

Empathy and AI: Towards Equitable Microtransit

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Research motivation

- Publicly-owned microtransit: a promising solution for connecting transportation disadvantaged populations in suburban and rural communities
- Fixed fare, limited supply, high waiting times and delays
- Need to distribute demand and improve service quality without the use of pricing

Research objective

- Understanding the feasibility of enabling and incentivizing prosocial behavior (volunteering to shift one's trip time or pickup location to accommodate others, prioritize a disadvantaged user or a critical trip) in public microtransit
- Investigating how artificial intelligence (AI) can be used to facilitate prosocial behavior in a trip scheduling environment at a low cognitive burden for the user

Intellectual merit

- Advancing social sciences and engineering by developing and implementing a novel cooperative and adaptive approach to sociotechnical systems and creating new paradigms for moving away from traditional pricing mechanisms and facilitating prosocial behavior among users in a public transportation system.

Broader impact

- Our research will lead to an improved public microtransit system, with fewer missed or delayed critical trips, and fewer missed medical appointments and wages.

Activities to date

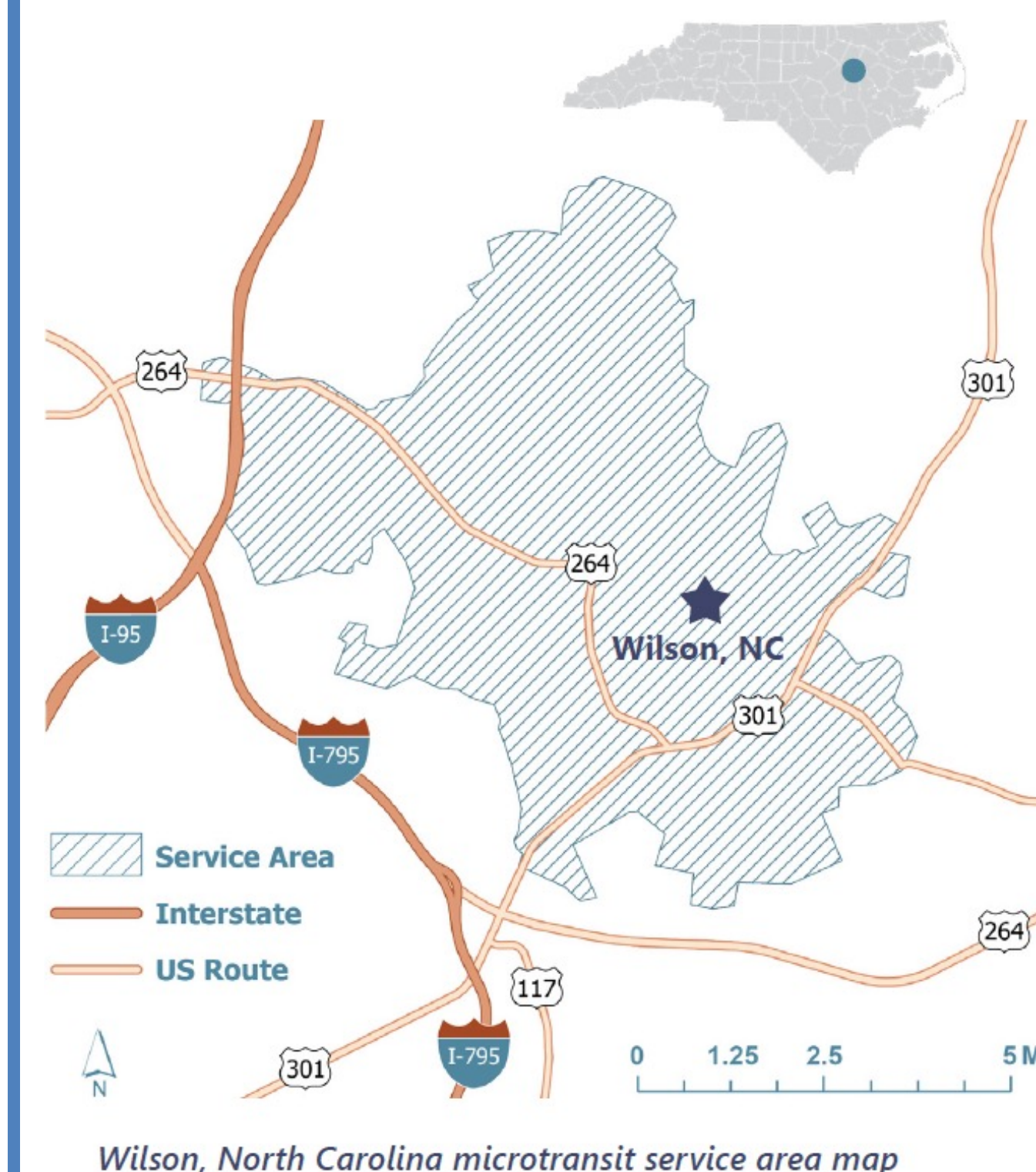
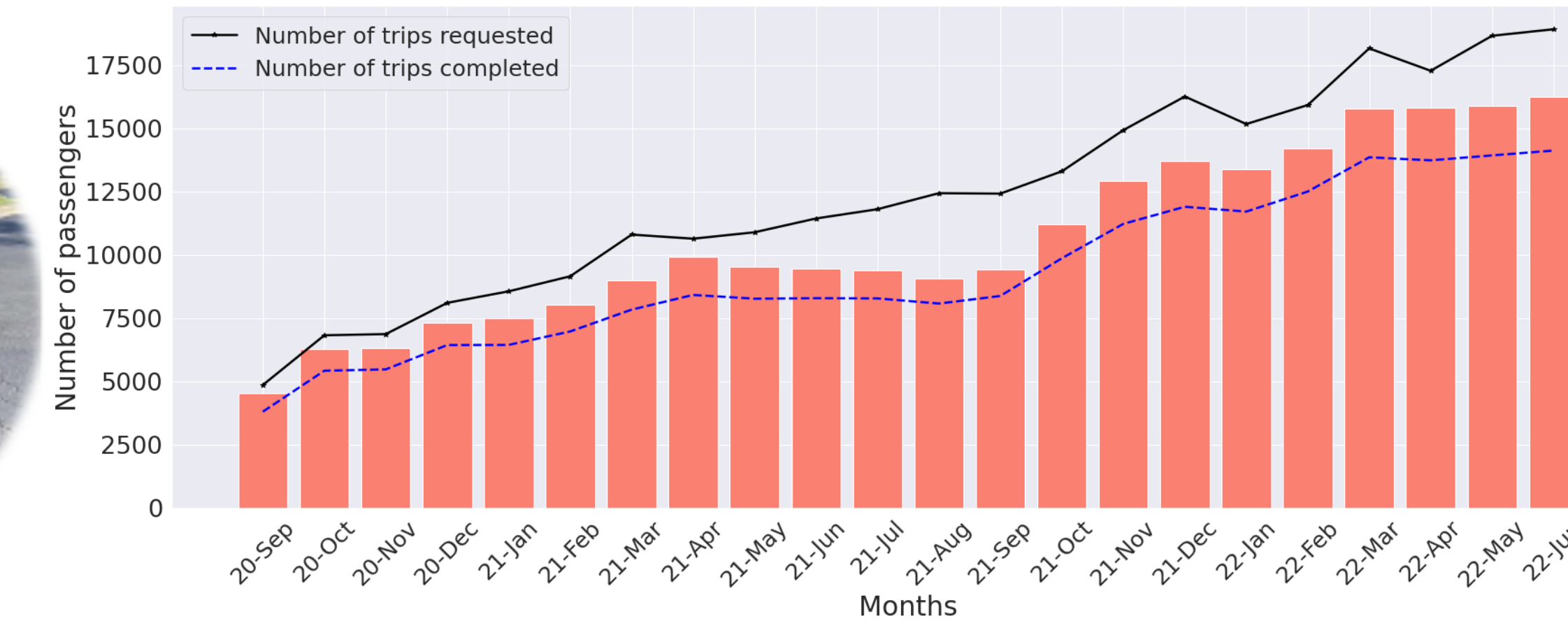
- Community engagement, analysis of microtransit trips and user surveys
- App development for user-led, cooperative adaptive trip planning

