

# **Real-Time Recommendations for Traffic Control in an Intelligent Transportation System during an Emergency Evacuation**

## **Abstract**

Computer and communication technologies (ICT) have been incorporated in the NC transportation infrastructure to build intelligent transportation systems (ITSs), which provide us opportunities to improve the effectiveness and efficiency of emergency response. As part of natural disaster preparation and response, evacuations often occur before or after natural disasters such as hurricanes and earthquakes. Recent hurricanes such as Irma (2017) and Florence (2018) caused mass evacuations and brought the public and research communities' attentions to many issues in evacuation plans implemented. It is obvious that effective and proper traffic control is crucial during a mass evacuation. During natural disasters, ITSs can play an important role in mass emergency evacuations. In this project, we propose to develop and integrate ecological models for human evacuation behavior prediction and a real-time traffic control recommendation system to support disaster evacuations in intelligent transportation infrastructure. Optimization, simulation and machine learning approaches will be used to develop the proposed system.

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