Chaos Theory Approach to Human Activity Recognition

Pérez-Xochicale Miguel Angel

Research Poster Conference 2015
Deadline: 20th March, 2015

Press Release

The use of concepts from Chaos Theory to Human Activity Recognition (HAR) is a very innovative approach to tackle problems in different domains: human behavior modeling, human-robot interaction, eHealth to mention but a few. This research will therefore extend the field of HAR in three significant ways. First, by applying concepts from Chaos Theory (Takens' embedding theorem, Lyapunov exponent, Poincar map) the research will create novel analysis and interpretation of the data. Second, by focussing on the complex human activities involved in dancing, cycling or juggling the research will address challenges in time-series analysis which are beyond comtemporary research. Third, by classifying data from the Chaos Theory analysis the investigation will produce realistic HAR.

This research is funded by the Mexican National Council for Science and Technology (CONACyT) and it is developed in the School of Eletronic, Eletric and Computer Engineering at the University of Birmingham.

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