



## Kolloquium zur Bachelorarbeit

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### „Improving Scalability of the Social Force Model“

Individuals and groups are simulated in pedestrian simulations to ascertain their behavior under different circumstances, where analyzing their behavior is valuable for several reasons, like securing crowds in large events, picking the safest pedestrian path, sufficiently regulating pedestrians in public transport. Due to the sophistication of pedestrian behavior patterns and their reactions triggered by the surrounding environment, simulating pedestrian motion is complicated and mostly has limitations.

The motive of this research is to develop an optimized model of the social forces, which affect pedestrian's motion, capable of handling simulation agents efficiently.

In this thesis an integration of the data structure KD-Tree with the social force model, where the KD-Tree includes a nearest neighbor search algorithm, is implemented to optimize the performance and investigate the scalability of the social forces model. The proposed improved model is implemented using an objectoriented programming language. The experimental results demonstrate the effectiveness and efficiency of the presented approach, which provides improved performance for crowd simulation.

Mittwoch, 15.06.2022, 09:00 Uhr

Videokonferenz: BBB <https://webconf.tu-clausthal.de/b/jor-a6p-eeen>