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Smart Cities *for* Good (SCG) is a research group that aims to solve urban social and environmental challenges through smart city technologies.

Research Interests: Geospatial data science methods applications in health & mobility studies



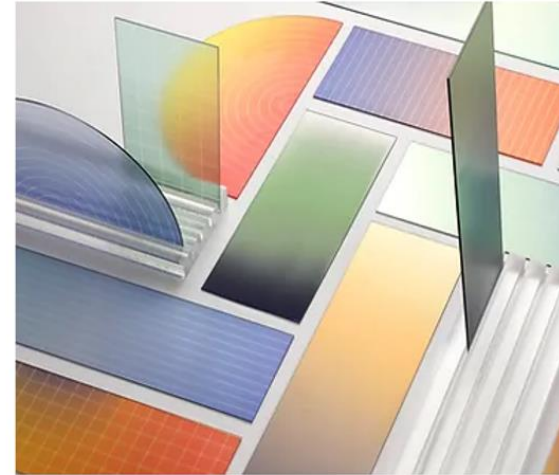
Human Mobility

Accessibility, Travel Behavior,
Walkability, Bike-ability, Public Transit



Environmental Health

Environmental Exposure, Air Pollution,
Green Space, Healthcare Accessibility



Geospatial Data Science

Big Geospatial Data, High-performance
Computing, Geo AI, Geospatial Data
Privacy and Ethics

Research Partnership Interests:

- Advanced geospatial accessibility to healthcare systems (“feels-like accessibility”: Kim et al., *JNO*, 2024) (e.g.) [Paper 1](#) [Paper 2](#) [Paper 3](#) [Paper 4](#)
- Applying smart city technologies (e.g., AI, geospatial data science) into accurately auditing built environments that affect individuals’ health behaviors (e.g.) [Paper 1](#) [Paper 2](#) [Paper 3](#)

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“Feels-like Accessibility” to healthcare services



Original Investigation | Health Policy

Accessibility of Opioid Treatment Programs Based on Conventional vs Perceived Travel Time Measures

Junghwan Kim, PhD; Jinhyung Lee, PhD; Thomas A. Thornhill, MPH; Julia Dennett, PhD; Haidong Lu, PhD; Benjamin Howell, MD; Laretta E. Grau, PhD; David A. Fiellin, MD; Robert Heimer, PhD; Gregg Gonsalves, PhD

“Active Green Exposure” with an eye-tracking device

(a)



Study Participant
Eye-tracking Device
Smartphone (video and GPS recording)

Walking Video Frame

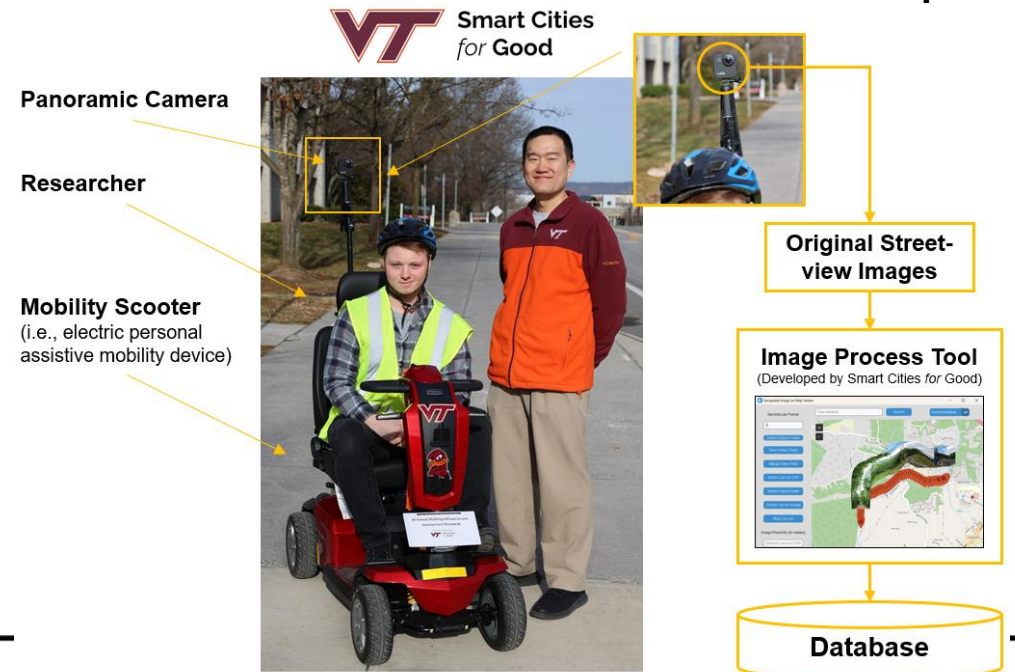


AI-based Analysis



A real-time location of a wearer’s gaze (where the wearer’s pupils see) is illustrated as a red circle.

AI-based built environment audit system



Note. This data collection framework was financially supported by the VT ISCE PREP grant.