

Preface

Aims and scope of the workshop Information for real life AI applications is usually pervaded by uncertainty and subject to change, and thus demands for non-classical reasoning approaches. At the same time, psychological findings indicate that human reasoning cannot be completely described by classical logical systems. Knowledge representation offers a rich palette of methods for uncertain reasoning both to describe human reasoning and to model AI approaches. Its many facets like qualitative vs. quantitative reasoning, defeasible and analogical reasoning, causal reasoning for action and planning, as well as nonmonotonicity and belief revision, including techniques from machine learning, among many others, have become very active fields of research. Beyond computational aspects, these methods aim to reflect the rich variety of human reasoning in uncertain and dynamic environments. The aim of this series of workshops is to address recent challenges and to present novel approaches to uncertain reasoning and belief change in their broad senses, and in particular provide a forum for research work linking different paradigms of formal and cognitive reasoning. Previous events of the Workshop on Dynamics of Knowledge and Belief (DKB) took place in Osnabrück (2007), Paderborn (2009), Berlin (2011), and Koblenz (2013), previous editions of the Workshop on KI & Kognition (KIK) took place in Saarbrücken (2012), Koblenz (2013), and Stuttgart (2014), and joint workshops took place in Dresden (2015), Dortmund (2017), and Berlin (2018).

Focus of the workshop This year, again we put a special focus on papers that provide a base for connecting formal-logical models of knowledge representation and cognitive models of reasoning, addressing formal as well as experimental or heuristic issues. Reflecting this focus, the workshop Formal and Cognitive Reasoning at KI 2019 was organized jointly by the GI special interest groups FG Wissensrepräsentation und Schließen and FG Kognition. This volume contains the papers presented at the DKB/KIK 2019 workshop on formal and cognitive reasoning held on 23-Sep-2019 in Kassel. There were eight submissions to the workshop. Each submission was reviewed by three program committee members. The committee decided to accept seven papers. In consequence, the workshop hosted contributions from diverse fields such as belief change, argumentation, conditional logic, and syllogistic reasoning. We are very grateful to Gerd Stumme for enriching the program by a keynote about ordinal data analysis.

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