

**Fachbeitrag**

- ▶ **Case-Based Reasoning**  
Introduction and Recent Developments  
Ralph Bergmann, Klaus-Dieter Althoff, Mirjam Minor,  
Meike Reichle, Kerstin Bach
- ▶ **Role and Significance of Case-based Reasoning in the Health Sciences**  
Isabelle Bichindaritz
- ▶ **On Reusing Other People's Experiences**  
Enric Plaza
- ▶ **Supporting Case-Based Retrieval by Similarity Skylines**  
Basic Concepts and Extensions  
Eyke Hüllermeier, Ilya Vladimirovskiy,  
Belén Prados Suárez, Eva Stauch
- Die Entwicklung der Disziplin in Deutschland**  
Jörg Siekmann

**Projekt**

- ▶ **CookIIS – Competing in the First Computer Cooking Contest**  
Alexandre Hanft, Norman Ihle, Kerstin Bach,  
Régis Newo
- ▶ **Rapid Prototyping of CBR Applications**  
with the Open Source Tool myCBR  
Armin Stahl, Thomas R. Roth-Berghofer
- Yuragi: Ausnutzung von Fluktuation am Beispiel eines komplexen Roboterarms**  
Max Braun, Yoshio Matsumoto, Hiroshi Ishiguro
- Perception System for Naturally Interacting Humanoid Robots**  
Karsten Berns, Norbert Schmitz

**Interview**

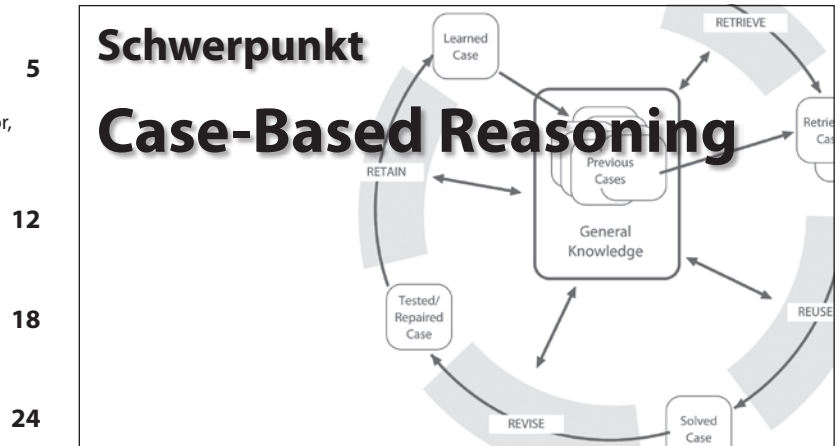
- ▶ **with Pádraig Cunningham and Barry Smyth**

**Dissertation**

- ▶ **Reasoning with Generalized Cases**  
Alexander Tartakovski
- Erschließung des unberücksichtigten Kontexts formalisierten Wissens**  
Stefan Mandl

**Rezension**

- ▶ **Case-Based Approximate Reasoning**  
Eyke Hüllermeier, Series: Theory and Decision Library B,  
David W. Aha



**Seite 12: Role and Significance of Case-based Reasoning in the Health Sciences**

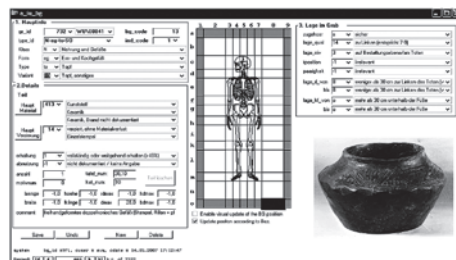
Computational intelligence researchers have often applied their systems and methods to health sciences domains. Some of the most famous expert systems were developed in these domains. This particular interest also holds for case-based reasoning (CBR). This article first discusses the motivations for applying CBR to health sciences domains and the characteristics of these domains. It then provides a survey of CBR systems in health sciences from its history to the impact on case-based reasoning research and on the application domains. Finally, the article presents a comparison between case-based reasoning and statistics in health sciences domains. As a matter of fact, both

Rank	Category (linked to category information)	Total Cites	Median Impact Factor	# Journals	Articles
1	COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE	110705	0.930	85	5298
2	COMPUTER SCIENCE, CYBERNETICS	12031	0.859	18	894
3	COMPUTER SCIENCE, HARDWARE & ARCHITECTURE	52929	0.694	44	3245
4	COMPUTER SCIENCE, INFORMATION SYSTEMS	78203	0.830	87	6379
5	COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS	121793	0.862	87	7531
6	COMPUTER SCIENCE, SOFTWARE ENGINEERING	63797	0.782	82	4936
7	COMPUTER SCIENCE, THEORY & METHODS	76451	0.840	75	4372

statistics and case-based reasoning are data analysis methods, and both deal with variation inherent to health sciences domains.

