Postdoctoral Fellow in Orthopaedics Surgical Simulations and Applied Computational Mechanics, Biomedical Engineering Department at Northwestern University, Chicago, Illinois

Position: Postdoctoral Fellow
Organization: Northwestern University
Location: Chicago, Illinois
Deadline: ASAP

Description:

Postdoctoral Fellowship opportunity on computational and mathematical modeling of human joints is available. Our current focus is on the development of a three-dimensional multi-scale finite element model of the human knee. Briefly, we are planning to compute the stress/strain fields in the joint soft tissues before and after common orthopaedic surgeries using three-dimensional hyper-elastic formulation. Material and geometric uncertainty analyses will be conducted. This project is funded by an NSF grant.

The successful candidate will work with the an interdisciplinary team consisting of Yasin Dhaher, Ph.D., The Rehabilitation Institute of Chicago and the Biomedical Engineering Department at Northwestern University, Dan Negrut, Ph.D. and Darryl Thelen, Ph.D., the Department of Mechanical Engineering at University of Wisconsin-Madison and Kurt Spindler, M.D. Director, Vanderbilt Sports Medicine Professor of Orthopaedic Surgery and Rehabilitation at Vanderbilt University. There will also be opportunities to work with the solid mechanics research groups at the Mechanical Engineering Department at Northwestern University. **The position is available immediately**. Interested candidates should send a cover letter, curriculum vitae, and contact information for three references to Dr. Yasin Y. Dhaher, Director of the Neuro-Mechanics Laboratory.

Qualifications:

1. A professional level of knowledge in computational engineering generally acquired through the completion of a Ph.D. Degree in Engineering Mechanics, Mechanical Engineering or Civil Engineering.
2. Require knowledge in nonlinear elasticity.
3. Required working knowledge in Finite Element Analysis of Nonlinear Structures.
4. Required working knowledge and experience in Abaqus (standard, explicit, and implicit), HyperMesh and familiarity with SolidWorks is helpful.
5. Required knowledge in Matlab, C++, and Python Language.
6. Familiarity with Genetic Algorithms and Bayesian Statistics.
7. Analytical abilities necessary to understand complex problems and to resolve these problems through the application of appropriate technologies/software.

Contact:

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