Sgai Sample Paper

Experts from a range of disciplines explore how humans and artificial agents can quickly learn completely new tasks through natural interactions with each other. Humans are not limited to a fixed set of innate or preprogrammed tasks. We learn quickly through language and other forms of natural interaction, and we improve our performance and teach others what we have learned. Understanding the mechanisms that underlie the acquisition of new tasks through natural interaction is an ongoing challenge. Advances in artificial intelligence, cognitive science, and robotics are leading us to future systems with human-like capabilities. A huge gap exists, however, between the highly specialized niche capabilities of current machine learning systems and the generality, flexibility, and in situ robustness of human instruction and learning. Drawing on expertise from multiple disciplines, this Strüngmann Forum Report explores how humans and artificial agents can

quickly learn completely new tasks through natural interactions with each other. The contributors consider functional knowledge requirements, the ontology of interactive task learning, and the representation of task knowledge at multiple levels of abstraction. They explore natural forms of interactions among humans as well as the use of interaction to teach robots and software agents new tasks in complex, dynamic environments. They discuss research challenges and opportunities, including ethical considerations, and make proposals to further understanding of interactive task learning and create new capabilities in assistive robotics, healthcare, education, training, and gaming. Contributors Tony Belpaeme, Katrien Beuls, Maya Cakmak, Joyce Y. Chai, Franklin Chang, Ropafadzo Denga, Marc Destefano, Mark d'Inverno, Kenneth D. Forbus, Simon Garrod, Kevin A. Gluck, Wayne D. Gray, James Kirk, Kenneth R. Koedinger, Parisa Kordjamshidi, John E. Laird, Christian Lebiere, Stephen C. Levinson, Elena Lieven, John K. Lindstedt, Aaron Mininger, Tom Mitchell, Shiwali Mohan, Ana

Paiva, Katerina Pastra, Peter Pirolli, Roussell Rahman, Charles Rich, Katharina J. Rohlfing, Paul S. Rosenbloom, Nele Russwinkel, Dario D. Salvucci, Matthew-Donald D. Sangster, Matthias Scheutz, Julie A. Shah, Candace L. Sidner, Catherine Sibert, Michael Spranger, Luc Steels, Suzanne Stevenson, Terrence C. Stewart, Arthur Still, Andrea Stocco, Niels Taatgen, Andrea L. Thomaz, J. Gregory Trafton, Han L. J. van der Maas, Paul Van Eecke, Kurt VanLehn, Anna-Lisa Vollmer, Janet Wiles, Robert E. Wray III, Matthew Yee-King
The papers in this volume are the refereed papers presented at AI-2014, the Thirty-fourth SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge in December 2014 in both the technical and the application streams. They present new and innovative developments and applications, divided into technical stream sections on Knowledge Discovery and Data Mining, Machine Learning, and Agents, Ontologies and Genetic Programming, followed by application stream

sections on Evolutionary Algorithms/Dynamic Modelling, Planning and Optimisation, and Machine Learning and Data Mining. The volume also includes the text of short papers presented as posters at the conference. This is the thirty-first volume in the Research and Development in Intelligent Systems series, which also incorporates the twenty-second volume in the Applications and Innovations in Intelligent Systems series. These series are essential reading for those who wish to keep up to date with developments in this important field.

The papers in this volume are the refereed papers presented at AI-2011, the Thirty-first SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge in December 2011 in both the technical and the application streams. They present new and innovative developments and applications, divided into technical stream sections on Planning, Evolutionary Algorithms, Speech and Vision, and Machine Learning, followed by application stream sections on Knowledge

Discovery and Data Mining, Machine Learning, Evolutionary Algorithms and AI in Action. The volume also includes the text of short papers presented as posters at the conference. This is the twenty-eighth volume in the Research and Development in Intelligent Systems series, which also incorporates the nineteenth volume in the Applications and Innovations in Intelligent Systems series. These series are essential reading for those who wish to keep up to date with developments in this important field. This book constitutes the proceedings of the 40th SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, AI 2020, which was supposed to be held in Cambridge, UK, in December 2020. The conference was held virtually due to the COVID-19 pandemic. The 23 full papers and 9 short papers presented in this volume were carefully reviewed and selected from 44 submissions. The volume includes technical papers presenting new and innovative developments in the field as well as application papers presenting innovative

applications of AI techniques in a number of subject domains. The papers are organized in the following topical sections: neural nets and knowledge management; machine learning; industrial applications; advances in applied AI; and medical and legal applications.

Research and Development in Intelligent Systems XXVIII
Research and Development in Intelligent Systems XXXI
Research and Development in Intelligent Systems XXVII
Humans, Robots, and Agents Acquiring New Tasks through Natural Interactions
Proceedings of AI-2006, the Twenty-sixth SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence
Research and Applications
Advances in Knowledge Discovery and Data Mining
Advances in Agent Communication

M.A.Bramer University of Portsmouth, UK This volume comprises the refereed application papers presented at AI-2003, the Twenty-third SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in

