

# NRI: FND: Mutually Aware Social Navigation

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**Our goal is to enable robots to be aware of the mutual dependency between their spatial behavior and that of nearby humans**

We seek to improve the way robots reason about spatial behavior.

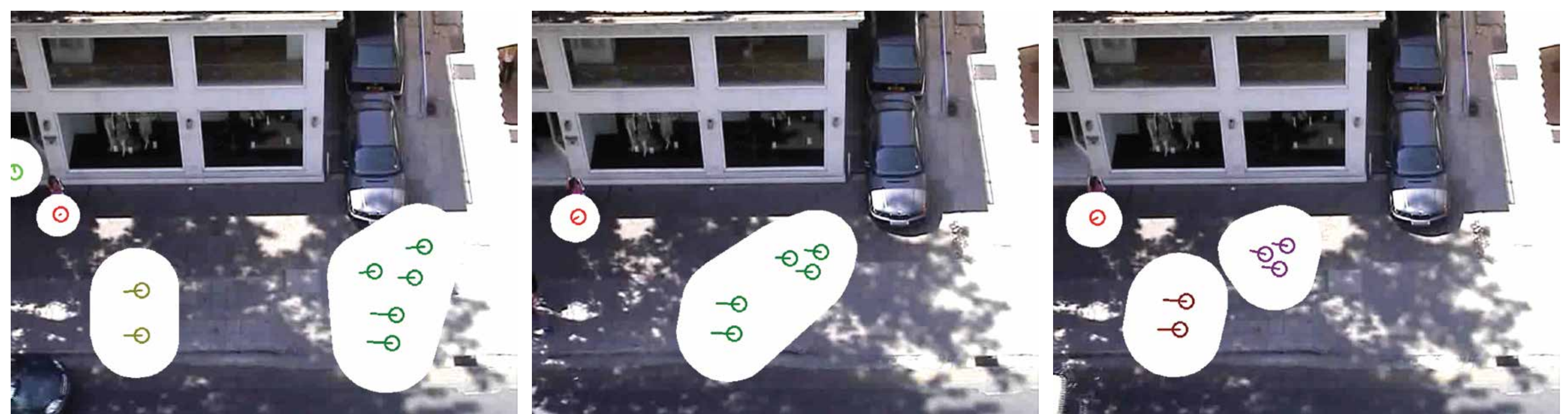
Our work will develop navigation methods that lead to understandable and appropriate motion patterns in social environments.

This effort builds from the team's prior work on conversational group perception (Vázquez) and low-cost, real-time, social motion perception (Chatterjee).

## Current Work

### Allan Wang (PhD student)

A key element in social motion is awareness and prediction of group merges and splits. We are exploring new algorithms and machine learning approaches for detecting these events.



Groups from algorithm, circles and lines added for better visualization

### Abhijat Biswas (MS student)

*Co-advised with Henny Admoni*

Torso pose can help robots infer future human motion, but computationally efficient human 3D pose forecasting is difficult. However, goal-driven pedestrian motion allows reasonable anticipation due to human anatomical and physics constraints. We leverage these to perform fast 3D pose estimation and torso pose forecasting.

