FND: Mutually Aware Social Navigation

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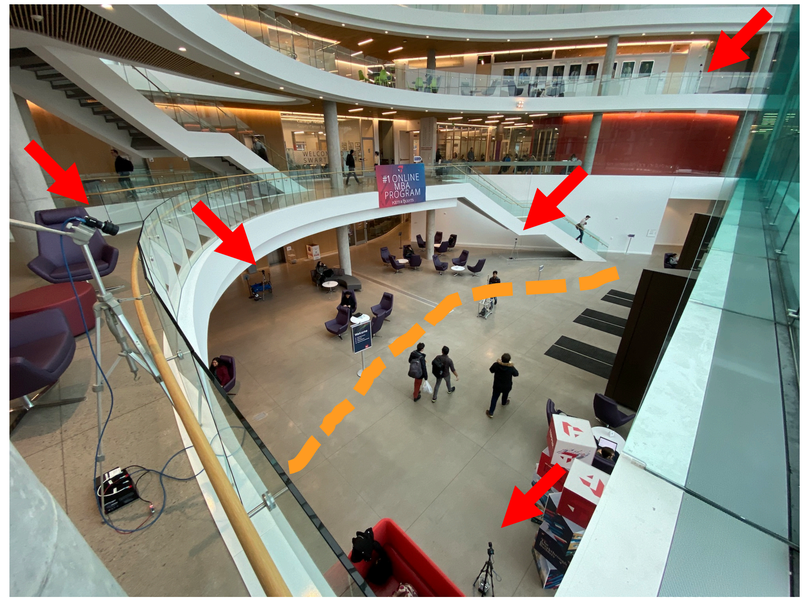

Challenge

1. Improve the way robots reason about human spatial behavior.
2. Develop navigation methods that lead to understandable and appropriate motion patterns in social environments.

Scientific Impact

Create human-aware navigation using methods that incorporate the social norms which govern human physical space into robot planning.

Provide resources for other research teams and developers.

Research Activities (this year)

- We are continuing to work on a robot-perspective, ground-truth position, public behavior dataset. This includes an open data and evaluation pipeline.
- SocNavBench: a simulator with photo-realistic capabilities and curated social navigation scenarios grounded in real-world pedestrian data (in review).
- A detailed, collaborative survey article documenting the core challenges of social robot navigation (in review).
- Continuing work on algorithmic advances for personal space, in order to provide more nuanced understanding than current state of the art (in preparation).
- A new collaboration to identify a better understanding of human awareness of robots during social motion.

Society

Identify appropriate and accepted robot motion behaviors in public settings.

Education & Outreach

Establish a sharable dataset and software pipelines for benchmarking.

Potential Impact

Accelerate system development through open-source technology and datasets.

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