Abstract:
In current driving simulation research, interaction between human drivers and the more or less smart programmed agents (bots) for surrounding traffic or vulnerable road users (VRU) under specific experimental conditions is the common approach [1], [2], [3]. But interaction between humans, especially in short-timed and complex situations like urban traffic, is a broad facetted, multi-directional and above all vital construct [4], [5]. Concerning this interaction the programmable traffic participants may run into constraints. This paper presents a method where the narrow spectrum of human-bot interaction is broken up. The apparatus consists of a multiparty simulator where a vehicle driver in a driving simulator and a pedestrian in a second simulator interact within the same simulated environment and encounter three types of crossing situations: free lane, occlusion and zebra crossing. Recorded data, (i.e. velocity) was analysed by means of a time-series analysis (crosscorrelation). This approach and the results shall foster the aspect of a more human-like behavior respectively human-human-interaction in a synthetic setting like driving simulation. Results show differences in the drivers' yielding behavior depending on whether the driver approaches a bot or a human pedestrian. Significant correlation between route design parameters and cross-correlational factors were also found.