



# Computational Models for Argumentation in MAS

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# Introduction To Computational Models Of Argumentation

**B. Verheij, S. Szeider, S. Woltran**



## **Introduction To Computational Models Of Argumentation:**

**Computational Models of Argument** P. Baroni, T.F. Gordon, T. Scheffler, 2016-09-02 Research into computational models of argument is a rich interdisciplinary field involving the study of natural artificial and theoretical argumentation and requiring openness to interactions with a variety of disciplines ranging from philosophy and cognitive science to formal logic and graph theory The ultimate aim is to support the development of computer based systems able to engage in argumentation related activities either with human users or among themselves This book presents the proceedings of the sixth biennial International Conference on Computational Models of Argument COMMA 2016 held in Potsdam Germany on 12-16 September The aim of the COMMA conferences is to bring together researchers interested in computational models of argument and the representation of argumentation structures in natural language texts with special attention to contributions concerning emerging trends and the development of new connections with other areas The book contains the 25 full papers 17 short papers and 10 demonstration abstracts presented at the conference together with 3 invited talks Subjects covered include abstract bipolar and structured argumentation quantitative approaches and their connections with formalisms like Bayesian networks and fuzzy logic multi agent scenarios algorithms and solvers and mining arguments in text dialogue and social media The book provides an overview of current research and developments in the field of computational models of argument and will be essential reading for all those with an interest in the field

**Computational Models of Argument** S. Modgil, K. Budzyska, J. Lawrence, 2018-09-06 In its classical form the study of argumentation focuses on human oriented uses of argument such as whether an argument is legitimate or flawed engagement in debate or the rhetorical aspects of argumentation In recent decades however the study of logic and computational models of argumentation has emerged as a growing sub area of AI This book presents the Seventh International Conference on Computational Models of Argument COMMA 18 held in Warsaw Poland from 12 to 14 September 2018 Since its inception in 2006 the conference and its related activities have developed alongside the steady growth of interest in computational argumentation worldwide and the selection of 25 full papers and 17 short papers out of a total of 70 submissions and 15 demonstration abstracts included here reflect the broad multidisciplinary nature of argumentation and the increasing body of work which establishes the relevance of computational models to various disciplines and real world applications Subjects covered include algorithm development innovative applications argument mining argumentation based models of dialogue abstract argument frameworks and structured argumentation Representing an overview of current developments in the field this book will appeal to all those with an interest in computational models of argument

Computational Models of Argument Francesco Santini, Carlo Taticchi, 2020-09-15 The investigation of computational models of argument is a rich and fascinating interdisciplinary research field with two ultimate aims the theoretical goal of understanding argumentation as a cognitive phenomenon by modeling it in computer programs and the practical goal of supporting the development of

computer based systems able to engage in argumentation related activities with human users or among themselves The biennial International Conferences on Computational Models of Argument COMMA provide a dedicated forum for the presentation and discussion of the latest advancements in the field and cover both basic research and innovative applications This book presents the proceedings of COMMA 2020 Due to the Covid 19 pandemic COMMA 2020 was held as an online event on the originally scheduled dates of 8 11 September 2020 organised by the University of Perugia Italy The book includes 28 full papers and 13 short papers selected from a total of 78 submissions the abstracts of 3 invited talks and 13 demonstration abstracts The interdisciplinary nature of the field is reflected and contributions cover both theory and practice Theoretical contributions include new formal models the study of formal or computational properties of models designs for implemented systems and experimental research Practical papers include applications to medicine law and criminal investigation chatbots and online product reviews The argument mining trend from previous COMMA s is continued while an emerging trend this year is the use of argumentation for explainable AI The book provided an overview of the latest work on computational models of argument and will be of interest to all those working in the field

