

Algorithmic Learning Theory

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Algorithmic Learning Theory - Nader H. Bshouty 2012-09-15

This book constitutes the refereed proceedings of the 23rd International Conference on Algorithmic Learning Theory, ALT 2012, held in Lyon, France, in October 2012. The conference was co-located and held in parallel with the 15th International Conference on Discovery Science, DS 2012. The 23 full papers and 5 invited talks presented were carefully reviewed and selected from 47 submissions. The papers are organized in topical sections on inductive inference, teaching and PAC learning, statistical learning theory and classification, relations between models and data, bandit problems, online prediction of individual sequences, and other models of online learning.

Algorithmic Learning Theory II - S. Arikawa 1992

Algorithmic Learning Theory - Klaus P. Jantke 1993-10-20

Annotation This volume contains the papers that were presented at the Third Workshop on Algorithmic Learning Theory, held in Tokyo in October 1992. In addition to 3 invited papers, the volume contains 19 papers accepted for presentation, selected from 29 submitted extended abstracts. The ALT workshops have been held annually since 1990 and are organized and sponsored by the Japanese Society for Artificial Intelligence. The main objective of these workshops is to provide an open

forum for discussions and exchanges of ideas between researchers from various backgrounds in this emerging, interdisciplinary field of learning theory. The volume is organized into parts on learning via query, neural networks, inductive inference, analogical reasoning, and approximate learning.

Algorithmic Learning Theory - ALT '92 - Shuji Doshita 1993-10-20

This volume contains the papers that were presented at the Third Workshop on Algorithmic Learning Theory, held in Tokyo in October 1992. In addition to 3 invited papers, the volume contains 19 papers accepted for presentation, selected from 29 submitted extended abstracts. The ALT workshops have been held annually since 1990 and are organized and sponsored by the Japanese Society for Artificial Intelligence. The main objective of these workshops is to provide an open forum for discussions and exchanges of ideas between researchers from various backgrounds in this emerging, interdisciplinary field of learning theory. The volume is organized into parts on learning via query, neural networks, inductive inference, analogical reasoning, and approximate learning.

Algorithmic Learning Theory - José L. Balcázar 2006-10-05

This book constitutes the refereed proceedings of the 17th International Conference on Algorithmic Learning Theory, ALT 2006, held in

Barcelona, Spain in October 2006, colocated with the 9th International Conference on Discovery Science, DS 2006. The 24 revised full papers presented together with the abstracts of five invited papers were carefully reviewed and selected from 53 submissions. The papers are dedicated to the theoretical foundations of machine learning.

Algorithmic Learning Theory - Setsuo Arikawa 1990

Algorithmic Learning Theory - Marcus Hutter 2010-09-27

This volume contains the papers presented at the 21st International Conference on Algorithmic Learning Theory (ALT 2010), which was held in Canberra, Australia, October 6-8, 2010. The conference was colocated with the 13th International Conference on Discovery Science (DS 2010) and with the Machine Learning Summer School, which was held just before ALT 2010. The technical program of ALT 2010, contained 26 papers selected from 44 submissions and 7 invited talks. The invited talks were presented in joint sessions of both conferences. ALT 2010 was dedicated to the theoretical foundations of machine learning and took place on the campus of the Australian National University, Canberra, Australia. ALT provides a forum for high-quality talks with a strong theoretical background and scientific interchange in areas such as inductive inference, universal prediction, teaching models, grammatical inference, formal languages, inductive logic programming, query learning, complexity of learning, on-line learning and relative loss bounds, semi-supervised and unsupervised learning, clustering, active learning, statistical learning, support vector machines, Vapnik-Chervonenkis dimension, probably approximately correct learning, Bayesian and causal networks, boosting and bagging, information-based methods, minimum description length, Kolmogorov complexity, kernels, graph learning, decision tree methods, Markov decision processes, reinforcement learning, and real-world applications of algorithmic learning theory. DS 2010 was the 13th International Conference on Discovery Science and focused on the development and analysis of methods for intelligent data analysis,

knowledge discovery and machine learning, as well as their application to scientific knowledge discovery. As is the tradition, it was co-located and held in parallel with Algorithmic Learning Theory.

Algorithmic Learning Theory - Ricard Gavaldà 2003-10-07

This book constitutes the refereed proceedings of the 14th International Conference on Algorithmic Learning Theory, ALT 2003, held in Sapporo, Japan in October 2003. The 19 revised full papers presented together with 2 invited papers and abstracts of 3 invited talks were carefully reviewed and selected from 37 submissions. The papers are organized in topical sections on inductive inference, learning and information extraction, learning with queries, learning with non-linear optimization, learning from random examples, and online prediction.

