

## Introduction to the HICSS-58 Minitrack on GeoImpact: Geospatial Technologies for Social Good

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### 1. Introduction to the Minitrack

This marks the inaugural year of the GeoImpact minitrack, dedicated to exploring the transformative role of geospatial technologies and analytics in addressing critical societal and environmental challenges (Erskine et al., 2024). From advancing public health and ensuring digital inclusivity to safeguarding the environment and responding to humanitarian crises, the intersection of geospatial technologies and system sciences offers significant opportunities to promote societal well-being, equity, and resilience. This minitrack focuses on research that applies geospatial methods to drive sustainable development, improve transparency, and empower decision-makers with actionable, data-driven insights.

Research in areas like climate resilience, smart cities, transportation systems, and agricultural security demonstrates the role of geospatial analytics in shaping the foundations of a more sustainable and equitable future (Nagavi et al., 2024). By integrating advanced technologies such as AI and blockchain, this research addresses complex societal challenges, safeguards data integrity, and enhances trust in digital ecosystems (Dold & Groopman, 2017). These innovations are pivotal for promoting equitable access to information, ensuring privacy, and providing reliable solutions to global and local issues.

The GeoImpact minitrack also emphasizes the importance of ethical and inclusive use of technologies. By addressing challenges such as bridging the digital divide, supporting environmental justice, or advancing educational initiatives, the minitrack prioritizes research that leverages these technologies to create meaningful societal impact and serve the greater good. This focus on social good demonstrates how location analytics can move beyond technical applications to make a real difference and bring significant value in many fields.

The GeoImpact minitrack encourages a rich exchange of ideas and methods to advance geospatial research by bringing together scholars and practitioners from diverse disciplines. It invites empirical and design-based studies that address the dynamic interplay of technology, data, and societal demands. This effort aims to show how location intelligence can support better governance, resilient infrastructure, and sustainable development, making it a crucial part of system research.

### 2. Paper Presentation

The first paper in this minitrack, “ROBIN: An Interactive Visualization System and Instructional Tool to Democratize United States Domestic Migration Data,” by Alexander Bendeck, Clio Andris, and John Stasko, demonstrates how geospatial tools can make complex data more accessible and easier to understand. The paper presents a valuable and innovative contribution by introducing the ROBIN system, an interactive visualization tool designed to democratize U.S. county-level migration data access. The authors fill a gap by creating intuitive, interactive tools that connect migration scholars, students, and the broader public. ROBIN enables users to visualize U.S. county-to-county migration data alongside key county-level attributes such as political leanings or educational attainment. The paper highlights the dual utility of ROBIN: as an educational communication aid for experts and an exploratory tool for non-experts. This research aligns with the GeoImpact minitrack’s focus on advancing equity, education, and accessibility by showing how geospatial technologies can make data more accessible and encourage understanding of critical social issues, helping diverse groups engage in informed discussions and decisions.

The second paper in this minitrack, “Making the Case for a Targeted Needs Assessment for mHealth: Prioritizing Regions in sub-Saharan Africa Using

Geospatial Mapping,” by Kimsey Zajac, Marie Elvira Ludwig, Julia Klein, and Lutz Kolbe, highlights the role of geospatial technologies in addressing disparities in healthcare accessibility. By employing geospatial mapping to identify high-priority regions for mobile health (mHealth) interventions, the authors provide a roadmap for enhancing healthcare delivery in areas often overlooked by traditional approaches. Their findings emphasize the promise of mHealth in low- and middle-income countries and spotlight the digital divide, as many of these regions lack adequate mobile network coverage, necessitating alternative solutions such as SMS or offline tools. This research aligns well with the GeoImpact minitrack’s focus on utilizing geospatial data to promote digital inclusivity and improve well-being. By contextualizing mHealth within the broader landscape of ICT4D, this paper demonstrates how geospatial analysis can guide impactful digital transformations and advance equitable access to critical health services.

Building on the idea of technology’s role in societal impact by Gupta et al. (2018), these papers address critical societal challenges through innovative applications of location analytics. They reflect the core themes of the GeoImpact minitrack, showing the potential of geospatial research to create and promote meaningful changes for social good.

### 3. Conclusion

This is the first year the GeoImpact minitrack has been part of the Location Intelligence Track at HICSS. The minitrack accepted two papers demonstrating the potential of geospatial technologies to address critical societal challenges. The first paper presents a system for visualizing U.S. migration patterns, making data accessible and engaging for experts and non-experts. The second paper uses geospatial mapping to identify priority areas in sub-Saharan Africa for mobile health interventions, addressing healthcare inequities. These contributions illustrate the wide-ranging relevance of GeoImpact across diverse fields.

As geospatial data continues to intersect with advanced technologies such as AI and blockchain, the opportunities for meaningful impact grow exponentially. The accepted papers offer essential insights into the applications of geospatial technologies for equity and inclusivity while pointing out areas for future research to address. We look forward to receiving more high-quality submissions for the GeoImpact minitrack for future HICSS conferences, further building on the research framework outlined by Pick et al. (2017) and

advancing the role of geospatial research in the system sciences.

### 4. References

- Dold, J., & Groopman, J. (2017). The future of geospatial intelligence. *Geo-spatial Information Science*, 20(2), 151-162.
- Erskine, M. A., Pick, J. B., Satpathy, A., Díaz López, A., Sarkar, A., & Shin, N. (2024). Location Analytics in Information Systems: Opportunities for Research and Teaching. *Communications of the Association for Information Systems*, 55(1), 21.
- Gupta, A., Deokar, A., Iyer, L., Sharda, R., & Schrader, D. (2018). Big Data & Analytics for Societal Impact: Recent Research and Trends. *Information Systems Frontiers*, 20, 185-194.
- Nagavi, J. C., Shukla, B. K., Bhati, A., Rai, A., & Verma, S. (2024). Harnessing Geospatial Technology for Sustainable Development: A Multifaceted Analysis of Current Practices and Future Prospects. In *Sustainable Development and Geospatial Technology: Volume 1: Foundations and Innovations* (pp. 147-170). Cham: Springer Nature Switzerland.
- Pick, J. B., Turetken, O., Deokar, A. V., & Sarkar, A. (2017). Location analytics and decision support: Reflections on recent advancements, a research framework, and the path ahead. *Decision Support Systems*, 99, 1-8.