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GeoSensor Networks

Second International Conference, GSN 2006
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Revised Selected and Invited Papers

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Preface

This volume serves as the post-conference proceedings for the Second GeoSensor Networks Conference that was held in Boston, Massachusetts in October 2006. The conference addressed issues related to the collection, management, processing, analysis, and delivery of real-time geospatial data using distributed geosensor networks. This represents an evolution of the traditional static and centralized geocomputational paradigm, to support the collection of both temporally and spatially high-resolution, up-to-date data over a broad geographic area, and to use sensor networks as actuators in geographic space. Sensors in these environments can be static or mobile, and can be used to passively collect information about the environment or, eventually, to actively influence it.

The research challenges behind this novel paradigm extend the frontiers of traditional GIS research further into computer science, addressing issues like data stream processing, mobile computing, location-based services, temporal-spatial queries over geosensor networks, adaptable middleware, sensor data integration and mining, automated updating of geospatial databases, VR modeling, and computer vision. In order to address these topics, the GSN 2006 conference brought together leading experts in these fields, and provided a three-day forum to present papers and exchange ideas.

The papers included in this volume are select publications, corresponding to extended versions of papers presented at the conference, and a few additional invited contributions; all papers went through a rigorous refereeing process. More information about the scientific background of geosensor networks in general and of the papers included in this volume in particular may be found in the Introduction chapter.

We greatly appreciate the many people who made this happen. Specifically, we would like to acknowledge the support of NSF, through the Sensor Science Engineering and Informatics (SSEI) IGERT program at the University of Maine (DGE-0504494), and especially Kate Beard, the principal investigator. We would also like to thank the University of Maine and the University of Pittsburgh for their support. From the University of Pittsburgh, we would especially like to thank George Klinzing, the Vice Provost for Research for his support of the GSN 2006 conference. We would also like to acknowledge the support of StreamBase. Last, but not least, we would like to thank everybody that helped in the organization of the GSN 2006 conference and the production of this volume. In particular, we would like to thank Blane Shaw, the authors and the participants of the conference, the Program Committee members and the Springer staff for their help.

March 2008

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