

FEATURE SECTION EDITORIAL

Web and wireless geographic information systems

W2GIS is a series of events continuously developing and expanding, with the aim to provide a forum for discussing advances in theoretical, technical, and practical issues in the field of wireless and Internet technologies suited for the spreading, using, and processing of geo-referenced data.

Following a tradition of alternation between Europe and Asia, the 11th edition took place in the wonderful city of Naples, Italy, in April 2012, offering participants a unique setting for scientific discussion. The international program committee was composed of 38 representatives from 15 countries, and made a valuable effort to select 13 full papers and 4 short papers from a total of 32 submissions, coming from 12 countries in 4 continents. These papers have been published in a Volume of LNCS [1]. As a result, the technical program of the symposium provided many stimulating contributions, ranging from spatial human-computer interaction to positioning, including sensor networks and geo semantics.

Two invited speakers further enriched the event. Prof. Christopher Jones, from the School of Computer Science at Cardiff University (UK), presented an overview of a natural language photo captioning system able to describe the geographical context of the photo with regard to its possible subject, in association with proximal and regional place names. Dr. Andreas Sasse, from the Volkswagen Group Research, Department of Driver Information Systems, in Wolfsburg (DE), provided a stimulating talk on the future requirements, in terms of accuracy and updates, for maps and location-based services to be included in tomorrow's vehicles.

For this special feature, revised and extended versions were solicited from the highest quality papers at the 11th W2GIS symposium. The usual rigorous JOSIS review process was applied, leading to the acceptance of two papers in the field of sensor networks. Nowadays we live in an environment which is more and more embedded of sensors, able to capture and distribute observations of the phenomena surroundings our lives. Consequently, much research effort worldwide is expended on addressing the challenges posed by this new technological evolution.

The first paper of this special feature, is by Annalisa Appice, Anna Ciampi, Donato Malerba, and Pietro Guccione. This article describes a new approach to deal with the problem of missing observations in networks of sensors. In particular, authors propose a novel spatiotemporal interpolation process, overcoming the tendency to treat space and time separately. The proposed technique is empirically evaluated using two large, real climate sensor networks. The results show that, in spite of a notable reduction in the volume of data, the technique guarantees accurate estimation of missing data.

The second paper is by Mohamed Bakillah, Steve H.L. Liang, Alexander Zipf, and Mir

Abolfazl Mostafavi. The authors present a context-aware ontology-based semantic mediation service for heterogeneous sensor services, able to deal with the real-time variability of thematic, spatial, and temporal elements that describe sensor data in different contexts. The proposed semantic mediation service integrates a rule-based reasoning solution to support the resolution of semantic heterogeneities. To explain the applicability of the proposed approach, authors present also a scenario illustrating how the semantic mediation service can improve sensor data interpretation, reuse, and sharing in static and dynamic settings.

We hope you will enjoy reading these two papers and find them relevant and useful for your work, bringing at the same time your attention to the W2GIS event.

Last but not least, we wish to thank all the people who made possible this special feature. In particular we extend our thanks to the local organizers of the 11th W2GIS symposium, for the support during the event; and to the entire W2GIS Scientific Committee, who offered us the opportunity to experience the exciting role of program chairs, leading to this special feature.

References

- [1] DE MARTINO, S., PERON, A., AND TEZUKA, T., Eds. *Proc. 11th International Symposium on Web and Wireless Geographical Information Systems (W2GIS)*. Lecture Notes in Computer Science. Springer, Berlin, 2013.

Sergio Di Martino
University of Naples "Federico II"

Adriano Peron
University of Naples "Federico II"

Taro Tezuka
University of Tsukuba