Algorithmic Learning Theory - Marcus Hutter 2007-09-17

This book constitutes the refereed proceedings of the 18th International Conference on Algorithmic Learning Theory, ALT 2007, held in Sendai, Japan, October 1-4, 2007, co-located with the 10th International Conference on Discovery Science, DS 2007. The 25 revised full papers presented together with the abstracts of five invited papers were carefully reviewed and selected from 50 submissions. They are dedicated to the theoretical foundations of machine learning.

Algorithmic Learning Theory - Michael M. Richter 1998

This book constitutes the refereed proceedings of the 9th International Conference on Algorithmic Learning Theory, ALT'98, held in Otzenhausen, Germany, in October 1998. The 26 revised full papers presented were carefully reviewed and selected from a total of 34 submissions. Also included are three invited papers and an introduction by the volume editors. The papers are organized in sections on inductive logic programming and data mining, inductive inference, learning via queries, prediction algorithms, inductive logic programming, learning formal languages, and miscellaneous.

Algorithmic Learning Theory - K. FURUKAWA 1993

Algorithmic Learning Theory - Setsuo Arikawa 1994-09-28

This volume presents the proceedings of the Fourth International

Workshop on Analogical and Inductive Inference (AII '94) and the Fifth International Workshop on Algorithmic Learning Theory (ALT '94), held jointly at Reinhardsbrunn Castle, Germany in October 1994. (In future the AII and ALT workshops will be amalgamated and held under the single title of Algorithmic Learning Theory.) The book contains revised versions of 45 papers on all current aspects of computational learning theory; in particular, algorithmic learning, machine learning, analogical inference, inductive logic, case-based reasoning, and formal language learning are addressed.

Algorithmic Learning Theory - Ricard Gavaldà 2009-09-21

This book constitutes the refereed proceedings of the 20th International Conference on Algorithmic Learning Theory, ALT 2009, held in Porto, Portugal, in October 2009, co-located with the 12th International Conference on Discovery Science, DS 2009. The 26 revised full papers presented together with the abstracts of 5 invited talks were carefully reviewed and selected from 60 submissions. The papers are divided into topical sections of papers on online learning, learning graphs, active learning and query learning, statistical learning, inductive inference, and semisupervised and unsupervised learning. The volume also contains abstracts of the invited talks: Sanjoy Dasgupta, The Two Faces of Active Learning; Hector Geffner, Inference and Learning in Planning; Jiawei Han, Mining Heterogeneous; Information Networks By Exploring the Power of Links, Yishay Mansour, Learning and Domain Adaptation; Fernando C.N. Pereira, Learning on the Web.

Algorithmic Learning Theory - Marcus Hutter 2007-10-11

This book constitutes the refereed proceedings of the 18th International Conference on Algorithmic Learning Theory, ALT 2007, held in Sendai, Japan, October 1-4, 2007, co-located with the 10th International Conference on Discovery Science, DS 2007. The 25 revised full papers presented together with the abstracts of five invited papers were carefully reviewed and selected from 50 submissions. They are dedicated to the theoretical foundations of machine learning.

Algorithmic Learning Theory - Ronald Ortner 2016-09-21

This book constitutes the refereed proceedings of the 27th International

Conference on Algorithmic Learning Theory, ALT 2016, held in Bari, Italy, in October 2016, co-located with the 19th International Conference on Discovery Science, DS 2016. The 24 regular papers presented in this volume were carefully reviewed and selected from 45 submissions. In addition the book contains 5 abstracts of invited talks. The papers are organized in topical sections named: error bounds, sample compression schemes; statistical learning, theory, evolvability; exact and interactive learning; complexity of teaching models; inductive inference; online learning; bandits and reinforcement learning; and clustering.

