

Research Position in Brain MRI at the Center for Magnetic Resonance Research (CMRR)



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The Center for Magnetic Resonance Research (CMRR), University of Minnesota, seeks one or more Postdoctoral Fellows for conducting work focused on the development of advanced functional, structural, and diffusion weighted (dMRI) neuroimaging to create the next generation human brain imaging data that can help us advance our understanding of human brain function.

The planned work supported by a BRAIN Initiative grant will be conducted primarily at the ultrahigh magnetic fields of 7 Tesla and the world's only 10.5 Tesla human system, which currently represents the highest field available for human imaging. Both systems are equipped or soon to be equipped with advanced and unique capabilities (e.g. 16 to 32 channel parallel transmit (pTx) and 64 to 128 channel receive, unique RF coils, and high performance gradient coils). The proposed work will involve developing cutting edge high-resolution whole brain structural, diffusion and functional MRI acquisition methods and image reconstruction approaches that exploit the unique hardware capabilities present in the CMRR. Within this general goal, several different areas of focus are possible and include: RF pulse design with pTx, pulse sequence development for highly accelerated functional and/or dMRI and/or anatomical imaging, image reconstruction approaches. The ideal candidate should have a strong background in these areas.

These Postdoctoral Fellow will be jointly mentored by Dr. Kamil Ugurbil (Director of CMRR) and Dr. Xiaoping Wu and will have the opportunity to collaborate with a diverse team of researchers with complementary expertise in MR physics, MR engineering, image reconstruction, neuroimaging, and neuroscience.

Responsibilities:

- Develop cutting-edge acquisition methods and collect HCP-style multimodal brain images (structural, diffusion and functional MRI), focusing on one or more aspects of the problem such as RF pulse design, k-space encoding with new sequences, image reconstruction etc. .
- Analyze imaging data using existing data processing pipelines or developing new methods.
- Make observations, interpret findings, and present results internally and externally.
- Prepare conference abstracts, write journal papers, and assist in grant applications.

Requirements:

- PhD in Computer Science, Engineering, Physics, Mathematics, Neuroscience, or equivalent field.

Preferred Qualifications:

- Proven experience in MRI data acquisition and data analysis.
- Track record of scientific publications (including peer-reviewed journal papers).
- Experience using common software packages (such as FSL) for MRI data processing and analysis.
- Working knowledge of Matlab, Python, or similar scientific computing environment.

For more details on the job and on how to apply, please visit the following link (Job ID #320555):

https://hr.myu.umn.edu/psc/hrprd/EMPLOYEE/HRMS/c/HRS_HRAM_EMP_FL.HRS_CG_SEARCH_FL.GBL?Page=HRS_CAREERS_FL&Action=U&TargetFrameName=

Questions regarding the positions can be directed to:

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