

ABSTRACT

The author proposes an estimation of poses to measure the degree of shoulder inclination and knee distance for diagnosing anomalies in the body based on Computer Vision and Deep Learning technologies. The proposed system utilizes 2D pose estimation using the BlazePose model optimized with *OpenVINO* for *inference*. Atan2 and mean square error, as well as linear regression, are employed as the theoretical foundations for measuring shoulder inclination angles and Dist (distance) using mean square error as the theoretical basis for measuring the distance between knees.

Anthropometric detection, such as measuring shoulder inclination and knee distance, which can determine abnormalities in leg shape, is necessary for medical and military recruitment purposes. Anthropometric data can also be used for various other purposes, such as designing workstations, workplace facilities, and products to ensure proper sizing and compliance with human body dimensions for those who will be using them. Currently, this detection is performed manually using tools like markers, prompting the author to develop an automatic system. The manual detection has yielded accurate data.

Keywords: Computer Vision, Deep Learning, Anthropometry, Human Pose Estimation, Pose Estimation, BlazePose, Shoulder Inclination, Knee Distance.