Abstract:

A New Likelihood Function For Inferring Human Pose

This paper presents a new statistical methodology for inferring and tracking 3D pose of articulated bodies using a depth sensor. The body is modelled as a Bayesian network, where each node represents the probability density function of the joint parameters. A new Likelihood function for characterizing joint states from limb observations is presented and approximated using Expectation Propagation technique. Priors are obtained as a combination of tracking and 3D image processing at each frame. Variational Message Passing technique is used for inferring the posteriors of each node in the Bayesian graph.

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