**Computational Models of Argument** Chris Reed, Matthias Thimm, Tjitze Rienstra, 2024-09-15 This book presents the proceedings of COMMA 2024 the 10th biennial International Conference on Computational Models of Argument held from 18 to 20 September 2024 in Hagen Germany The COMMA conference series provides a dedicated forum for the presentation and discussion of the latest advancements in this interdisciplinary field covering basic research systems and innovative applications and nurturing the steady growth of interest in computational argumentation research worldwide A total of 63 submissions was received for the conference and after a thorough review process 26 were accepted as full papers with a further 12 accepted as demos accompanied by an extended abstract and 2 as full papers with accompanying demo resulting in an acceptance rate of 53% for full papers and 63% for papers and demo abstracts combined In addition to these 40 papers extended abstracts of the 3 invited talks are also included here Semantics in Argumentation Classifications and Challenges by Leila Amgoud Expanding the Scope of Bayesian Argumentation by Ulrike Hahn and The Long Road to Trustworthy Natural Language Argumentation by Serena Villata The book provides a fascinating overview of current research and innovations and will be of interest to all those working in the field

**Computational Models of Argument** P.E. Dunne, T.J.M. Bench-Capon, 2006-08-25 Argumentation is an important sub discipline of Artificial Intelligence The process of interpreting and exploiting classical treatments of Argumentation Theory in effective computational terms has led to a rich interchange of ideas among researchers This book offers an overview of the research issues and concerns within this field

*Computational Models of Argument* B. Verheij, S. Szeider, S. Woltran, 2012-09-04 The subject of argumentation has been studied since ancient times but it has seen major innovations since the advent of the computer age Software already exists which can create and evaluate arguments in high stake situations such as medical diagnosis and criminal investigation formal systems can help us

appreciate the role of the value judgments which underlie opposing positions and it is even possible to enter into argumentative dialogues as if playing a computer game This book presents the 28 full papers 17 short papers and a number of system demonstrations described in an extended abstract from the 2012 biennial Computational Models of Argument COMMA conference held in Vienna Austria Papers by the invited speakers Professor Trevor Bench Capon Professor Erik Krabbe and Professor Keith Stenning are also included This year for the first time COMMA invited the submission of papers for an innovative applications track and those which were accepted for presentation are included in this volume

Argumentation can be studied from many angles including the artificial natural and theoretical systems perspective Presentations at the 2012 conference addressed the subject from these perspectives and many more Computational Models of Argument P. E. Dunne,2006 Argumentation is an important sub discipline of Artificial Intelligence The process of interpreting and exploiting classical treatments of Argumentation Theory in effective computational terms has led to a rich interchange of ideas among researchers This book offers an overview of the research issues and concerns within this field

*Computational Models of Argument* S. Parsons,N. Oren,C. Reed,2014-09-10 Argumentation which has long been a topic of study in philosophy has become a well established aspect of computing science in the last 20 years This book presents the proceedings of the fifth conference on Computational Models of Argument COMMA held in Pitlochry Scotland in September 2014 Work on argumentation is broad but the COMMA community is distinguished by virtue of its focus on the computational and mathematical aspects of the subject This focus aims to ensure that methods are sound that they identify arguments that are correct in some sense and provide an unambiguous specification for implementation producing programs that reason in the correct way and building systems capable of natural argument or of recognizing argument The book contains 24 long papers and 18 short papers and the 21 demonstrations presented at the conference are represented in the proceedings either by an extended abstract or by association with another paper The book will be of interest to all those whose work involves argumentation as it relates to artificial intelligence **Argumentation Machines** C. Reed,T.J. Norman,2013-03-09

In the late 1990s AI witnessed an increasing use of the term argumentation within its bounds in natural language processing in user interface design in logic programming and nonmonotonic reasoning in AI s interface with the legal community and in the newly emerging field of multi agent systems It seemed to me that many of these uses of argumentation were inspired by of ten inspired guesswork and that a great majority of the AI community were unaware that there was a maturing rich field of research in Argumentation Theory and Critical Thinking and Informal Logic that had been steadily re building a scholarly approach to the area over the previous twenty years or so Argumentation Theory on its side was developing theories and approaches that many in the field felt could have a role more widely in research and soci ety but were for the most part unaware that AI was one of the best candidates for such application **Computational Models of Argument** Francesca Toni,Sylwia Polberg,Richard Booth,Martin Caminada,Hiroyuki Kido,2022-09-15 Argumentation has traditionally been studied

