

1064-92-346

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*Results from a Groebner Basis Study in Gait Analysis.* Preliminary report.

In the gait cycle, two important indicators: wrist and foot placement, when isolated, provide key information about future behaviors in the gait cycle. To determine the placement of the wrist and foot in the gait cycle, an inverse kinematic model was derived for the upper and lower extremities in the sagittal plane using a Groebner basis. This model was used to predict wrist and foot placement at one hundred points of the gait cycle for twenty human subjects. The results of the study will be presented as well as future projects in gait analysis. (Received September 14, 2010)