UW Center for Pattern Analysis and Machine Intelligence

Graduate Seminar Series

Pattern Recognition Algorithms for Gait Analysis with Application to Affective Computing

Speaker: Michelle Karg

Date: March 14, 2012

Time: 4 pm – 4:30 pm

Place: E5 (5128) Refreshments will be served

Abstract :

Affective computing increasingly gains interest in human-robot interaction. Within this research area, a large part of the studies concentrates on facial expressions and variations in speech as modalities. These modalities are especially suited during an interaction, but they may not be sufficient in other situations such as recognition at distance. Reviewing psychological studies, shows that humans express also emotions in the way they walk. Motivated thereof, the motion gait is studied for recognizing and expressing emotions. Gait is highly individual and affected by many factors such as physique, age, gender, and emotions. Furthermore, recorded gait databases are characterized by highly dimensional, temporally dependent, highly variable, and nonlinear data vectors. Therefore, different feature extraction techniques and static as well as dynamic classification methods are compared for the recognition of emotions in gait patterns. Furthermore, two emotion models are compared, and inter-individual versus person-dependent recognition, and emotion recognition versus gender and identity recognition. Finally, expressive gait patterns for robots are developed and evaluated for a hexapod.

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