Next steps

- Cognitive architectures and messaging for incentivizing prosocial behavior
- Focus groups to collect information on user preferences and test proposed technology and messaging approaches in a trip planning environment

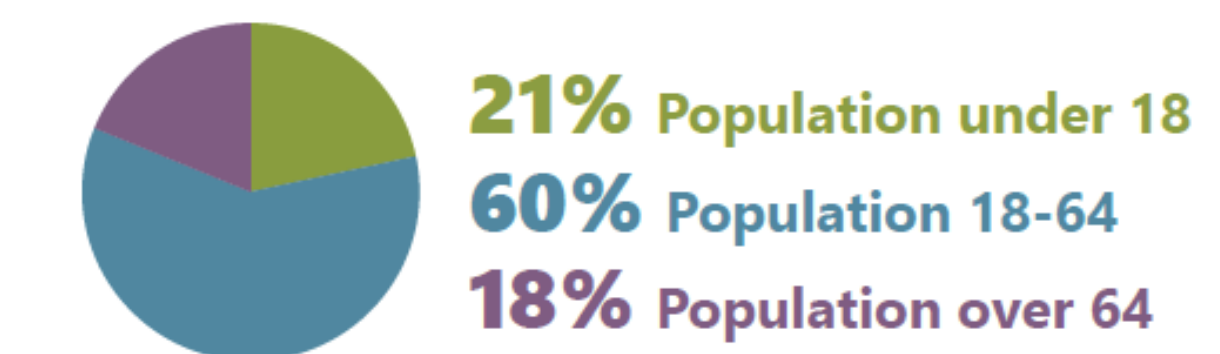
Community Partner: City of Wilson, NC

- Wilson's public microtransit project, RIDE, replaced its entire fixed route system on September 1, 2020.
- The intent was to serve a greater part of the city than before and to do it more efficiently.
- 25% of trip requests not served; average waiting time: 20 minutes
- 47% use RIDE to commute to work; 26% use RIDE for daily errands
- Users: 61% Black; 52% employed; 57% earning < \$25K; 86% no access to car
- 30% would like to see decreased waiting time



Service area socio-demographics

Total population: **40,351** Population density: **1,301** persons per sq mile



Zero-vehicle households **12%** **9%** Vehicle deficient households

59% non-white **23%** below poverty **15%** non-ambulatory

