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INTERACT - Modeling and simulation of mixed traffic in shared space

Scientific Responsible
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A number of shared space road settings have already been implemented around the world without prior evaluations. Systematic evidence of how the lack of control regulations and the induced self-organization of road users may affect network efficiency, safety and environmental impacts is still missing. The aim of the project is twofold: first, to develop and evaluate models that describe the decision dynamics at the emergence of vehicles with VRUs interactions, including pedestrians and bicycles, in shared road segments. Second, to use the developed models to assess the impact of shared space mixed traffic to large scale network traffic efficiency. For this purpose, we propose a context aware Reinforcement Learning (RL) mechanism which is based on a deep learning model to predict short term dynamics of users' interactions that are further introduced in the RL environment to propose control actions. The proposed framework will be used to simulate complex traffic scenes, including shared space traffic dynamics, as well as for autonomous driving and assess the performance of shared space traffic environments.