Research Scientist I


Purpose
The Department of Psychiatry and Behavioral Medicine at the Medical College of Wisconsin is seeking to hire a Research Scientist to join our neuroimaging research team. The applicant will play a leadership role to develop and integrate advanced structural and functional magnetic resonance imaging processing methods for use in clinical research applications pertaining to normal aging, and neuropsychiatric disorders such as prolonged grief disorder (PGD) and late-life depression (LLD). He/she should be able to supervise and independently perform neuroimaging studies to advance the goals of the principal investigator’s National Institute of Mental Health (NIMH) and foundation funded research projects.

Potential research projects include but are not limited to analysis of longitudinal task functional Magnetic Resonance Imaging (MRI) and resting-state functional connectivity MRI datasets collected using Human Connectome Project multiband protocols, as well as novel arterial spin labeling and diffusion imaging datasets. He/she will report to the Principal Investigator, and work closely with imaging physicists, radiologists, biostatisticians and pharmacologists from the Center for Imaging Research, Neuroscience Center, and the Departments of Psychiatry, Biophysics, Radiology, and Pharmacology & Toxicology.

Primary Functions
- Play a leadership role to develop and integrate novel processing methods for use in clinical neuroimaging research applications and modify and improve existing ones.
- Develop and complete advanced computational analysis of state-of-the-art multimodal brain MRI and behavioral datasets.
- Develop and/or adapt specialized software for analysis of neuroimaging data using programming languages such as Matlab, Python etc.
- Play a leadership role in investigating the brain network systems in middle-aged and older healthy individuals and patients with neuropsychiatric diseases.
  - Provide ongoing computer programming, and systems maintenance for research performed
    - Strong computer and programming skills; specifically, proficiency with the Linux operating system, and software such as AFNI, SPM, Matlab, FSL, Freesurfer etc.,
    - Strong foundation in various statistical packages including SAS, SPSS and/or R to conduct data analysis.
  - Install/update system software; Develop and maintain custom installation scripts for Linux systems.
  - Develop and maintain custom backup software
  - Ensure accurate implementation of imaging research protocols.
  - Participate in discovery projects.
  - Coordinate research study activities; lead and manage projects.
  - Assist with collection of various imaging and behavioral data
  - Plan and perform statistical analyses using advanced techniques; determine and review statistical findings with investigators and recommend design modifications in study protocols.
  - Develop new methodologies for lab procedures.
  - Participate in meetings with the principal investigator and research staff in which validity of the data is evaluated/interpreted, methodologies are developed, and lab procedures are designed and evaluated.
  - Oversee the work of laboratory personnel including training and development as well as daily
work direction, delegation and establishing priorities.
  o Develop, implement and maintain a computerized record system for reporting results.
  o Coordinate with MCW’s Research Computing Center and Information Service departments.
  o Assist with maintaining compliance with safety and mission critical procedures.
  o Assist in the design and testing of software systems for neuroimaging research projects.
  o Monitor quality control processes to ensure integrity of research

• Train students, residents and post-doctoral fellows in specific research protocols; develop training materials.
• Maintain supplies, may negotiate with vendors, track purchase orders.
• Write scientific abstracts and manuscripts
• Assist in the timely preparation and submission of scientific reports and outcome findings, grants and manuscripts.
• Coordinate data collection, storage and database maintenance, and ensure timely data transfer to NIH and other data archives.

Knowledge – Skills – Abilities

Programming experience and experience performing neuroimaging analysis is required.

• Strong computer and programming skills; specifically, proficiency with the Linux operating system, and software such as AFNI, SPM, MATLAB, FSL, Freesurfer etc.
• Experience in machine learning and deep learning techniques, and pulse sequence programming are desirable.
• Strong foundation in various statistical packages including SAS, SPSS and/or R to conduct data analysis.
• Strong organizational and collaborative skills.
• Excellent English reading, writing, speaking and comprehension skills.
• Knowledge in preparing scientific reports, abstracts, manuscripts and grant submissions preferred.
• An aptitude in mentoring students and research assistants.
• Knowledge in research documentation and records management preferred.
• Data utilization, complex problem solving, critical thinking, resource management, and writing skills.

Specifications

Minimum Required Education: PhD in a scientific field
Minimum Required Experience: No experience required
Preferred Education: PhD
Preferred Experience: Strong programming and neuroimage analysis. Experience in machine learning and deep learning techniques, and pulse sequence programming are desirable.
Field: Computer science, Engineering, Neuroscience
Certification:

Diversity and Inclusion
The Medical College of Wisconsin defines diversity as a commitment to recognizing and appreciating the variety of individual differences in an environment that promotes and celebrates individual and collective achievement. The diversity of MCW continues to be an important source of innovative ideas and creative accomplishments.