

عنوان مقاله:

Sensitivity Analysis of Muscle Activation-Joint Position Using Computer Simulation of a Model For The Thumb and Index Finger

محل انتشار:

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خلاصه مقاله:

Computer simulation of a three dimensional model of the thumb and index finger was used to study the effect of each muscle on hand posture and select specific muscles to get a desired posture of the hand to assist the implementation of FNS systems. In the Model, the hand is being treated as a multi-body system including rigid segments connected by joints. Each joint is subjected to a total moment that is decomposed into muscle active and joint passive components. The forward approach, in which the equilibrium equations are solved for joint positions as a function of muscle moments is used. The results show, at the base joint of the index finger, flexion effect of the extrinsic flexor muscles is muscle of the extensor system is individually more powerful than the extrinsic flexor muscles. At the more distal joints, intrinsic muscles act as feble extensors. At the base joint of the thumb, extensor muscles are much more powerful than the flexor and flexor effect of adductor muscles. Also, abductor more distal joints are as strong as the extensor muscles

کلمات کلیدی:

Modeling and simulation, Hand model; sensitivity analysis

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