Post-doc position in Image-Based Inverse Problems in Biomedical Engineering

Applications are invited for postdoctoral position(s) to work on National Science Foundation (NSF) sponsored projects. The position is fully funded for 1 year term currently. It may be extended based on performance and availability of funds.

We are working on methods to generate high-fidelity, high-resolution, blood flow and relative hemodynamic pressure maps from in-vivo dynamic imaging modalities such as 4D-Flow MRI, Dynamic Doppler, and Dynamic CT Angiography. Techniques we propose to use include optimization, pseudo-spectral methods, data-assimilation using variational methods and Kalman Filtering, Physics-informed neural nets, and data-driven dynamic modeling (DMD).

The candidate must be proficient in programming with Python, and deep learning libraries and frameworks such as PyTorch, TensorFlow, Keras etc. Background knowledge in the physics of imaging modalities such as MRI, CT, Doppler, PET etc is a plus. Having experience in grant proposal writing is a plus. Duties include

1. Formulate novel data assimilation methods, write open-source code, write scholarly publications, technical reports, year end reports.
2. Assist in developing new relevant research areas, generating preliminary results for grant proposals, and writing grant proposals to federal agencies including NIH, NSF, DOD, FDA etc.
3. Mentor graduate and undergraduate students.
4. Work effectively in a multi-disciplinary team environment.
5. Perform other related duties as required or directed. The omission of specific duties does not preclude the supervisor from assigning duties that are logically related to the position.

Qualified candidates are encouraged to send an application package consisting of cover letter, CV, and a summary of research specialization. Candidates will be asked to provide names and contact of three references who will be contacted by the hiring official. Please send your applications to dsouza@uwm.edu.