Musculoskeletal Digital Innovation & Informatics (MDI²) Program

Department of Orthopedics & Sports Medicine
Boston Children's Hospital, Harvard Medical School

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Postdoctoral Fellowship in Medical Image Processing and Computational Modeling in Spinal Deformities

The Musculoskeletal Digital Innovation and Informatics (MDI²) Program in the Department of Orthopedics and Sports Medicine at Boston Children's Hospital and Harvard Medical School has an immediate opening for an outstanding, highly motivated Postdoctoral Research fellow to work on several image processing and modeling projects to assist with clinical decision making in patients with spinal deformities. The Postdoctoral Research Fellow will work with a multidisciplinary team of biomedical engineers, orthopedic surgeons, and computer and data scientists to develop algorithms to analyze medical images (e.g., MRI and CT). This fellowship opportunity is primarily focused on translational research with immediate impact on clinical care of patients with a range of spinal conditions, through publication of novel findings and development of computational tools used by clinicians. The postdoctoral fellow will have joint appointments at Boston Children's Hospital and Harvard Medical School and will benefit from access to the largest medical R&D community in the world (Longwood / Boston), along with numerous career development resources offered by Harvard University and its affiliated hospitals and research centers. The successful candidate will have:

Required Skill and Experiences:

- PhD or MD/PhD in STEM (CS, Mech, EE, Biomed) or related fields with strong background in Analytical Geometry, Medical Image Processing and Computer Modeling.
- Expertise with computer simulations (i.e., 3D morphological and alignment analyses)
- Expertise with Python
- Experience with Medical Images
- Excellent communication skills in English.

Desired Skills and Experiences:

- Experience with Generative AI and Large Vision Models.
- Experience with finite element analysis.
- Basic knowledge of human spine anatomy, biomechanics and pathology

This is a full-time 3-year position, renewed annually based on the applicant's performance. Interested applicants, please send your CV along with a copy of a technical paper, a "paragraph" including statement of goals and contact information for three references to MDI2.Program@childrens.harvard.edu