TRANSED Abstract 2022

Title: Participatory Design of Crowd+AI Tools to Map, Analyze, and Visualize Sidewalk Accessibility

For people with disabilities, sidewalks can support independence, mobility, physical activity, and can improve overall quality of life [1]. Yet, in many cities, streets, sidewalks, and pedestrian signals are inaccessible. The problem is not just a lack of accessible sidewalks but also a lack of reliable data on where sidewalks exist and their quality [2]. This lack of data fundamentally limits how sidewalk accessibility can be studied in cities, the ability for communities, advocacy groups, and local governments to understand, transparently discuss, and make informed planning decisions, and how sidewalks and accessibility are incorporated into interactive map, navigation, and GIS analysis tools [3]. The challenge of collecting data on sidewalks, curb ramps, and pedestrian signals is the sheer enormity of the scale of sidewalks in most cities, most of whom, have never completed a sidewalk inventory.

The overarching goal of this project is threefold: first, to engage multiple, diverse stakeholders in the co-development of open-source sidewalk data collection tools that are fast, reliable, and use emerging techniques in geo-crowdsourcing [4] and GeoAI [5]; second, to leverage this data to create new sidewalk analysis and visualization tools that support equitable urban planning, pedestrian advocacy, and people with disabilities; and finally, to work with our partners to validate, support, and sustain the usability and impact of our tools.

This presentation will share preliminary findings from the first phase of this project that includes multiple key stakeholder workshops taking place in spring 2021 with people with disabilities, advocates, caregivers, transportation planners and Americans with Disabilities Act (ADA) coordinators. Both separate and combined stakeholder workshops will be employed to address concerns of power differentials [6]. Approximately 50 workshop participants will discuss the utility of sidewalk accessibility data and mapping tools for ADA transition planning, for advocacy, and for everyday trip planning. Workshops will also explore new kinds of data and tools that can support more inclusive Smart Cities and the many ways such data can facilitate increased mobility and participation among people with disabilities. The workshops will be recorded, transcribed, and coded to identify the main themes and priorities for ongoing development of tools and data that promote inclusive Smart Cities. Evaluation of the workshops will be used to better understand participants experiences and changes in knowledge and attitudes towards crows + AI tools and data. Findings from the workshops will have implications for planners, policy makers, disability organizations and people with disabilities seeking to use data to better inform inclusive city development.

Through an interactive session, we expect attendees to:

•　　　　Acquire information about various tools and methods, such as Project Sidewalk, that can be used in data collection regarding path of travel barriers.

•　　　　Learn about how these tools can be a foundation to engage and empower individuals with disabilities in identifying built environment challenges and offering solutions.

•　　　　Hear about the preliminary outcomes exploring the utility of crowd+AI tools to support more inclusive cities as part of a national project, funded by the National Science Foundation.

References

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