

Preface

As computerized healthcare support systems are rapidly becoming more knowledge intensive, the representation of medical knowledge in a form that enables reasoning is growing in relevance and taking a more central role in the area of Medical Informatics. In order to achieve a successful decision support and knowledge management approach to medical knowledge representation, the scientific community has to provide efficient representations, technologies, and tools to integrate all the important elements that healthcare providers work with: electronic health records and healthcare information systems, clinical practice guidelines and standardized medical technologies, codification standards, etc.

Synergies to integrate the above-mentioned elements and types of knowledge must be sought both in the medical problems (e.g., prevention, diagnosis, therapy, prognosis, etc.) and in the Computer Science and Artificial Intelligence technologies (e.g., natural language processing, digital libraries, knowledge representation, knowledge integration and merging, decision support systems, machine learning, e-learning, etc.). The sixth international KR4HC workshop aimed at attracting the interest of novel research and advances contributing in the definition, representation, and exploitation of healthcare knowledge in medical informatics.

Historical Remark of the Workshop: The first KR4HC workshop, held in conjunction with the 12th Artificial Intelligence in Medicine conference (AIME09), brought together members of two existing communities: the clinical guidelines and protocols community, which held a line of four workshops (European Workshop on Computerized Guidelines and Protocols CPG2000 and CPG2004; AI Techniques in Health Care: Evidence-based Guidelines and Protocols 2006, and Computer-based Clinical Guidelines and Protocols 2008), and a related community which held a series of three workshops devoted to the formalization, organization, and deployment of procedural knowledge in health care (CBMS07 Special Track on Machine Learning and Management of Health Care Procedural Knowledge 2007; From Medical Knowledge to Global Health Care 2007; Knowledge Management for Health Care Procedures 2008). Since then, two more KR4HC workshops were held KR4HC 2010 and KR4HC 2011, in conjunction with the ECAI10 and the AIME11 conferences. In 2012, the fourth KR4HC workshop was organized in conjunction with ProHealth as part of the BPM12 conference. We are continuing the efforts with a second Joint Workshop on Knowledge Representation for Health Care and Process-Oriented Information Systems in Health Care (KR4HC/ProHealth) in the 14th Artificial Intelligence in Medicine conference (AIME13).

The Sixth International Workshop on Knowledge Representation for Health Care was organized together with the 14th International Conference on Principles of Knowledge Representation and Reasoning (KR14), within the Vienna Summer of Logic 2014.

Twenty-six papers were submitted to KR4HC 2014, among which eighteen were full research papers, and eight were short papers describing short research, position papers, problem analyses, or demonstrations of implemented systems. Seven were selected for full presentation (39%) and nine for short presentation, among which four were short papers (50%) and five were full research papers (28%). One of the accepted long papers was withdrawn by the authors.

We would also like to acknowledge Stefania Montani (Università degli Studi del Piemonte Orientale “Amedeo Avogadro”) for her implication in the proposal and preparation of the keynote talk. Unfortunately she finally had to excuse her participation. This drove us to agree on Giorgio Leonardi (Università degli Studi del Piemonte Orientale “Amedeo Avogadro”) to present Stefania’s talk, which resulted on a challenging presentation under the title “Knowledge-Intensive Medical Process Similarity.”

This volume contains a selection of the 11 best papers presented in the KR4HC 2014 workshop, together with a paper by the keynote speaker.

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