Assessment of Squat test bench for Dynamic CT scans

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Computed Tomography (CT) is widely used in medical imaging as a tool to diagnose and treat health issues. Over the years, the images quality increased so greatly that CT scanners provides 4D images (i.e., three-dimensional geometry in time). To clinicians and researchers creates major opportunities to investigate the body response during a specific task, such as squatting. To do this, a test bench is need to be designed and deployed in the machine to acquire the motion. Moreover, the point of interest must be inside the acquisition volume of the machine to fully analyse and capture.

This project focus on the assessment of a new version of a squat test bench across multiple subjects and analyse the implication of the anthropomorphic measurements in the performance of the bench. The experimental study will involve a motion capture, and the analysis of kinematic data acquired. To do this, you will dig into data processing of kinematic data, and the usage of motion capture systems as VICON. According to these results, you will have the chance to enhance the current design.

Requirements: Self-motivated, disciplined, basic knowledge on data processing using Matlab or Python, designing skills.

Please contact us for more information before selecting the project.