# Synergies between CBR and Knowledge Discovery

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Case-Based Reasoning
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(Editors)

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# Preface

This workshop builds on the momentum of the first Workshop on Synergies between CBR and Data Mining, which was held at ICCBR 2014 in Frankfurt, Germany. This series of workshops focuses on the multi-faceted and evolving relationships between Case-Based Reasoning (CBR) and knowledge discovery.

At the core of CBR lies the ability of a system to learn from past cases. However, CBR systems often incorporate knowledge discovery methods, for example, to organize memory or to learn adaptation rules. In turn, knowledge discovery systems often utilize CBR as a learning methodology, for example, through a common set of problems with the nearest-neighbor method and reinforcement learning. Meanwhile, the machine learning community, which is tightly coupled with knowledge discovery, has historically included CBR among the types of instance-based learning.

This second Workshop on Synergies between CBR and Knowledge Discovery is dedicated to an in-depth study of the possible synergies between case-based reasoning and knowledge discovery. It also aims to identify potentially fruitful ideas for cooperative problem-solving where both CBR and knowledge discovery researchers can compare and combine methods. In particular, new advances in knowledge discovery may help CBR to advance its field of study, and CBR may play a vital role in the future of knowledge discovery.

Five papers have been selected for presentation at this years workshop and inclusion in the Workshop Proceedings. They explore: advances in medical process mining, taking context into account, which is crucial in medical domains [Canensi et al.]; feature weight learning in a conversational recommender system based on preference discovery [Sekar and Chakraborti]; learning goal trajectories in a conversational recommender system [Eyorokon et al.]; knowledge discovery based on streams for case base maintenance [Zhang et al]; and evaluation of a case-based approach to discovering fraud in financial transactions [Adedoyin et al.].

They feature advanced trends in integrating CBR with knowledge discovery to define features, feature weights, and goals in recommender systems, machine learning algorithms, process mining, and stream mining. They exemplify how knowledge discovery helps advance CBR in its reasoning steps, with an emphasis on the retrieval and retain steps, as well as in its methodology, through evaluation.

These papers report on the research and experience of seventeen authors working in four different countries on a wide range of problems and projects, and illustrate some of the major trends of current research. Overall, they represent an excellent sample of synergies between CBR and knowledge discovery, and promise to spark very interesting discussions and interaction among CBR and knowledge discovery researchers.

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