

Investigating Narratives of Social Intention in Restaurant Interactions

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1. Background

- Gap in research about intention estimation[1]
- Difference between realized and unrealized intention
- Lack of guidance for intelligence systems about intent estimation

Restaurant provides a useful setting, due to relevance to the everyday person and abundance of social interactions.

2. Research Question

How to create scenarios in a restaurant setting that allow investigation into how humans and intelligent systems construct multiple plausible narratives of social intention?

3. Methodology

1. Literature Study

- Devise a search query
- Collect papers
- Select relevant literature that describes social interaction in a restaurant setting
- Perform snowballing for additional papers
- Extract information

2. Case study development

- Defining scenarios based on simple social interactions
- Constructing variations based on different levels of openness

4. Literature Survey Findings

Papers*: 123 → 16 → + 3 = 19

Clustering:

1. Social perception and behavioral intention in restaurant interactions
2. Perception and activity understanding in restaurant-like scenes
3. Intent modeling for conversational and multi-domain intelligent systems

1: warmth/competence impressions, trustworthiness/sneakiness, perceived sincerity/relief

2: activity primitives (enter, sit, drink, eat, leave), object states (plate, glass), group configuration and group state descriptors (table-level meal phase and “neediness”)

3: techniques for extracting structured signals that can serve as inputs to internal and external script reasoning about restaurant interactions

5. Scenario Creation

Scenario 1: Robot service recovery (spill)

Scene:

- robot delivers drink
- spill / wrong item / delay
- recovery + customer reaction

Variations:

1A Clear fault

- robot causes spill; replaces fast

1B Style mismatch

- same spill
- humorous line + competent cleanup

1C Responsibility unclear

- spill moment occluded
- robot fault vs customer fault

Scenario 2: Paying

Scene:

- bill placed
- Person A: “no preference”
- Person B hesitates

Variations:

2A Minimal asymmetry

- shrug; neutral response

2B Visible asymmetry

- Person A consumed more / pricier item

2C Competing social norms

- company card / candle / wallet gesture
- split vs treat vs business

6. Conclusion

- Intention estimation is an under-researched topic
- Literature survey defined the structure for creating restaurant-based scenarios that helps with intention observation
- Two restaurant scenarios developed
- Multi-narrative scenarios constitute current gap in knowledge

Supervisors

- Hayley Hung
- Vitaliy Popov

References

[1] Hayley Hung et al. “The Discontent with Intent Estimation In-the-Wild: The Case for Unrealized Intentions”. en. In: Extended Abstracts of the CHI Conference on Human Factors in Computing Systems. Honolulu HI USA: ACM, May 2024, pp. 19. isbn: 979-8-4007-0331-7. doi:10.1145/3613905.3644055. url: <https://dl.acm.org/doi/10.1145/3613905.3644055>

*started → truncated → snowballing = result