Mehrdad Koohikamali is an Assistant Professor of IS/GIS in the School of Business, University of Redlands. Mehrdad received his Ph.D. in Information Systems at the University of North Texas. He holds an M.S. in Applied GIS from the University of North Texas and an M.S. in GIS from the University of Tehran. His research and professional interests include location intelligence for business, big data analytics, social media analytics, and information privacy. He is a member of the Association for Information Systems and the Decision Sciences Institute. His work appears in journals such as Decision Support Systems, Computers in Human Behavior, Informing Science, and Lecture Notes in Business Information Processing. He is currently working on several projects, including spatial big data analytics: spatial accuracy and privacy challenges, locational privacy issues in US cities and counties, sharing economy in mega cities, and location-based sentiment mining during social crises. His teaching interests include spatial big data analytics, global business spatial analytics, business intelligence and analytics, GIS for business, visual display of business information, and introduction to GIS. He has recently received an IT innovation award in teaching where he integrated location-based social media with teaching materials. Mehrdad has several years of working experience in the field of GIS, ranging from GIS consultant, analyst, and programmer, to GIS manager.

Location Analytics Themes:
Spatial-Temporal Tapestry, Location Privacy, and Spatial Accuracy

Location analytics is not only the intersection of GIS and data science. Location analytics is an emerging field of science where GIS is finally blooming to its full extent. At the root, location analytics is indeed still the application of traditional spatial analysis methods. The availability of new tools to work with spatial data upsurges the need for research and practice in specific areas of location intelligence. There are two main themes in location intelligence that businesses and researchers should put more time into:
- Validating the spatial accuracy of location information and its alignment with the business objective
- Development of real-time and privacy-preserving data collection and location analytics methods to benefit different decision-making processes for businesses and individuals

With some of the newest advancements in Internet of Things (IoT) including location-tracking devices, collection of information has gone too far into people’s [former] private lives. Availability of
spatial big data and the accessibility of tools to create fascinating graphics, has tremendously increased the importance of making true and useful interpretations for businesses and individuals. The goal of location analytics is not to create “beautiful graphics,” but valid and meaningful insights. The question is whether an outcome of location analytics is really going to benefit the specific business process/decision-making? The need for validation of big data and the resulting outcome signals a new form of business practices and responsibilities to monitor the quality of information throughout the location analytics process.

Today’s businesses target individuals to personalize services and products. Tapestry segmentation is a great data source to enhance the location intelligence and analytics capabilities [1]. Current tapestry segmentation does not take into account the spatial-temporal patterns of people’s behaviors. As a result, there is an opportunity to develop more detailed profiles of individuals at different locations and times to infuse neighborhood tapestry segmentation. With the availability of sensor data inside households (e.g., from smartphones, IoT devices, smart assistants) and valuable social media data [2], spatial-temporal segmentation can even go inside homes to see what people do (behavioral analysis) and how they feel (sentiment mining) at different locations within their private life. It may sound creepy and intimate, but people already give up some portion of their privacy in exchange for some benefits and incentives [3]. They even bring their smartphones to bed. Researchers and practitioners should find new ways to keep track of individuals’ data and maximize business benefits, while still preserving individuals’ privacy.

References