Reference Resolution for Pedestrian Wayfinding Systems

Jana Götze, Johan Boye

Abstract References to objects in our physical environment are common especially in language about wayfinding. Advanced wayfinding systems that interact with the pedestrian by means of (spoken) natural language therefore need to be able to resolve references given by pedestrians (i.e. understand what entity the pedestrian is referring to). The contribution of this paper is a probabilistic approach to reference resolution in a large-scale, real city environment, where the context changes constantly as the pedestrians are moving. The geographic situation, including information about objects' location and type, is represented using OpenStreetMap data.

Keywords Pedestrian navigation, Wayfinding, Data-driven methods, Reference resolution, Natural language processing, Openstreetmap, Probabilistic approach