Algorithmic Learning Theory - Nicolò Cesa-Bianchi 2002-11-13

This volume contains the papers presented at the 13th Annual Conference on Algorithmic Learning Theory (ALT 2002), which was held in Luběck (Germany) during November 24–26, 2002. The main objective of the conference was to provide an interdisciplinary forum discussing the theoretical foundations of machine learning as well as their relevance to practical applications. The conference was colocated with the Fifth International Conference on Discovery Science (DS 2002). The volume includes 26 technical contributions which were selected by the program committee from 49 submissions. It also contains the ALT 2002 invited talks presented by Susumu Hayashi (Kobe University, Japan) on “Mathematics Based on Learning”, by John Shawe-Taylor (Royal Holloway University of London, UK) on “On the Eigenspectrum of the Gram Matrix and Its Relationship to the Operator Eigenspectrum”, and by Ian H. Witten (University of Waikato, New Zealand) on “Learning Structure from Sequences, with Applications in a Digital Library” (joint invited talk with DS 2002). Furthermore, this volume includes abstracts of the invited talks for DS 2002 presented by Gerhard Widmer (Austrian Research Institute for Artificial Intelligence, Vienna) on “In Search of the Horowitz Factor: Interim Report on a Musical Discovery Project” and by Rudolf Kruse (University of Magdeburg, Germany) on “Data Mining with Graphical Models”. The complete versions of these papers are published in the DS 2002 proceedings (Lecture Notes in Artificial Intelligence, Vol. 2534). ALT has been awarding the E.

Algorithmic Learning Theory - Kamalika Chaudhuri 2015-10-04

This book constitutes the proceedings of the 26th International Conference on Algorithmic Learning Theory, ALT 2015, held in Banff, AB, Canada, in October 2015, and co-located with the 18th International Conference on Discovery Science, DS 2015. The 23 full papers presented in this volume were carefully reviewed and selected from 44 submissions. In addition the book contains 2 full papers summarizing the invited talks and 2 abstracts of invited talks. The papers are organized in topical sections named: inductive inference; learning from queries, teaching complexity; computational learning theory and algorithms; statistical learning theory and sample complexity; online learning, stochastic optimization; and Kolmogorov complexity, algorithmic information theory.

Algorithmic Learning Theory - José L. Balcázar 2006-09-27

This book constitutes the refereed proceedings of the 17th International Conference on Algorithmic Learning Theory, ALT 2006, held in Barcelona, Spain in October 2006, colocated with the 9th International Conference on Discovery Science, DS 2006. The 24 revised full papers presented together with the abstracts of five invited papers were carefully reviewed and selected from 53 submissions. The papers are dedicated to the theoretical foundations of machine learning.

Algorithmic Learning Theory - Nicolò Cesa-Bianchi 2002-11-13

This volume contains the papers presented at the 13th Annual Conference on Algorithmic Learning Theory (ALT 2002), which was held in Lubbeck (Germany) during November 24-26, 2002. The main objective of the conference was to provide an interdisciplinary forum discussing the theoretical foundations of machine learning as well as their relevance to practical applications. The conference was colocated with the Fifth International Conference on Discovery Science (DS 2002). The volume includes 26 technical contributions which were selected by the program committee from 49 submissions. It also contains the ALT 2002 invited talks presented by Susumu Hayashi (Kobe University, Japan) on "Mathematics Based on Learning", by John Shawe-Taylor (Royal Holloway University of London, UK) on "On the Eigenspectrum of the Gram Matrix and Its Relationship to the Operator Eigenspectrum", and

by Ian H. Witten (University of Waikato, New Zealand) on "Learning Structure from Sequences, with Applications in a Digital Library" (joint invited talk with DS 2002). Furthermore, this volume includes abstracts of the invited talks for DS 2002 presented by Gerhard Widmer (Austrian Research Institute for Artificial Intelligence, Vienna) on "In Search of the Horowitz Factor: Interim Report on a Musical Discovery Project" and by Rudolf Kruse (University of Magdeburg, Germany) on "Data Mining with Graphical Models". The complete versions of these papers are published in the DS 2002 proceedings (Lecture Notes in Artificial Intelligence, Vol. 2534). ALT has been awarding the E.

Algorithmic Learning Theory - Sanjay Jain 2005-10-11

Algorithmic Learning Theory - Naoki Abe 2003-06-30

This volume contains the papers presented at the 12th Annual Conference on Algorithmic Learning Theory (ALT 2001), which was held in Washington DC, USA, during November 25-28, 2001. The main objective of the conference is to provide an inter-disciplinary forum for the discussion of theoretical foundations of machine learning, as well as their relevance to practical applications. The conference was co-located with the Fourth International Conference on Discovery Science (DS 2001). The volume includes 21 contributed papers. These papers were selected by the program committee from 42 submissions based on clarity, significance, originality, and relevance to theory and practice of machine learning. Additionally, the volume contains the invited talks of ALT 2001 presented by Dana Angluin of Yale University, USA, Paul R. Cohen of the University of Massachusetts at Amherst, USA, and the joint invited talk for ALT 2001 and DS 2001 presented by Setsuo Arikawa of Kyushu University, Japan. Furthermore, this volume includes abstracts of the invited talks for DS 2001 presented by Lindley Darden and Ben Shneiderman both of the University of Maryland at College Park, USA. The complete versions of these papers are published in the DS 2001 proceedings (Lecture Notes in Artificial Intelligence Vol. 2226).

