FND: Mutually Aware Social Navigation

IIS 1734361 • 2017 • Aaron Steinfeld, Carnegie Mellon University

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Intellectual Merit

- Improve the way robots reason about human spatial behavior
- Develop understandable and appropriate motion in social environments
- Identify human-aware methods that incorporate social norms

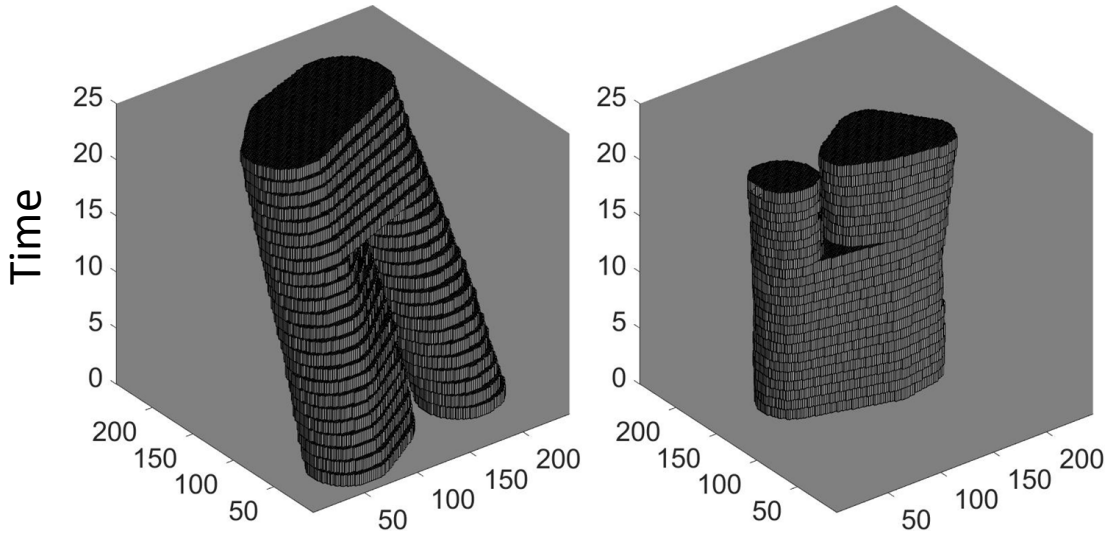
Broader Impact

- Data and software for reuse and educational purposes
- Accelerate system development, open-source technology
- Create appropriate and accepted robot behaviors for public settings
- Increase capacity in the field

Advances This Year

Detecting & Predict Group Splits & Merges

- Outperformed trajectory based approaches (e.g., S-LSTM, S-GAN, SR-LSTM)
- Appears to work for simulated laser scans
- Wang & Steinfeld 2020 RA-L/ICRA



Build a Better Natural Pedestrian Dataset

- Robot-perspective, ground-truth, & natural
- Open data and evaluation pipeline
- Currently: 110 min of data, over “200 trips”