عنوان مقاله:

Social Groups Detection in Crowd by Using Automatic Fuzzy Clustering with PSO

نویسندگان:

Ali Akbari - *Department of Electrical and Computer Engineering., University of Birjand, Birjand, Iran*

Hassan Farsi - *Department of Electrical and Computer Engineering., University of Birjand, Birjand, Iran*

Sajad Mohamadzadeh - *Technical faculty of Ferdows, University of Birjand, Birjand, Iran*

خلاصه مقاله:

Detecting social groups is one of the most important and complex problems which has been concerned recently. This process and relation between members in the groups are necessary for human-like robots shortly. Moving in a group means to be a subsystem in the group. In other words, a group containing two or more persons can be considered to be in the same direction of movement with the same speed of movement. All datasets contain some information about trajectories and labels of the members. The aim is to detect social groups containing two or more persons or detecting the individual motion of a person. For detecting social groups in the proposed method, automatic fuzzy clustering with Particle Swarm Optimization (PSO) is used. The automatic fuzzy clustering with the PSO introduced in the proposed method does not need to know the number of groups. At first, the locations of all people in frequent frames are detected and the average of locations is given to automatic fuzzy clustering with the PSO. The proposed method provides reliable results in valid datasets. The proposed method is compared with a method that provides better results while needs training data for the training step, but the proposed method does not require training at all. This characteristic of the proposed method increases the ability of its implementation for robots. The indexing results show that the proposed method can automatically find social groups without accessing the number of groups and requiring training data at all.

کلمات کلیدی:

Author Guide; Article; Camera-Ready Format; Paper Specifications; Paper Submission

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/1142420