



FACULTY MENTOR

Bae, Won

PROJECT TITLE

Deep Learning in Medical Imaging: Musculoskeletal Applications

PROJECT DESCRIPTION

This project will engage students in development of deep learning techniques for analysis of medical images. They will primarily deal with 3D magnetic resonance images of musculoskeletal organs in human body such as the knee and the spine, and the goals of image analysis will include anatomic landmark recognition, segmentation of different tissues, and image registration, and image transformation. Achievement of these goals will enable personalized and precise evaluation of patient imaging data. Specific tasks will include: setup hardware and software for deep learning processing, research existing programs and tools used for deep learning-based image processing, and adaptation of existing tool and/or new development of deep learning techniques for musculoskeletal applications. The faculty supervisor is an imaging researcher who can provide hands-on guidance on the direction of the project, but has relatively little experience with deep learning.

INTERNS NEEDED

1 BS Student, 1 MS Student

PREREQUISITES

Proficiency in Matlab and Python, and experience with deep learning techniques. ECE 15, 141A, 143, 175AB preferred but not required.