

Augmented Mobility and Spatial Learning for Visually Impaired Users

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Background

Abstract

This project examines challenges that the visually impaired face when learning about new locations. Findings from this study will inform the design of prototypes that will enable visually impaired individuals to learn more about new (and known) locations without the help of a sighted person.

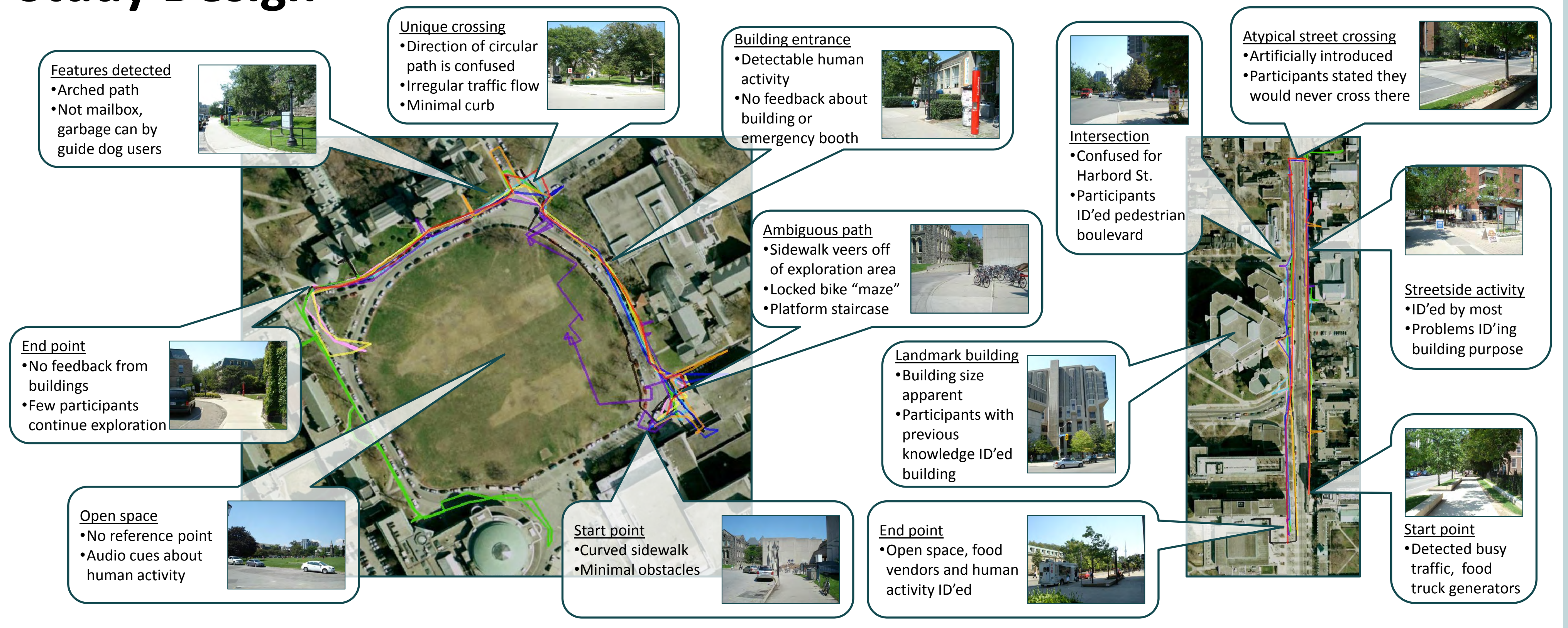
Motivation

While there are number of navigation tools for the visually impaired, we hope to improve support for spatial learning. This would alleviate the need for help from sighted individuals.

Location Learning

- Orientation & Mobility classes
- With a sighted person
- Independent rehearsal sessions
- Minimal, need-based

Study Design



Study Findings

Location Exploration

- Navigation aid feedback
- Safety-oriented
- Goal-oriented
- Follow "natural" paths
- No shortcuts
- Backtracking
- Ask for help

Challenges

- Open spaces
- Finding small objects
- Determining purpose of buildings
- Navigation device inaccuracy
- Weather

Information Needs

- Safety: construction, stairs, street signals, etc.
- Informational: activities, buildings, businesses, entrances, mailboxes, garbage bins, etc.
- Dog vs. white cane users

Next Steps

- Sighted participants
- Observe O&M classes
- Design prototype