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i - Ja M C S I I X  
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INTERNATIONAL JASIN  
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## 2023

INTERNATIONAL JASIN MULTIMEDIA & COMPUTER SCIENCE  
INVENTION AND INNOVATION EXHIBITION (I-JaMCSIIIX) 2023

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# IMFLOODVR : An Immersive Virtual Reality Serious Game For Flood Risk Mitigation Awareness

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**Abstract**—This project aims to design an immersive virtual reality game focusing on flood risk mitigation awareness. The primary objective is to enhance flood preparedness and minimize consequences in Malaysia. Climate change is currently increasing flood risk significantly. However, disaster readiness and knowledge among Malaysians are still at a low level, which leads to a lack of preparedness to deal with floods. This project aims to instil proactive mindsets and provide crucial pre, during, and post-flood risk management skills. The chosen methodology, the Game Development Life Cycle, drives a comprehensive and iterative game creation process. This methodology ensures the seamless integration of flood risk training components, enabling players to navigate through various stages of a flood event. To assess the game's effectiveness and user satisfaction, the Game Experience Questionnaire was employed. Preliminary results indicate positive feedback from testers, validating the potential impact of the game. The immersion score averaged 3.483, indicating a high level of immersion experienced by the testers. However, certain limitations include reports of motion sickness among users. Ultimately, this project holds the potential to empower Malaysian by fostering flood risk awareness and proactive risk management behaviours.

**Keywords**—*Virtual Reality, immersive, GEQ, GDLC, Flood Disaster, Serious Game*



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