

openSteer – Implementation of individual pedestrian behaviours for a pedestrian simulation

Pedestrian simulation copes with modelling and simulation of pedestrian dynamics. It is used for

- calculation of evacuation times,
- identification of possible conflict points, i.e. bottlenecks in buildings and surroundings,
- determination of optimal evacuation routes etc.

One aspect of pedestrian simulation is modelling pedestrians' individual behaviour. There exist different approaches to take these behaviours into account, e.g. force models, which assume that each pedestrian is influenced by different forces and solve these force equations by taking into account each pedestrian's position. On the other hand, there are agent-based models, which assign "intelligence" to each pedestrian and map autonomous behaviour by defining different strategies to each individual.

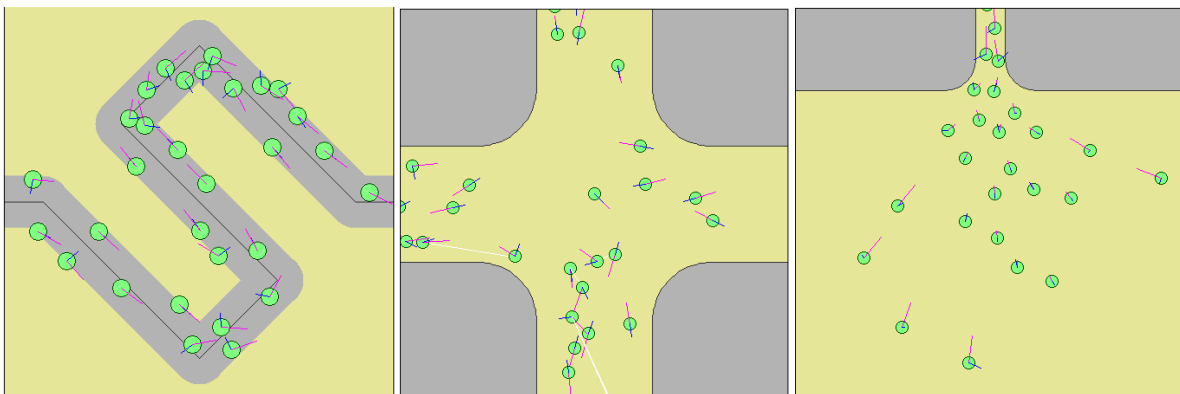
In this software lab project we want to model the latter approach. There exists a library openSteer [1] which forms the kernel for the model.

The task is to

- Get familiar with the library and the usage of it
- Develop own characters using this library
- Validate the developed characters by comparing the results with experimental data
- Run-time comparison of the developed tool with other models existing at our chair
- Integration of the developed characters into an existing pedestrian simulation

As the library is written in C++, the programming language of this project will be C++ as well.

The software lab is conducted in collaboration with Siemens and there will be final presentation at Siemens.



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References

[1] www.opensteer.com