

Proposal for exercise 6 from group B
Crowd Simulation with Generative Adversarial Networks

Tasks addressed: 5
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Task 1, Collecting trajectory data 20%

We setup a Vadere scenario from which we produce trajectory data. The data has to be collected and preprocessed to be ready to use it for the GANs.

Task 2, Research on GAN 10%

We have to do research on suitable architectures of GANs for crowd simulation. Work that goes in the direction of “Data-Driven Crowd Simulation with Generative Adversarial Networks” [Amirian et. al 2019] (<https://arxiv.org/pdf/1905.09661.pdf>) have to be investigated to find reasonable architectures. In the end two architectures should be chosen.

Task 3, Setup GANs 30%

We will setup two architectures of GANs.

Task 4, Tuning the GANs 20%

The GANs need to be trained and the hyperparameters need to be set properly such that the model produces good results.

Task 5, Testing 20%

The GANs have to be tested if they produce good results individually. They will be compared to each other based on different aspects e.g. time of ”convergence”, quality of the generated trajectories and hence the crowd simulation, etc.

At this point in time we cannot be sure how many time we will need for each of the tasks and which kind of challenges we might encounter along the way, hence the percentages are estimated values how much time we want to invest.