Title: Image Registration

Abstract: In medical image analysis, data captured for the same purpose may come from different sensors. For instance, Computed Tomography (CT) is the standard imaging modality for patient dose calculation for radiation therapy. Magnetic Resonance Imaging (MRI) is used along with CT to identify brain structures due to its superior soft tissue contrast. Registration of MR and CT is necessary for accurate delineation of the tumor and other structures and is critical in radiotherapy planning. Image Registration transforms data, which is taken from different sources or at different time frames, to the same coordinate system. Numerous image registration techniques exist in the literature; however, none provide a viable solution. Therefore, this study will explore the prospects of using artificial intelligence for a comprehensive image registration solution.

Data Availability: Data will be shared with the students who wish to conduct research in this domain.