Foreword for the special issue of selected papers from the 3rd ACM SIGSPATIAL Workshop on Security and Privacy in GIS and LBS

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The third Workshop on Security and Privacy in GIS and LBS (SPRINGL 2010) was organized in November 2, 2010, San Jose, California in conjunction with the SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS 2010). Security and privacy are the two dimensions of GIS systems and geospatial applications that need to be addressed for these applications to have wider acceptance. However, we are still far from fully achieving this goal with provable techniques that can be adopted by the industry. The SPRINGL workshop series aims to provide a forum for researchers working in the field of geospatial data security and privacy to discuss the advances in this domain.

  In order for solid archival work to be presented to the community, special issues of Transactions on Data Privacy have been organized for the previous SPRINGL workshops. This special issue contains three extended papers that have been selected from the papers presented at SPRINGL 2010 focusing mainly on the privacy aspects.

  The first paper by Maria Luisa Damiani is titled "Third party geolocation services in LBS: privacy requirements and research issues". The author considers location-based services (LBS), and web-based LBS in particular, which are emerging with the advances in positioning technologies and geolocation standards. She identifies the challenges posed by LBS on existing privacy protection solutions. The main point of the paper is that the position information is pro-

vided by a third party which may be not be fully trusted. Web-based LBS model is analyzed in the paper and a privacy-aware geolocation strategy is outlined. The main idea is to minimize the interaction with the untrusted location provider. The author discusses the technical challenges and suggests research directions for the reader.

The second paper by Anna Monreale, Roberto Trasarti, Dino Pedreschi, Chiara Renso, and Vania Bogorny is titled " C-safety: a framework for the anonymization of semantic trajectories". Authors consider the trajectories describing personal movement behavior and the opportunities for analyzing and mining human mobility. Their main concern is the new risks on personal privacy due to this new type of data. Authors show that semantic trajectories, which represent the personal movements as sequences of places visited by a person, may pose a significant threat to privacy. They also propose a privacy model formalizing the attack due to semantic trajectory linking. The model called c-safety is based on generalization techniques with the help of a taxonomy. The claims made in the paper were supported on experiments on real-life GPS trajectory datasets. Authors show that the utility is maintained ad good levels, in the context of sequential pattern mining from trajectories.

The third paper by Sebastien Gambs, Marc-Olivier Killijian, and Miguel Nunez del Prado Cortez¸ has an interesting title " Show Me How You Move and I Will Tell You Who You Are". Authors claim that a malicious person accessing geospatial data, can use it to infer private information from the movements of the individuals recorded in these data sets. Examples for such private data are home address, place of work, and more importantly, their social network. They support their claim with experiments on real mobility data. Authors then propose a sanitization technique based on introducing uncertainty and removing sensitive information. Experiments conducted with GEPETO (GEoPrivacy Enhancing TOolkit) show the effectiveness of different inference attacks on the identification of points of interests, together with their resilience to various sanitization mechanisms.

We believe that the selected papers are a good representative of the research in privacy in GIS and LBS. We hope that you will enjoy reading them.

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