Preface

The constantly changing landscape of Geospatial Research makes it challenging for experts and practitioners to stay informed of the field’s most up-to-date research. That is why Information Science Reference is pleased to offer this three-volume reference collection that will empower students, researchers, and academicians with a strong understanding of critical issues within Geospatial Research by providing both broad and detailed perspectives on cutting-edge theories and developments. This reference is designed to act as a single reference source on conceptual, methodological, technical, and managerial issues, as well as provide insight into emerging trends and future opportunities within the discipline.

Geospatial Research: Concepts, Methodologies, Tools and Applications is organized into six distinct sections that provide comprehensive coverage of important topics. The sections are:

1. Fundamental Concepts and Theories;
2. Development and Design Methodologies;
3. Tools and Technologies;
4. Utilization and Application;
5. Organizational and Social Implications;

The following paragraphs provide a summary of what to expect from this invaluable reference tool.

Section 1, “Fundamental Concepts and Theories,” serves as a foundation for this extensive reference tool by addressing crucial theories essential to the understanding of Geospatial Research. Introducing the book is Introduction: On the “Birth” of Uberveillance by M. G. Michael; a great foundation laying the groundwork for the basic concepts and theories that will be discussed throughout the rest of the book. Another chapter of note in Section 1 is titled A Sub-Chain Ranking and Recommendation Mechanism for Facilitating Geospatial Web Service Composition by Zhangbing Zhou, Zehui Cheng, Ke Ning, Wenwen Li, and Liang-Jie Zhang. Section 1 concludes, and leads into the following portion of the book with a nice segue chapter, Decision-Making Processes Based on Knowledge Gained from Spatial Data by Elzbieta Malinowski.

Section 2, “Development and Design Methodologies,” presents in-depth coverage of the conceptual design and architecture of Geospatial Research. Opening the section is A Multiple Natural Hazards Assessment Model Based on Geomorphic Terrain Units by Michael W. Hernandez. Through case studies, this section lays excellent groundwork for later sections that will get into present and future applications for Geospatial Research, including, of note: Semantic Spatial Representation, an Experimental Proposal...
in the Framework of eParticipation" by Angioletta Voghera and Rossella Crivello. The section concludes
with an excellent work by Erdem Kaya, Mustafa Tolga Eren, Candemir Doger, and Selim Saffet Balcisoy,
titled "Building a Visual Analytics Tool for Location-Based Services.

Section 3, “Tools and Technologies,” presents extensive coverage of the various tools and technolo-
gies used in the implementation of Geospatial Research. Section 3 begins where Section 2 left off,
though this section describes more concrete tools at place in the modeling, planning, and applications of
Geospatial Research. The first chapter, "Parallel kNN Queries for Big Data Based on Voronoi Diagram
Using MapReduce" by Wei Yan, lays a framework for the types of works that can be found in this section.
Section 3 is full of excellent chapters like this one, including such titles as "GISS and GISP Facilitate
Higher Education and Cooperative Learning Design" by Gilbert Ahamer; and "Physical Health Promotion
through Modern Technologies: Challenges to Concerns" by Sandul Yasobant. Where Section 3 described
specific tools and technologies at the disposal of practitioners, the concluding chapter "Examining Data,
Space, and Time with Tableau Public™: Harnessing Open Data to Enhance Visual Learning through
Interactive Maps and Dashboards" written by Shalin Hai-Jew, leads us to Section 4, which describes the
use and applications of the tools and frameworks discussed in previous sections.

Section 4, “Utilization and Application,” describes how the broad range of Geospatial Research
efforts has been utilized and offers insight on and important lessons for their applications and impact.
The first chapter in the section is titled "Web-Based Information Exploration of Sensor Web Using the
HTML5/X3D Integration Model" written by Byoungyun Yoo. This section includes the widest range
of topics because it describes case studies, research, methodologies, frameworks, architectures, theory,
analysis, and guides for implementation. The breadth of topics covered in this section is also reflected
in the diversity of its authors, from countries all over the globe. Another chapter to note is "Examining
User Switch between Mobile Stores: A Push-Pull-Mooring Perspective" by Tao Zhou. The section con-
cludes with "Using the Retrospective Approach to Commemorate AutoCarto Six" by Barry Wellar, a great
transition chapter into the next section.

Section 5, “Organizational and Social Implications,” includes chapters discussing the organizational
and social impact of Geospatial Research. The section opens with "Scalability and Sustainability of
M-Government Projects Implementation in Developing Countries" by Olalekan Samuel Ogunleye and
Jean-Paul Van Belle. Where Section 4 focused on the broad, many applications of Geospatial Research
technology and will look into theoretical approaches and offer alternatives to crucial questions. This
section focuses exclusively on how these technologies affect human lives, either through the way they
interact with each other, or through how they affect behavioral/workplace situations. Other interesting
chapters of note include "Community-Engaged GIS for Urban Food Justice Research" by Margaret W.
Pettygrove and Rina Ghose; and "A Clinical Decision Support System: Ontology-Driven Approach for
Effective Emergency Management" by Jalel Akaichi and Linda Mhadhbi. The section concludes with
an interesting research paper by Glen Farrelly entitled "Which Way is Up?: How Locative Media May
Enhance Sense of Place.

Section 6, “Emerging Trends,” highlights areas for future research within the field of Geospatial
Research, opening with "A New Spatial Transformation Scheme for Preventing Location Data Disclosure
in Cloud Computing" by Min Yoon, Hyeong-il Kim, Miyoung Jang, and Jae-Woo Chang. This section
contains chapters that look at what might happen in the coming years that can extend the already staggering
amount of applications for Geospatial Research. The final chapter of the book looks at an emerging
field within Geospatial Research, in the excellent contribution, "New Developments in Geographical
Information Technology for Urban and Spatial Planning" by José António Tenedório et al.
Although the primary organization of the contents in this multi-volume work is based on its eight sections, offering a progression of coverage of the important concepts, methodologies, technologies, applications, social issues, and emerging trends, the reader can also identify specific contents by utilizing the extensive indexing system listed at the end of each volume. As a comprehensive collection of research on the latest findings related to using technology to providing various services, *Geospatial Research: Concepts, Methodologies, Tools and Applications*, provides researchers, administrators and all audiences with a complete understanding of the development of applications and concepts in Geospatial Research. Given the vast number of issues concerning usage, failure, success, policies, strategies, and applications of Geospatial Research in countries around the world, *Geospatial Research: Concepts, Methodologies, Tools and Applications* addresses the demand for a resource that encompasses the most pertinent research in technologies being employed to globally bolster the knowledge and applications of Geospatial Research.