**Seite 24: Supporting Case-Based Retrieval by Similarity Skylines**

Conventional approaches to similarity search and case-based retrieval, such as nearest neighbor search, do require the specification of a global similarity measure which is typically expressed as an aggregation of local measures pertaining to different aspects of a case. Since the proper aggregation of local measures is often quite difficult, we propose a novel concept called similarity skyline. Roughly speaking, the similarity skyline of a case base is defined by the subset of cases that are most similar to a given query in a Pareto sense. Thus, the idea is to proceed from a d-dimensional comparison between cases in terms of d (local) distance measures and to identify those cases that are maximally similar in the sense of the Pareto dominance relation.



**Seite 30: CookIIS – Competing in the First Computer Cooking Contest**  
 This article gives a brief introduction to the 1st Computer Cooking Contest



and presents one of the participating systems in more detail. The 1st Computer Cooking Contest was co-located at the ECCBR'08 where six European teams competed in a main compulsory task and two challenges. The creation of meals based on given criteria served as application domain and the competition rounds dealt with everyday questions like „What should I cook tonight?“

**Seite 38: Interview with Pádraig Cunningham and Barry Smyth**



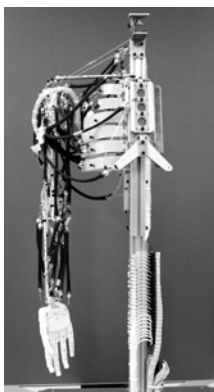
Pádraig Cunningham is Professor of Knowledge and Data Engineering in the School of Computer Science and Informatics at University College Dublin. He has published over 140 peer-reviewed papers in the general area of applied AI, focusing on machine learning and case-based reasoning systems for decision support in engineering, e-commerce, finance and medicine.



Barry Smyth holds the Digital Chair of Computer Science in the School of Computer Science and Informatics. Barry's research interests cover many aspects of artificial intelligence and information retrieval, including case-based reasoning, recommender systems, user modelling, and personalized user interfaces. He has published more than 300 peer-reviewed articles and has received a number of awards for his research.

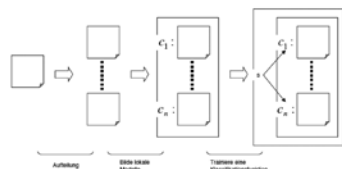
**Seite 53: Yuragi: Ausnutzung von Fluktuation am Beispiel eines komplexen Roboterarms**

„Yuragi“ ist das japanische Wort für Fluktuation. Im gleichnamigen interdisziplinären Projekt an der Osaka University werden natürliche biologische Prozesse, die Fluktuation ausnutzen, nachgeahmt und für technische Anwendungen nutzbar gemacht. Aus dem Teilbereich Robotik wird hier exemplarisch ein junges Projekt vorgestellt, in dem ein einfaches, biologisch inspiriertes Modell zur Steuerung eines komplexen Roboterarms genutzt wird.



**Seite 60: Erschließung des unberücksichtigten Kontexts formalisierten Wissens**

In der Dissertation wird die generelle Frage nach dem Einfluss nicht-formalisierter Wissens auf formalisiertes Wissen gestellt. Ausgehend von prinzipiellen Überlegungen zur Erschließung unberücksichtigten Kontexts wird ein Vorschlag zur automatischen Handhabung gemacht.



**Service**

► **Case-Based Reasoning – Service** 46  
 Ralph Bergmann, Mirjam Minor, Klaus-Dieter Althoff

**Tagungsbericht**

**ICCL Summer School 2008** 63  
 Computational Logic and Cognitive Science  
 Jürgen Bock

**KogWis'08** 64  
 9. Conference of the German Cognitive Science Society  
 Holger Schultheis

**MATES 2008** 65  
 The 6th German Conference on Multiagent System Technologies  
 Kerstin Bach, Meike Reichle

**WLP 2008** 66  
 22nd Workshop on (Constraint) Logic Programming  
 Sibylle Schwarz

**News/Ankündigung**

**KI 2009** 67  
 32nd Annual Conference on Artificial Intelligence  
 Paderborn, September 15–18, 2009

**MATES 2009** 68  
 7th German Conference on Multi-Agent System Technologies, September 9-11, 2009,  
 University of Hamburg, Germany

**Umfrage zur GI-Fachgruppe Verteilte KI** 69

**Themenvorschau** 71

Editorial	1
Gasteditorial	4
Impressum	70
Themenvorschau	71

Artikel zum Schwerpunkt sind mit einem ► gekennzeichnet.