Understanding Machine Learning - Shai Shalev-Shwartz 2014-05-19

Introduces machine learning and its algorithmic paradigms, explaining

the principles behind automated learning approaches and the considerations underlying their usage.

Algorithmic Learning Theory - Sanjay Jain 2005-09-26

This book constitutes the refereed proceedings of the 16th International Conference on Algorithmic Learning Theory, ALT 2005, held in Singapore in October 2005. The 30 revised full papers presented together with 5 invited papers and an introduction by the editors were carefully reviewed and selected from 98 submissions. The papers are organized in topical sections on kernel-based learning, bayesian and statistical models, PAC-learning, query-learning, inductive inference, language learning, learning and logic, learning from expert advice, online learning, defensive forecasting, and teaching.

Algorithmic Learning Theory - Nicolò Cesa-Bianchi 2003-08-03

This volume contains the papers presented at the 13th Annual Conference on Algorithmic Learning Theory (ALT 2002), which was held in Lub^ock (Germany) during November 24-26, 2002. The main objective of the conference was to provide an interdisciplinary forum discussing the theoretical foundations of machine learning as well as their relevance to practical applications. The conference was colocated with the Fifth International Conference on Discovery Science (DS 2002). The volume includes 26 technical contributions which were selected by the program committee from 49 submissions. It also contains the ALT 2002 invited talks presented by Susumu Hayashi (Kobe University, Japan) on "Mathematics Based on Learning", by John Shawe-Taylor (Royal Holloway University of London, UK) on "On the Eigenspectrum of the Gram Matrix and Its Relationship to the Operator Eigenspectrum", and by Ian H. Witten (University of Waikato, New Zealand) on "Learning Structure from Sequences, with Applications in a Digital Library" (joint invited talk with DS 2002). Furthermore, this volume includes abstracts of the invited talks for DS 2002 presented by Gerhard Widmer (Austrian Research Institute for Artificial Intelligence, Vienna) on "In Search of the Horowitz Factor: Interim Report on a Musical Discovery Project" and by Rudolf Kruse (University of Magdeburg, Germany) on "Data Mining with Graphical Models". The complete versions of these papers are published

in the DS 2002 proceedings (Lecture Notes in Artificial Intelligence, Vol. 2534). ALT has been awarding the E.

Algorithmic Learning Theory - Jos^e L. Balc^azar 2006-10-05

This book constitutes the refereed proceedings of the 17th International Conference on Algorithmic Learning Theory, ALT 2006, held in Barcelona, Spain in October 2006, colocated with the 9th International Conference on Discovery Science, DS 2006. The 24 revised full papers presented together with the abstracts of five invited papers were carefully reviewed and selected from 53 submissions. The papers are dedicated to the theoretical foundations of machine learning.

Algorithmic Learning Theory - Osamu Watanabe 2007-03-05

This book constitutes the refereed proceedings of the 10th International Conference on Algorithmic Learning Theory, ALT'99, held in Tokyo, Japan, in December 1999. The 26 full papers presented were carefully reviewed and selected from a total of 51 submissions. Also included are three invited papers. The papers are organized in sections on Learning Dimension, Inductive Inference, Inductive Logic Programming, PAC Learning, Mathematical Tools for Learning, Learning Recursive Functions, Query Learning and On-Line Learning.

Algorithmic Learning Theory - Jyrki Kivinen 2011-09-23

This book constitutes the refereed proceedings of the 22nd International Conference on Algorithmic Learning Theory, ALT 2011, held in Espoo, Finland, in October 2011, co-located with the 14th International Conference on Discovery Science, DS 2011. The 28 revised full papers presented together with the abstracts of 5 invited talks were carefully reviewed and selected from numerous submissions. The papers are divided into topical sections of papers on inductive inference, regression, bandit problems, online learning, kernel and margin-based methods, intelligent agents and other learning models.

