

A Simulation Tool for Projection Mapping Based on Mapbox and Unity

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Abstract : A simulation tool has been proposed for big-scale projection mapping events. The tool has four main functions based on Mapbox and Unity utilities. The first function is building a 3D model of real cities by MapBox. The second function is a movie projection to some buildings in real cities by Unity. The third function is a movie sending function from a PC to a virtual projector. The fourth function is mapping movies with fitting buildings. The simulation tool was adapted to a real projection mapping event that was held in 2019. The event has been finished. The event had a serious problem in the movie projection to the target building. The extra tents were set in front of the target building. The tents became the obstacles to the movie projection. The simulation tool can be reappeared the problems of the event. Therefore, if the simulation tool was developed before the 2019 projection mapping event, the problem of the tents' obstacles could be avoided with the simulation tool. In addition, we confirmed that the simulation tool is useful to make a plan of future projection mapping events in order to avoid obstacles of various extra equipment such as utility poles, planting trees, monument towers.

Keywords : projection mapping, projector position, real 3D map, avoiding obstacles

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