across a number of fields notably philosophy cognitive science linguistics and jurisprudence The study of computational models of argumentation is a more recent endeavor bringing together researchers from traditional fields and computer science and engineering within a rich interdisciplinary matrix Computational models of argumentation have been identified and used since the 1980s and more recently an important role for argumentation in leading to principled decisions has emerged in several settings This book presents the proceedings of COMMA 2022 the 9th International Conference on Computational Models of Argument held in Cardiff Wales United Kingdom during 14-16 September 2022 The book contains 27 regular papers and 16 demo papers from a total of 75 submissions as well as 3 invited talks from Prof Paul Dunne University of Liverpool Prof Iryna Gurevych TU Darmstadt and Prof Antonis Kakas University of Cyprus which reflect the diverse nature of the field Papers are a mix of theoretical and practical contributions theoretical contributions include new formal models the study of formal or computational properties of models design for implemented systems and experimental research practical papers include applications to law machine learning and explainability Abstract and structured accounts of argumentation are covered as are relations between different accounts Many papers focus on the evaluation of arguments or their conclusions given a body of arguments with a continuation of a recent trend to study gradual or probabilistic notions of evaluation The book offers an overview of recent and current research and will be of interest to all those working with computational models of argumentation

*Flexible Query Answering Systems* Alfredo Cuzzocrea, Sergio Greco, Henrik Legind Larsen, Domenico Saccà, Troels Andreasen, Henning Christiansen, 2019-09-11 This book constitutes the refereed proceedings of the 13th International Conference on Flexible Query Answering Systems FQAS 2019 held in Amantea Italy in July 2019 The 27 full papers and 10 short papers presented were carefully reviewed and selected from 43 submissions The papers present emerging research trends with a special focus on flexible querying and analytics for smart cities and smart societies in the age of big data They are organized in the following topical sections flexible database management and querying ontologies and knowledge bases social networks and social media argumentation based query answering data mining and knowledge discovery advanced flexible query answering methodologies and techniques flexible query answering methods and techniques flexible intelligent information oriented and network oriented approaches big data veracity and soft computing flexibility in tools and systems and miscellanea

*Computational Models of Argument* Philippe Besnard, Sylvie Doutre, Anthony Hunter, 2008 Focuses on the aim to develop software tools to assist users in constructing and evaluating arguments and counterarguments and or to develop automated systems for constructing and evaluating arguments and counterarguments This book includes articles which provide a snapshot of research questions in the area of computational models of argument

*Scalable Uncertainty Management* Nahla Ben Amor, Benjamin Quost, Martin Theobald, 2019-12-02 This book constitutes the refereed proceedings of the 13th International Conference on Scalable Uncertainty Management SUM 2019 which was held in Compiègne France in December 2019 The 25 full 4 short 4 tutorial 2 invited keynote papers

presented in this volume were carefully reviewed and selected from 44 submissions The conference is dedicated to the management of large amounts of complex uncertain incomplete or inconsistent information New approaches have been developed on imprecise probabilities fuzzy set theory rough set theory ordinal uncertainty representations or even purely qualitative models Computational Models of Argument Pietro Baroni,2010 Presents papers from the Third Conference on Computational Models of Argument held in September 2010 in Desanzano del Garda Italy Providing a view of this important research field this book is of interest to those involved in the use and development of artificial intelligence systems

Proceedings of the 13th Conference on Computational Linguistics - Volume 1 Hans Karlgren,1990 Computational Models of Argument ,2020 **Proceedings of the Twenty-third AAI Conference on Artificial Intelligence and the Twentieth Innovative Applications of Artificial Intelligence Conference** ,2008 Encyclopedia of Library and Information Science Allen Kent,Harold Lancour,William Z. Nasri,Jay Elwood Daily,1968 Vol 73 index to v 48 72

**Computational Models of Argument** ,2014 Annotation Proceedings of COMMA 2014 Argumentation which has long been a topic of study in philosophy has become a well established aspect of computing science in the last 20 years This book presents the proceedings of the fifth conference on Computational Models of Argument COMMA held in Pitlochry Scotland in September 2014 Work on argumentation is broad but the COMMA community is distinguished by virtue of its focus on the computational and mathematical aspects of the subject This focus aims to ensure that methods are sound that they identify arguments that are correct in some sense and provide an unambiguous specification for *COLING-90* Hans Karlgren,1990

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