary, successful candidates with the expertise and experience listed below will collaborate closely with the corresponding domain experts to develop and validate data integration, analysis, and visualization algorithms. Types of data will include: physiological signals (ECG, EEG, ECoG, blood flow velocity, blood pressure, and intracranial pressure), time series data from wearable sensors, physician data from electronic health record systems etc. The candidates are expected to report, through oral presentation and written reports/papers, the algorithm and experimental findings. In addition, opportunities to develop research proposals under direct mentorship from the PI will be provided.

REQUIRED SKILLS & EXPERTISE

Qualified candidates need to have a PhD in biomedical engineering, biomedical informatics, applied statistics/math, or electrical/computer engineering, and a publication track record in at least one of the following areas: signal processing/time series analysis, machine learning, deep learning, mathematical modeling, system identification, optimization, digital/mobile health, and data visualization. Candidates should be proficient in at least one of the mainstream data management and analytics languages (Matlab, R, Python, and SQL) and be able to write clean and modular code. Research experience in healthcare or biomedicine is a plus.

ABOUT THE EMPLOYER

The Duke University School of Nursing or DUSON, as it's called by many, is an organization and community of scholars committed to providing the best educational environment for the development of nursing leaders. Established in 1931, we are a center of excellence that is committed to the advancement of nursing science, the promotion of clinical scholarship and the education of clinical leaders, advanced practitioners and researchers. In addition to educating the nurses of tomorrow, critically important research that is changing the future of health care is also being carried out here. Many of our faculty conduct cutting edge research and test interventions to improve the health of those with chronic illness, designing innovative models for clinical care, or pioneering qualitative and quantitative approaches to reducing health disparities. Many others are actively involved in practice in their specialty area, such as care for those with heart disease, diabetes and at-risk neonates.

APPLY

Applications will be accepted until the position is filled. To request or submit application materials, visit careers.duke.edu and reference requisition #94408.

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