

ACM Transactions on Spatial Algorithms and Systems

Call for Papers

Special issue on Contact Tracing

Guest Editors

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Contact Tracing refers to the process of tracking persons who may have come into spatial contact with an infected person, and subsequently collecting further information about these contacts. The feature-rich interaction, processing and localization/communication modalities of smartphone devices, have brought these to battle on the technological forefront and have curbed the fast spread of pandemics, like COVID-19, introducing the notion of “digital vaccines” to custodians aiming at fast prevention rather than slow intervention.

The community has to this date proposed a wide range of approaches, ranging from: opportunistic to participatory approaches, privacy-sensitive to no-privacy approaches, handheld-based (distributed) to cloud-based (centralized) approaches, proximity-based (e.g., BLE, sound) to location-based approaches (e.g., Wi-Fi, GPS), for only outdoor settings to indoor settings, using closed-source to open-source counterparts. However, a wide range of challenges remain unanswered, including methodologies to improve the penetration and adoption rates, alleviate privacy or expectation skepticism, ubiquitous availability on low-end terminals as well as technological/psychological adoption barriers, achieving cross-country interoperability with standard formations beyond recommendations, scalability/reliability and accuracy verification of engaged spatial technologies as well as lessons about effectiveness from real large-scale deployments.

This special issue intends to bring together transdisciplinary researchers and practitioners working in topics from multiple areas, e.g., Information Communication Technologists (geographic information systems, databases, storage, big data, data mining, machine learning, security/privacy), Epidemiologists, Medical Practitioners, Psychologists, Emergency Response and Public safety, among others.

Topics of interest include (but are not limited to):

- Proximity and localization technologies for Contact Tracing
- Spatial data structures and algorithms for Contact Tracing
- Open-source Contact Tracing apps
- Machine learning and mobility prediction for Contact Tracing
- Geospatial graphical user interfaces for Contact Tracing
- User behavior characterization in Contact Tracing
- Contact Tracing architectures and protocols
- Domain-specific Contact Tracing apps (e.g., factories, campuses, hospitals)
- Location privacy, data sharing and security
- Contact Tracing large-scale field studies and lessons learnt
- Accessibility of Contact Tracing apps and systems
- Ubiquitous Contact Tracing for low-end smartphone device and device diversity aspects
- Individual vs. collective spatial intelligence in Contact Tracing
- Exposure risk modeling

The journal welcomes articles on any of the above topics or closely related disciplines in the context of

contact tracing. TSAS will encourage original submissions that have not been published or submitted in any form elsewhere, and submissions which may significantly contribute to opening up new and potentially important areas of research and development. TSAS will publish outstanding papers that are "major value-added extensions" of papers previously published in conferences. Such extensions should contribute at least 30% new original work. In this case, authors will need to identify in a separate document the list of extensions over their previously published paper. For more information, please visit <https://tsas.acm.org/authors.cfm>.

Important Dates

Oct 30, 2020: Submissions of full-length papers

Jan 15, 2021: Notification of initial reviews

Feb 15, 2021: Submission of revisions

Apr 30, 2021: Notification of final reviews

Fall 2021: Expected publication

For questions and additional information, contact the special issue guest-editors at tsas.ct@gmail.com.