ICCBR 2016



Atlanta, Georgia, US

31 October – 2November 2016

The Twenty-Forth International Conference on Case-Based Reasoning
(ICCBR 2016)

Workshop Proceedings

Alexandra Coman & Stelios Kapetanakis (Editors)

Preface

We are pleased to present the Workshop Proceedings of the Twenty-Fourth International Conference on Case-Based Reasoning (ICCBR-16), held on October 31^{st} - November 2^{nd} , 2016 in Atlanta, Georgia, USA.

Our program this year includes new entries in two ongoing series of workshops (Synergies Between CBR and Knowledge Discovery and Reasoning About Time in CBR, with which the workshop on Process-Oriented CBR has merged) as well as a new workshop on Computational Analogy intended to reaffirm and strengthen the ties between the CBR and Computational Analogy research communities. This volume also includes proceedings of two events that have become ICCBR traditions: the Doctoral Consortium and the Computer Cooking Contest.

We would like to thank all who have contributed their time and effort to this year's workshop program: the workshop and Doctoral Consortium organizers (Kerstin Bach, Isabelle Bichindaritz, Joseph Blass, Sarah Jane Delany, Tesca Fitzgerald, Katherine Fu, Odd Erik Gundersen, Cindy Marling, Mirjam Minor, Stefania Montani, Nadia A. Najjar, Santiago Ontañón, Miltos Petridis, Marc Pickett, Henri Prade, and David C. Wilson), the workshop program committee members, and all workshop paper authors. We are also thankful to the organizers of the ICCBR conference: program chair Ashok Goel, program co-chairs Belen Diaz-Agudo and Thomas Roth-Berghofer, publicity chairs Santiago Ontañón and Swaroop Vattam, local chairs Stephen Lee-Urban and Elizabeth Whitaker, and webmaster Jose Delgado. We would also like to express our gratitude to David Aha for his continuous support.

We hope that you enjoy this year's workshop papers and presentations, and find lots of research inspiration and collaboration opportunities in Atlanta!

Atlanta, GA, USA October 2016

Alexandra Coman Stelios Kapetanakis

Table of Contents

Workshop on Computational Analogy

Preface	.10
Joseph Blass, Tesca Fitzgerald,Katherine Fu, Santiago Ontaňón, Marc Pickett, Henri Prade	
Elements of a Data-Driven Approach to Adaptation	.12
Natural Language Instruction for Analogical Reasoning: An Initial Report	.21
Scaling up Analogy with Crowdsourcing and Machine Learning	31
LDA v. LSA: A Comparison of Two Computational Text Analysis Tools for the Functional Categorizat	
Toni Cvitanic, Bumsoo Lee, Hyeon Ik Song, Katherine Fu, David Rosen	
Morphological Predictability of Unseen Words Using Computational Analogy Rashel Fam, Yves Lepage	.51
Abstraction for Analogical Reasoning in Robotic Agents Tesca Fitzgerald, Andrea Thomaz, Ashok Goel	61
Solving Analogical Equations Between Strings of Symbols Using Neural Networks Vivatchai Kaveeta, Yves Lepage	57
Efficient Identification of Formal Analogies	.77
Reducing Noise Sensitivity of Formal Analogical Reasoning Applied to Language Transfer Vincent Letard, Gabriel Illouz, Sophie Rosset	87
Analogies from Function, Flow and Performance Metrics	.98
Automatic Generation of Analogous Problems to Help Resolving Misconceptions in an Intelligent Tu System for Written Subtraction1 Christina Zeller, Ute Schmid	
Workshop on Reasoning about Time in CBR	
Preface1 Odd Erik Gundersen, Kerstin Bach	L 20
Oud Link Guildersell, Kersuit buch	

Evaluating Distributed Methods for CBR Systems for Monitoring Business Process Workflows Ioannis Agorgianitis, Miltos Petridis, Stelios Kapetanakis, Andrew Fish	122
Exploiting Time Series Data for Task Prediction and Diagnosis in an Intelligent Guidance Systen Hayley Borck, Steven Johnston, Mary Southern, Mark Boddy	ı132
Case Representation and Adaptation for Short-Term Load Forecasting at a Container Terminal Norman Ihle	142
Case-Based Comparison of Career Trajectories Kedma Duarte, Rosina O. Weber, Roberto C. S. Pacheco	152
Diagnosing Root Causes and Generating Graphical Explanations by Integrating Temporal Reasoning and CBR	
Challenges for the Similarity-Based Comparison of Human Physical Activities Using Time Series Data Tomasz Szczepanski, Kerstin Bach, Agnar Aamodt	
Workshop on Synergies between CBR and Knowledge Discovery	190
Isabelle Bichindaritz, Cindy Marling, Stefania Montani	100
Evaluating Case-Based Reasoning Knowledge Discovery in Fraud Detection	182
A Context-aware Miner for Medical Processes	192
Goal Trajectories for Knowledge Investigations	
Learning a Region of User's Preference for Product Recommendation	202

Computer Cooking Contest

Preface	234
Nadia A Najjar, David C Wilson	
Meal Planning from an Abstraction Hierarchy of Menus and Recipes- Adapting Research from Categorization and Problem Solving	
The Doctoral Consortium	
Preface	245
Sarah Jane Delany, Stefania Montani	
Distributed Case-based Support for the Architectural Conceptualization Phase	246
A Framework for Interactive Mining and Retrieval from Process Traces	252
Short-Term Load Forecasting Methods for Maritime Container Terminals	257
Knowledge Modelling and Comparison of Cyanide-free Gold Leaching Processes	262
Episodic Memory in a Cognitive Model	267
Workflow Modelling Assistance by Means of Process-oriented Case-based Reasoning	272
Prediction and Explanation by Combined Model-Based and Case-Based Reasoning Hoda Nikpour	277
Similarity-based Approaches to Learning from Demonstration Brandon Packard	282
Feature-Centric Approaches to Case-Base Maintenance Brian Schack	.287
Automated Similarity Modeling for Real-World Applications	.292