The little difference: Fourier based synthesis of genderspecific biological motion

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A framework is outlined that can be employed to obtain gender and other characteristics of the agent from human motion patterns and subsequently use this information to synthesize motion with particular, well-defined biological and psychological attributes. The proposed model is based on the statistics of a data base of motion capture data. Based on linearization of the motion data, a motion space is defined which is spanned by the first few principal components obtained from the data base of input walkers. Using biological and psychological traits attributed to the input walkers, linear discriminant functions are computed which define vectors in the motion space that generalize the respective trait. These vectors are in turn used to generate walking patterns with the respective properties.