Analytical Study for Crowd Control in Hajj & Umrah: Interaction Design Approach

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Abstract

Real-time crowd control has become an important research topic due to the recent advancement in consoling game quality and hardware processing capability (Joseph, Et al., 2012) as a part of the developing activities related to entertainment of different user categories with range of different interests. That responsibilities emerged in a mass gathering are often non-deliberative, letting unpredictable chances for crowd disasters as a result of the act of mass impulse. Computer vision studies related to crowd are observed to resonate with the understanding of the emergent behavior in physics (complex computer systems related to develop computer capabilities of capturing and recognizing number of variables) (Ven, Et al., 2016). However, crowd control from the aspect of interaction design has not been fully explored. Therefore, this paper provides an analytical study for crowds' behavior in Hajj & Umrah as an extreme case, with an overview of the key procedures of crowd control from the perspectives of interaction design, regarding the huge range of different attributes of crowd such as decentralized, collective motion, emergent behavior. Focusing on the main rituals and needs in both Hajj & Umrah that are related to passive interactions between the crowd and the organized context, such as congestion avoidance or providing medical services. Listing in the end the different disciplines needed to work on finding the proper solution to control this crowd, and so the main points that design team has to regard while working to ensure the highest performance of safety and user satisfaction and leave no chance for mistakes, which could be fatal at some points.

Keywords

Crowd, Crowd Control (CC), Interactive Design, Wearable Technology,
Hajj & Umrah.

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