

## 3D Biomechanics Analysis of Tennis Elbow Factors & Injury Prevention Using Computer Vision and AI

**Authors :** Aaron Yan

**Abstract :** Tennis elbow has been a leading injury and problem among amateur and even professional players. Many factors contribute to tennis elbow. In this research, we apply state of the art sensor-less computer vision and AI technology to study the biomechanics of a player's tennis movements during training and competition as they relate to the causes of tennis elbow. We provide a framework for the analysis of key biomechanical parameters and their correlations with specific tennis stroke and movements that can lead to tennis elbow or elbow injury. We also devise a method for using AI to automatically detect player's forms that can lead to tennis elbow development for on-court injury prevention.

**Keywords :** Tennis Elbow, Computer Vision, AI, 3DAT

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