Algorithmic Learning Theory - Ricard Gavald^a 2003-10-02

Algorithmic Learning Theory - Ming Li 1997-09-17

This book constitutes the strictly refereed post-workshop proceedings of the Second International Workshop on Database Issues for Data

Visualization, held in conjunction with the IEEE Visualization '95 conference in Atlanta, Georgia, in October 1995. Besides 13 revised full papers, the book presents three workshop subgroup reports summarizing the contents of the book as well as the state-of-the-art in the areas of scientific data modelling, supporting interactive database exploration, and visualization related metadata. The volume provides a snapshot of current research in the area and surveys the problems that must be addressed now and in the future towards the integration of database management systems and data visualization.

Algorithmic Learning Theory - Sanjay Jain 2013-09-11

This book constitutes the proceedings of the 24th International Conference on Algorithmic Learning Theory, ALT 2013, held in Singapore in October 2013, and co-located with the 16th International Conference on Discovery Science, DS 2013. The 23 papers presented in this volume were carefully reviewed and selected from 39 submissions. In addition the book contains 3 full papers of invited talks. The papers are organized in topical sections named: online learning, inductive inference and grammatical inference, teaching and learning from queries, bandit theory, statistical learning theory, Bayesian/stochastic learning, and unsupervised/semi-supervised learning.

Algorithmic Learning Theory - Yoav Freund 2008-10-02

This volume contains papers presented at the 19th International Conference on Algorithmic Learning Theory (ALT 2008), which was held in Budapest, Hungary during October 13-16, 2008. The conference was co-located with the 11th International Conference on Discovery Science (DS 2008). The technical program of ALT 2008 contained 31 papers selected from 46 submissions, and 5 invited talks. The invited talks were presented in joint sessions of both conferences. ALT 2008 was the 19th in the ALT conference series, established in Japan in 1990. The series Analogical and Inductive Inference is a predecessor of this series: it was held in 1986, 1989 and 1992, co-located with ALT in 1994, and subsequently merged with ALT. ALT maintains its strong connections to Japan, but has also been held in other countries, such as Australia, Germany, Italy, Singapore, Spain and the USA. The ALT conference series

is supervised by its Steering Committee: Naoki Abe (IBM T. J.

Algorithmic Learning Theory - Klaus P. Jantke 1995-10-05

This book constitutes the refereed proceedings of the 6th International Workshop on Algorithmic Learning Theory, ALT '95, held in Fukuoka, Japan, in October 1995. The book contains 21 revised full papers selected from 46 submissions together with three invited contributions. It covers all current areas related to algorithmic learning theory, in particular the theory of machine learning, design and analysis of learning algorithms, computational logic aspects, inductive inference, learning via queries, artificial and biological neural network learning, pattern recognition, learning by analogy, statistical learning, inductive logic programming, robot learning, and gene analysis.

Algorithmic Learning Theory - Naoki Abe 2001-11-07

This volume contains the papers presented at the 12th Annual Conference on Algorithmic Learning Theory (ALT 2001), which was held in Washington DC, USA, during November 25-28, 2001. The main objective of the conference is to provide an inter-disciplinary forum for the discussion of theoretical foundations of machine learning, as well as their relevance to practical applications. The conference was co-located with the Fourth International Conference on Discovery Science (DS 2001). The volume includes 21 contributed papers. These papers were selected by the program committee from 42 submissions based on clarity, significance, originality, and relevance to theory and practice of machine learning. Additionally, the volume contains the invited talks of ALT 2001 presented by Dana Angluin of Yale University, USA, Paul R. Cohen of the University of Massachusetts at Amherst, USA, and the joint invited talk for ALT 2001 and DS 2001 presented by Setsuo Arikawa of Kyushu University, Japan. Furthermore, this volume includes abstracts of the invited talks for DS 2001 presented by Lindley Darden and Ben Shneiderman both of the University of Maryland at College Park, USA. The complete versions of these papers are published in the DS 2001 proceedings (Lecture Notes in Artificial Intelligence Vol. 2226).

Algorithmic Learning Theory - Hiroki Arimura 2003-06-29

This book constitutes the refereed proceedings of the 11th International

Conference on Algorithmic Learning Theory, ALT 2000, held in Sydney, Australia in December 2000. The 22 revised full papers presented together with three invited papers were carefully reviewed and selected from 39 submissions. The papers are organized in topical sections on statistical learning, inductive logic programming, inductive inference, complexity, neural networks and other paradigms, support vector machines.

