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Title: Human Walking Behaviour Based on Different Layout Design Using Computer Animation

Human has an ability to decide their own movement or walking without relying on other people. However, different types of human will have different types of walking behaviour for example, an adult, children, elderly and disabled people. The walking behaviour is referred to how people performed their walking related to the time taken for moving from one places to another, deciding the walking direction, avoiding collision from each other and others behaviours that can be arise during the walking period. There are a lot of factors that can affect the human behaviour towards walking and the walking behaviours become important especially at the crowded area.

The objective of this research is to study the human walking behaviour for elderly and disabled people. This study is different with other studies because we are focusing on how the different layout design of facilities can influence the human walking behaviour. This study starts with observing the human walking behaviour in crowded area such as bus station, shopping mall and walking pedestrian walkway. Observation process will be taken into two periods of time which is the peak-time and off-peak time period. This is to compare the human walking behaviour when numbers of human are low or high in one period of time. Based on the observation data, mathematical model and prediction model of the human walking behaviour will be developed.

The model then applied to develop the human walking behaviour algorithm using the computer animation software. In the software, the humans will interpreted as the 3D object similar to autonomous actor in virtual world where it can perform the walking based on different categories such as elderly and disabled people. The simulation also can predict human walking or movement when different designs are applied. The study is expected to come out with a simulator where it can be use to show suitable layout design for human and to predict human movement during riot situation such as fired hazards, earthquakes, accidents and other emergencies.