TU Clausthal

Bachelor-, Master- und Doktorandenseminar
des Instituts für Informatik

Dynamic Path Planning and Movement Control in Pedestrian Simulation

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The analysis of pedestrian behavior is helpful for numerous important purposes such as to ensure their safety in large events, to control traffic or for urban planning. Realistically simulating pedestrian behavior is a challenging problem, due to the complexity of individual pedestrian behavior as well as the complexity of interactions of pedestrians with each other and with the environment. Therefore, this thesis develops a model to plan shortest paths for pedestrians and also controls their motion based on their individual generic or contextspecific preferences and goals, in pedestrian simulation. The proposed model is divided into three sub-modules: path planning, movement control and integration of path planning and movement control. Hence, a path planning algorithm is developed to find the shortest path to a given target point or area, a force model is implemented based on the social force model of Dirk Helbing to control the movement of pedestrian and an integrated control architecture is proposed to integrate the path planning and movement control behaviors of pedestrians in a desirable way. This thesis also presents the proofs of the completeness and optimality of the proposed path finding algorithm and the capability of the social force model to control the movement of pedestrians.

The presentation slides will be divided into the following sections:
1. Introduction to pedestrian simulation and its importance
2. Motivation
3. Research gap
4. Research question
5. Proposed solution to fulfill the research gap
6. Evaluation goals, methodology and results
7. Conclusion

Dienstag, den 14.02.2017, 16:30 Uhr im Besprechungsraum 106, IfI, Julius-Albert-Straße 4

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