

Title: Crowd Behaviour analysis and Simulation

Pedestrian tracking and simulation have been emerging as an important research with wide applications. It is mainly used for surveillance and efficient design of buildings, subway stations, airports, theme parks, etc. Another area where pedestrian simulation is essential is computer games and movie industry. Games like GTA, Cities in Motion etc and movies like Lord of the Rings, Avatar, etc require advance simulation of group of humans walking or performing actions observed either in close or panoramic view. In this research project we will focus on simulating humans moving in groups taking into consideration information from the environment, the group dynamics and the crowd psychology.

In order to obtain realistic simulations efficient models should be developed based on actual visual examples. Data captured from surveillance cameras will be utilized to test and validate the simulation models. The aim of the project, therefore, is to develop efficient and accurate group human motion simulation engines combining information about the environment and the dynamics in-between the group members. To achieve this, novel models for group formation and crowd behaviour based on the environment, time, the individuals' goals and groups' internal dynamics will be designed and implemented.

Desirable skills:

C/C++ programming skills, AI and game engines

Technical supervisors:

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