Proceedings of the 7th International Workshop on Semantic Web Solutions for Large-scale Biomedical Data Analytics - SeWebMeDa-2024

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Abstract

This preface summarises the 7th International Workshop on Semantic Web Solutions for Large-scale Biomedical Data Analytics (SeWebMeDa-2024), a co-event with The ESWC 2024: Extended Semantic Web Conference, held on May 26th 2024 in Hersonissos, Greece.

1. Introduction

The seventh edition of this International workshop invites papers for life sciences and biomedical data processing, as well as the amalgamation with Linked Data and Semantic Web technologies for better data analytics, knowledge discovery and user-targeted applications. This research contribution should provide useful information for the Knowledge Acquisition research community as well as the working Data Scientist.

This workshop at the Extended Semantic Web Conference (ESWC) seeks original contributions describing theoretical and practical methods and techniques that present the anatomy of large-scale linked data infrastructure, which covers: the distributed infrastructure to consume, store and query large volumes of heterogeneous linked data; using indexes and graph aggregation to better understand large linked data graphs, query federation to mix internal and external data sources, and linked data visualisation tools for health care and life sciences. It will further cover topics around data integration, data profiling, data curation, querying, knowledge discovery, ontology mapping / matching / reconciliation and data / ontology visualisation, applications / tools / technologies / techniques for life sciences and the biomedical domain. SeWeBMeDA aims to provide researchers in biomedical and life science, an insight and awareness about large-scale

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data technologies for linked data, which are becoming increasingly important for knowledge discovery in the life sciences domain.

Topics of interest include, but are not limited to Semantic Web and Linked Data technologies in the following areas:

- Generative AI and conversational AI applications in healthcare and life sciences
- New technologies and exploitation of existing ones in Linked Data, Semantic Web and Large Language Models (LLMs).
- Techniques for analyzing semantic data in the life sciences, medicine and healthcare
- Integration, analysis and data use in pursuit of challenges in the life sciences, medicine and health
- Tools and applications for biomedical and life sciences
- Large-scale biomedical data curation and integration
- Processing biomedical data at scale
- Knowledge representation and knowledge discovery for biomedical data
- Data and metadata publishing, profiling and new datasets in biomedical and life sciences
- Question answering over biomedical/ life science Linked Data, Ontologies and Knowledge Graphs
- Querying and federating data over heterogeneous data sources
- Biomedical ontology creation, mapping/ matching/ translation and reconciliation
- Biomedical Ontology and data visualisation
- Building and maintaining biomedical knowledge graphs
- Machine learning with biomedical knowledge graphs
- Virtual and Augmented Reality in Biomedical/ Life Science education and applications
- Risks and opportunities of using Semantic Web technologies in Healthcare and Life science
- Data resources, tools and technologies relevant to research COVID-19 pandemic
- Cleaning, quality assurance, provenance of data, services and processes in Biomedical/ Life Science
- Knowledge Graphs and Relational Learning for Life Sciences
- Intelligent Visualisations of Linked Life Science Data
- Biomedical data quality assessment and improvement
- From Semantics to Explanations in biomedicine and life sciences
- Data streams, Internet of Things, mobile platforms, cloud environment in life science
- Text analysis, text mining and reasoning using semantic technologies
- New technologies and exploitation of existing ones in Linked Data and Semantic Web
- Social, ethical and moral issues publishing and consuming biomedical and life sciences data

2. Organisation

2.1. Workshop Chairs

- Ali Hasnain, Royal College of Surgeon, Ireland.

- Michel Dumontier, Maastricht University, Maastricht, Limburg, NL.
- Alba Morales Tirado, The Open University, United Kingdom.
- Dietrich Rebholz-Schuhmann, ZB MED, Cologne, DE.

2.2. Programme Committee

- Ali Hasnain, Royal College of Surgeon, Ireland
- Maria Esther-Vidal, Leibniz University Hannover
- Remzi Çelebi Maastricht University
- Claudia D'Amato University of Bari
- William Van Woensel, University of Ottawa
- Holger Stenzhorn, University of Tübingen
- Shruthi Chari, Rensselaer Polytechnic Institute
- Catia Pesquita, LaSIGE, Faculdade de Ciências, Universidade de Lisboa
- Dietrich Rebholz-Schuhmann,ZB MED Cologne, DE
- Michel Dumontier, Maastricht University, NL
- Sabbir Rashid, Rensselaer Polytechnic Institute
- Mikel Egaña Aranguren, University of Basque Country (UPV/EHU)
- Alba Morales Tirado, The Open University, UK