

Semantic Web Technologies for Health Data Management

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1 Description

Better information management is the key to a more intelligent health and social system. To this direction, many challenges must be first overcome, enabling seamless, effective and efficient access to the various health data sets and novel methods for exploiting the available information. This workshop aims to bring together an interdisciplinary audience interested in the fields of semantic web, data management and health informatics to discuss the unique challenges in health care data management and to propose novel and practical solutions for the next generation data-driven health-care systems.

Motivation: Key in achieving the vision of affordable, less intrusive and more personalized care, is the efficient and effective exploitation of health data. Ultimately this has the potential to increase the quality of life as well as to lower mortality. However, the lifelong patients data to be stored are complex, with hundreds of attributes per patient record that will continually evolve as new types of calculations and analysis/assessment results are added to the record over time. In addition data exist in many different formats, from textual documents and web tables to well-defined relational data and APIs. Furthermore, they pertain to ambiguous semantics and quality standards resulted from different collection processes across sites. The vast amount of data generated and collected comes in so many different streams and forms from physician notes, personal health records, images from patient scans, health conversations in social media, to continuous streaming information collected from wearables and other monitoring devices.

The goal of this workshop is to bring together researchers cross-cutting the fields of semantic web, data management and health informatics to discuss the unique challenges in health care data management and to propose novel and practical solutions for next generation 'data driven' healthcare systems. Developing optimal frameworks for semantic-based, large-scale data-sharing, curating

data from various Health Records has the potential to have a tremendous impact on healthcare, delivering better outcomes at a lower cost.

Program Chairs:

Haridimos Kondylakis⁴ is a Collaborating Researcher at Computational BioMedicine Laboratory (CBML), Institute of Computer Science, Foundation of Research & Technology-Hellas (FORTH). He received his PhD degree in Computer Science from the Univ. of Crete. His research interests span the following areas: Semantic Integration; Knowledge Evolution; Applications of Semantic Technologies to eHealth Systems; Big Data Management; Personal Health Systems. He has extensive experience in participating in more than 15 European Projects involved in semantic data management for healthcare. He has more than 90 publications in premier international conferences, books and journals including ACM SIGMOD, VLDB, JWS, SJW, JMIR, JBI and IJMI. He has also served as a reviewer in several journals and conferences, such as JWS, JODS, WWW, CIKM, ISWC and as a PC member in premier conferences and workshops.

Praveen Rao⁵ is an Associate Professor in the School of Computing and Engineering at University of Missouri-Kansas City. His research interests are broadly in the areas of data management and health informatics. Specifically, he is interested in developing scalable techniques for data storage and retrieval as well as extraction of insights from large-scale semistructured and graph databases. His research has been published in premier international conferences such as VLDB, ICDE, WWW, and ISWC, and journals such as ACM TODS, ACM TOIT, IEEE TKDE, VLDBJ, JBI, and JWS. He is a recipient of two National Science Foundation (NSF) grants, two IBM faculty awards, U.S. Air Force Summer Faculty Fellowship, and National Research Council (NRC) Research Associateship Senior Fellowship Award. He has served on the PC of several international conferences and co-chaired workshops at international conferences. He serves on the editorial board of IEEE Access, Springer's Journal of Healthcare Informatics Research, and Frontiers in ICT (Big Data). He is an IEEE Senior Member.

Kostas Stefanidis⁶ is an Associate Professor at the University of Tampere, Finland. Previously, he worked as a research scientist at ICS-FORTH, Greece, and as a post-doctoral researcher at NTNU, Norway, and at CUHK, Hong Kong. He got his PhD in personalized data management from the University of Ioannina, Greece. His research interests are in the broader area of Big Data. They lie in the intersection of Databases, Data Mining and the Web, and include personalization and recommender systems, large-scale entity resolution and information integration, semantic-based data management in healthcare and query and data exploration paradigms. He has co-authored more than 65 papers in peer-reviewed conferences and journals, including ACM SIGMOD, IEEE ICDE,

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ISWC, Elsevier IS and ACM TODS. He is the General co-Chair of the Workshop on Exploratory Search in Databases and the Web (ExploreDB), and served as the Web & Information Chair of SIGMOD/PODS 2016, and the Proceedings Chair of EDBT 2016. He has also received the ISWC 2015 Best Student Paper Award, and he has co-authored a book on entity resolution in the Web of data.