Hybrid Planning and Learning for Multi-Pedestrian Intention-Aware Navigation In Interactive POMDPs

The aim of this Master Thesis is to investigate the potential of interactive POMDP planning online with integrated learning of intentional models of multiple pedestrians for collision-free navigation of autonomous cars. Special focus is on the combined use of I-POMDP planning such as I-POMDP-lite and deep learning of adversarial intentional models such as socially aware generative adversarial imitation learning for this purpose.

The comparative experimental evaluation shall focus on given set of critical traffic scenarios simulated in OpenDS with pedestrian agents and car agent modelled in AJAN.

Requirements:

- Proficiency in programming (e.g. Java, Python, DL frameworks such as TensorFlow)
- Basic knowledge on AI and automated planning, ML
- Including deep learning

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