Algorithmic Learning Theory - Osamu Watanabe 1999-11-17

This book constitutes the refereed proceedings of the 10th International Conference on Algorithmic Learning Theory, ALT'99, held in Tokyo, Japan, in December 1999. The 26 full papers presented were carefully reviewed and selected from a total of 51 submissions. Also included are three invited papers. The papers are organized in sections on Learning Dimension, Inductive Inference, Inductive Logic Programming, PAC Learning, Mathematical Tools for Learning, Learning Recursive Functions, Query Learning and On-Line Learning.

Algorithmic Learning Theory - Hiroki Arimura 2000-11-15

This book constitutes the refereed proceedings of the 11th International Conference on Algorithmic Learning Theory, ALT 2000, held in Sydney, Australia in December 2000. The 22 revised full papers presented together with three invited papers were carefully reviewed and selected from 39 submissions. The papers are organized in topical sections on statistical learning, inductive logic programming, inductive inference, complexity, neural networks and other paradigms, support vector machines.

Algorithmic Learning Theory - Michael M. Richter 2003-06-29

This volume contains all the papers presented at the Ninth International Conference on Algorithmic Learning Theory (ALT'98), held at the European education centre Europäisches Bildungszentrum (ebz) Otzenhausen, Germany, October 8-10, 1998. The Conference was sponsored by the Japanese Society for Artificial Intelligence (JSAI) and the University of Kaiserslautern. Thirty-four papers on all aspects of algorithmic learning theory and related areas were submitted, all electronically. Twenty-six papers were accepted by the program

committee based on originality, quality, and relevance to the theory of machine learning. Additionally, three invited talks presented by Akira Maruoka of Tohoku University, Arun Sharma of the University of New South Wales, and Stefan Wrobel from GMD, respectively, were featured at the conference. We would like to express our sincere gratitude to our invited speakers for sharing with us their insights on new and exciting developments in their areas of research. This conference is the ninth in a series of annual meetings established in 1990. The ALT series focuses on all areas related to algorithmic learning theory including (but not limited to): the theory of machine learning, the design and analysis of learning algorithms, computational logic of/for machine discovery, inductive inference of recursive functions and recursively enumerable languages, learning via queries, learning by artificial and biological neural networks, pattern recognition, learning by analogy, statistical learning, Bayesian/MDL estimation, inductive logic programming, robotics, application of learning to databases, and gene analyses.

Induction, Algorithmic Learning Theory, and Philosophy - Michèle Friend 2007-08-21

This is the first book to collect essays from philosophers, mathematicians and computer scientists working at the exciting interface of algorithmic learning theory and the epistemology of science and inductive inference. Readable, introductory essays provide engaging surveys of different, complementary, and mutually inspiring approaches to the topic, both from a philosophical and a mathematical viewpoint.

Algorithmic Learning Theory - Australia) Alt 9 (1996 Sydney 1996-10-09

This book constitutes the refereed proceedings of the 7th International Workshop on Algorithmic Learning Theory, ALT '96, held in Sydney, Australia, in October 1996. The 16 revised full papers presented were selected from 41 submissions; also included are eight short papers as well as four full length invited contributions by Ross Quinlan, Takeshi Shinohara, Leslie Valiant, and Paul Vitanyi, and an introduction by the volume editors. The book covers all areas related to algorithmic learning theory, ranging from theoretical foundations of machine learning to

applications in several areas.

Algorithmic Learning Theory - Shai Ben David 2004-09-23

Algorithmic learning theory is mathematics about computer programs which learn from experience. This involves considerable interaction between various mathematical disciplines including theory of computation, statistics, and combinatorics. There is also considerable interaction with the practical, empirical fields of machine and statistical learning in which a principal aim is to predict, from past data about phenomena, useful features of future data from the same phenomena. The papers in this volume cover a broad range of topics of current research in the field of algorithmic learning theory. We have divided the 29 technical, contributed papers in this volume into eight categories (corresponding to eight sessions) reflecting this broad range. The

categories featured are Inductive Inference, Approximate Optimization Algorithms, Online Sequence Prediction, Statistical Analysis of Unlabeled Data, PAC Learning & Boosting, Statistical - supervised Learning, Logic Based Learning, and Query & Reinforcement Learning. Below we give a brief overview of the field, placing each of these topics in the general context of the field. Formal models of automated learning reflect various facets of the wide range of activities that can be viewed as learning. A first dichotomy is between viewing learning as an indefinite process and viewing it as a finite activity with a defined termination. Inductive Inference models focus on indefinite learning processes, requiring only eventual success of the learner to converge to a satisfactory conclusion.