

Active Shooter Tracking and Evacuation Routing for Survival (ASTERS)

Award # 1932505, 1932033
Start Date - October 1, 2019

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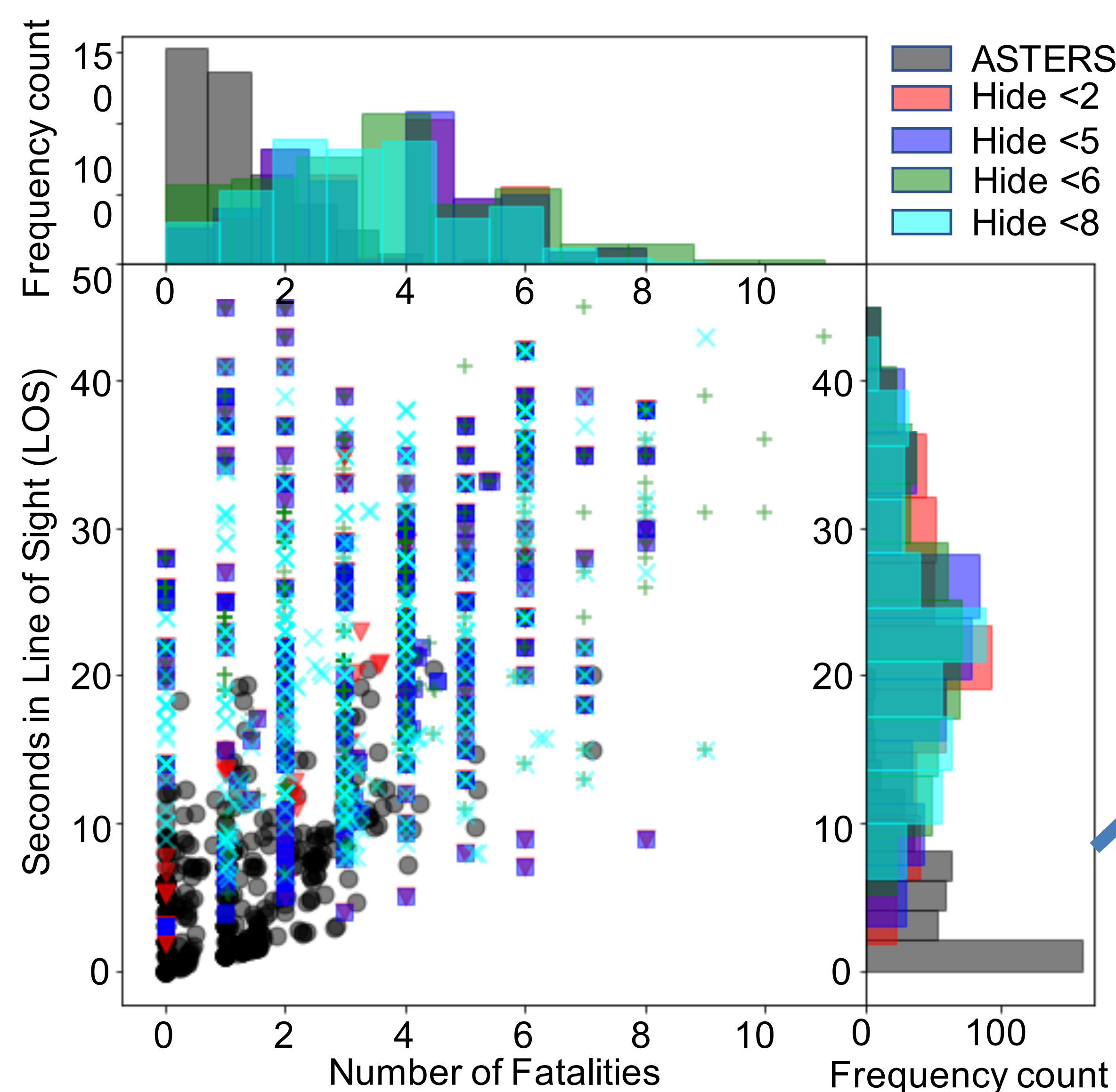
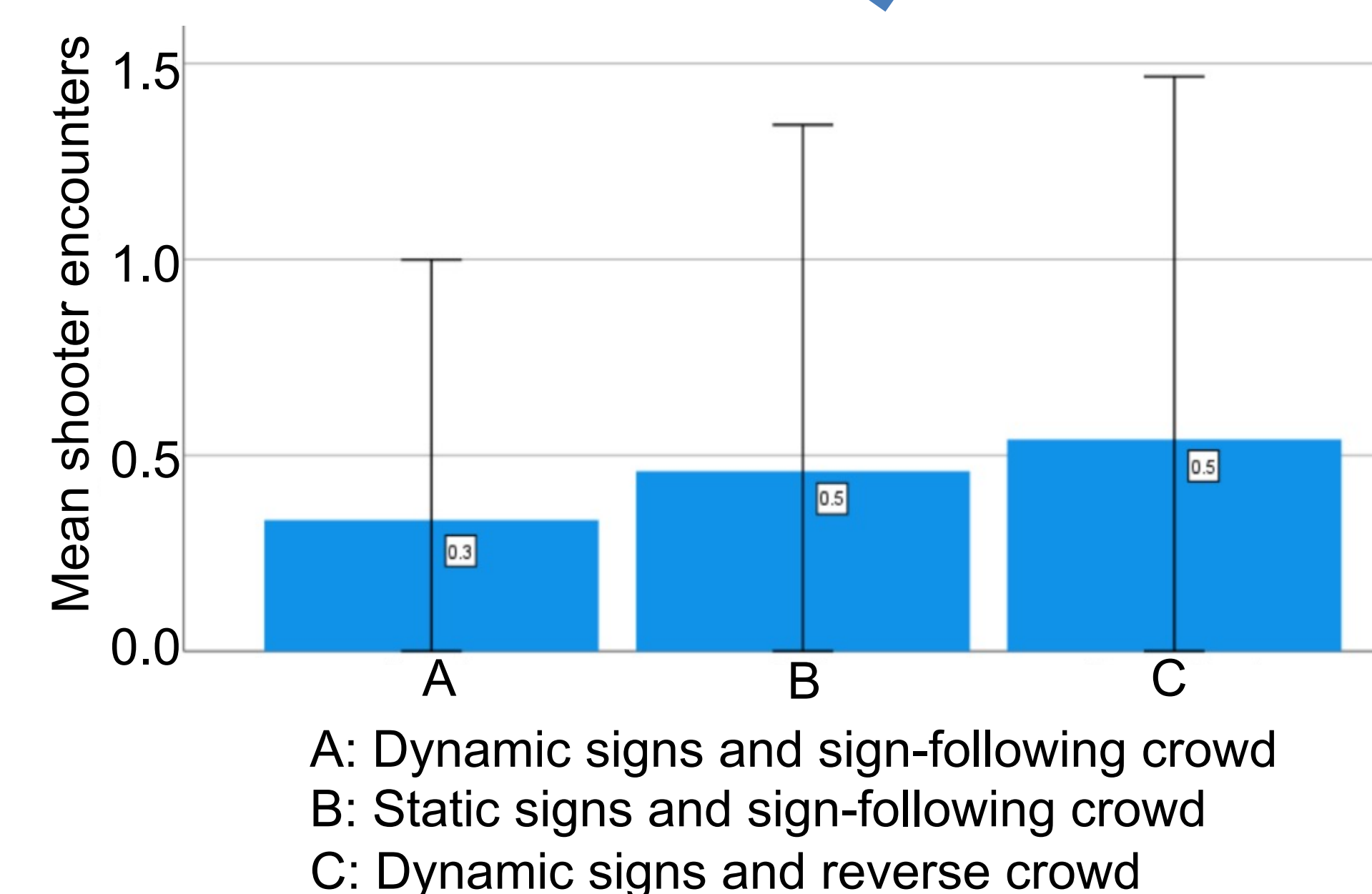
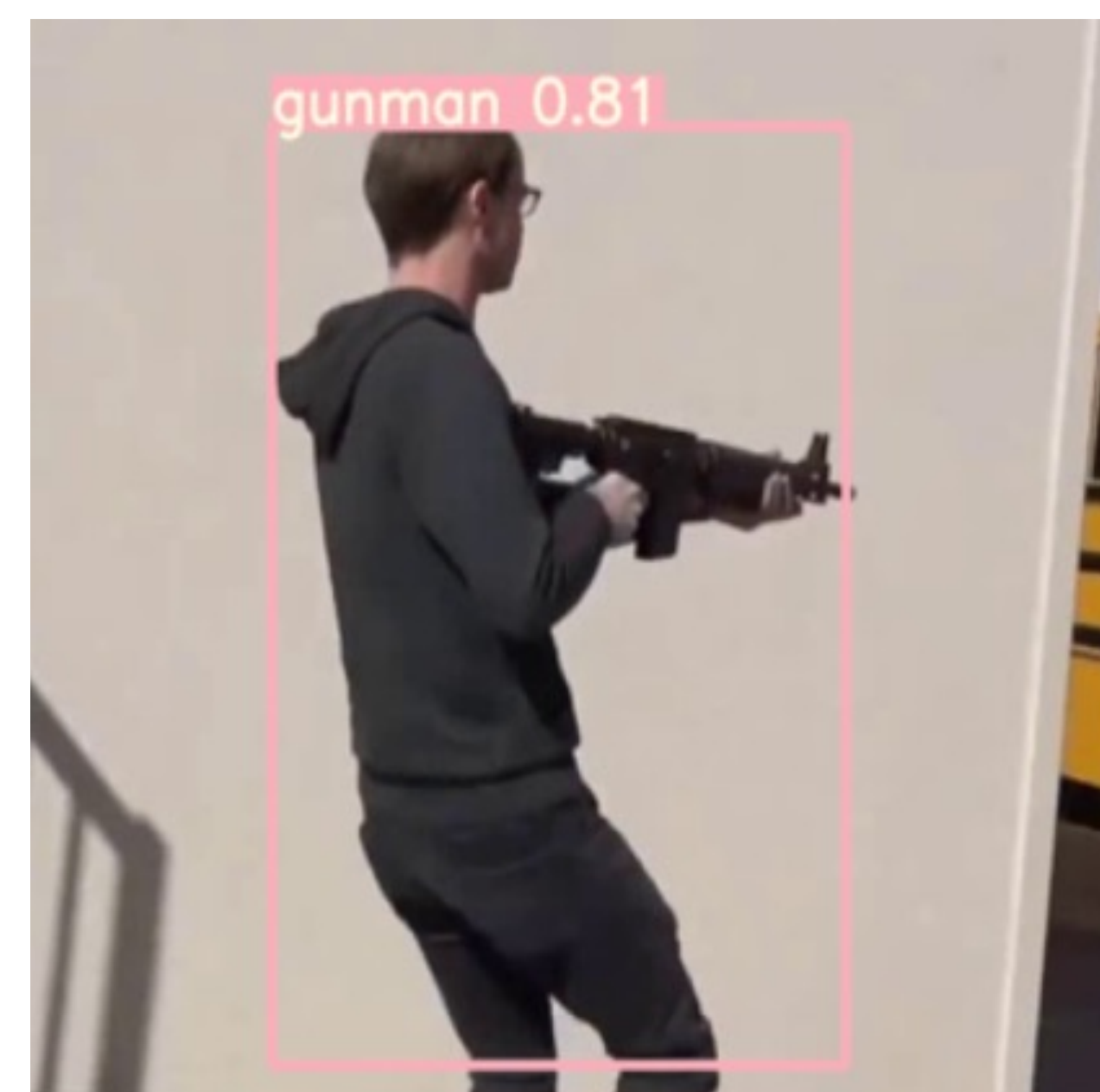
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Challenge:

- To provide real-time information to evacuees about the safest dynamic escape plan in an active shooter situation.

Solution:

- YOLOv5 algorithm was used for detection of gunmen.
- Optimum routes were calculated by solving a finite horizon Markov Reward Process.
- Route suggestions were communicated through dynamically updating signs.



Scientific Impact:

- Domain randomization techniques can broaden the use of synthetic data for deep learning applications.
- Capacity constrained egress optimization can be generalized for city-wide evacuations

Broader Impact:

- ASTERS will make potentially life-saving information available to vulnerable people.
- Impacts students through education and computing outreach.

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