Cambridge in December 2003. The conference was organised by SGAI, the British Computer Society Specialist Group on Artificial Intelligence. The papers present new and innovative developments in the field, divided into sections on Personalisation, E-Commerce and Resource Management, Hazard Prediction, Fault Diagnosis and Design, Medical and Social Services and Image Recognition, Knowledge Bases and Attribute Selection. This year's prize for the best refereed application paper, which was sponsored by the Department of Trade and Industry, was won by a paper entitled Design-a-Trial: A Rule-Based Decision Support System for Clinical Trial Design, which has no fewer than nine authors: K Nammuni, C Pickering (InferMed Ltd), S Modgil (University College, London), A Montgomery (InferMed Ltd), P Hammond (University College, London), IC Wyatt (National Institute for Clinical Excellence), DG Altman (Centre for Statistics in Medicine), R Dunlop (InferMed Ltd) and H Potts (Kings College, London). This is the eleventh volume in the Applications and Innovations series. The Technical Stream papers are published as a companion volume under the title Research and Development in Intelligent Systems XX. On behalf of the conference organising committee I should like to thank all those who contributed to the organisation of this year's application programme, in particular the programme committee members, the referees and our administrators Fiona Hartree and Linsay Turbert. This book constitutes the proceedings of the 39th SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, AI 2019, held in

Cambridge, UK, in December 2019. The 29 full papers and 14 short papers presented in this volume were carefully reviewed and selected from 49 submissions. The volume includes technical papers presenting new and innovative developments in the field as well as application papers presenting innovative applications of AI techniques in a number of subject domains. The papers are organized in the following topical sections: machine learning; knowledge discovery and data mining; agents, knowledge acquisition and ontologies; medical applications; applications of evolutionary algorithms; machine learning for time series data; applications of machine learning; and knowledge acquisition.

M.A.BRAMER University of Portsmouth, UK This volume comprises the refereed technical papers presented at ES2002, the Twenty-second SGAI International Conference on Knowledge Based Systems and Applied Artificial Intelligence, held in Cambridge in December 2002. The conference was organised by SGAI, the British Computer Society Specialist Group on Artificial Intelligence (previously known as SGES). The papers in this volume present new and innovative developments in the field, divided into sections on Machine Learning, Knowledge Representation and Reasoning, Knowledge Acquisition, Constraint Satisfaction, Scheduling and Natural Language Processing. This year's prize for the best refereed technical paper was won by a paper entitled Covering the Path Space: A Casebase Analysis for Mobile Robot Path Planning by M Kruusmaa (Department of Mechatronics, Tallinn Technical

University, Estonia) and J Willemson (Department of Computer Science, Tartu University, Estonia). SGAI gratefully acknowledges the long-term sponsorship of Hewlett-Packard Laboratories (Bristol) for this prize, which goes back to the 1980s. This is the nineteenth volume in the Research and Development series. The Application Stream papers are published as a companion volume under the title Applications and Innovations in Intelligent Systems X. On behalf of the conference organising committee I should like to thank all those who contributed to the organisation of this year's technical programme, in particular the programme committee members, the referees and our administrators Linsay Turbert and Helen Forster.

The refereed technical papers in this volume present new and innovative developments in this important field; essential reading for those who wish to keep up to date on intelligent systems.

Research and Development in Intelligent Systems XXV

Case-Based Reasoning Technology

Research and Development in Intelligent Systems XXX

Learning in Virtual Worlds

Proceedings of AI-2004, the Twenty-fourth SGAI International Conference on Innhovative Techniques and Applications of Artificial Intelligence

Incorporating Applications and Innovations in Intelligent Systems XX Proceedings of AI-2012, The Thirty-second SGAI International Conference on Innovative Techniques

and Applications of Artificial Intelligence

Research and Development in Intelligent Systems XX

Practical Aspects of Knowledge Management

This state-of-the-art survey presents a coherent summary of research and development in case-based reasoning (CBR) undertaken in Germany in recent years. The book opens with a general introduction to CBR presenting the basic ideas and concepts, setting the terminology, and looking at CBR from some new points of view. The main part of the book, consisting of nine chapters, is devoted to detailed presentations of CBR applications successfully performed in various areas. Among these application areas are decision and sales support, text processing, adaptation, planning, design, software engineering, tutoring systems, and medicine. The remaining chapters present areas related to CBR as well as a glossary, a subject index and bibliography.

Swallowing sound recognition is an important task in bioengineering that could be employed in systems for automated swallowing assessment and diagnosis of abnormally high rate of swallowing (aerophagia) [1], which is the primary mode of

ingesting excessive amounts of air, and swallowing dysfunction (dysphagia) [2]-[5], that may lead to aspiration, choking, and even death. Dysphagia represents a major problem in rehabilitation of stroke and head injury patients. In current clinical practice videofluoroscopic swallow study (VFSS) is the gold standard for diagnosis of swallowing disorders. However, VFSS is a ti- consuming procedure performed only in a clinical setting. VFSS also results in some radiation exposure. Therefore, various non-invasive methods are proposed for swallowing assessment based on evaluation of swallowing signals, recorded by microphones and/or accelerometers and analyzed by digital signal processing techniques [2]-[5]. Swallowing sounds are caused by a bolus passing through pharynx. It is possible to use swallowing sounds to determine pharyngeal phase of the swallow and characteristics of the bolus [2].

The most common document formalisation for text classi?cation is the vector space model founded on the bag of words/phrases representation. The main advantage of the vector space model is that it can readily be employed by classi?cation - gorithms. However, the bag of words/phrases representation is suited to

capturing only word/phrase frequency; structural and semantic information is ignored. It has been established that structural information plays an important role in classi?cation accuracy [14]. An alternative to the bag of words/phrases representation is a graph based rep- sentation, which intuitively possesses much more expressive power. However, this representation introduces an additional level of complexity in that the calculation of the similarity between two graphs is signi?cantly more computationally expensive than between two vectors (see for example [16]). Some work (see for example [12]) has been done on hybrid representations to capture both structural elements (- ing the graph model) and signi?cant features using the vector model. However the computational resources required to process this hybrid model are still extensive.

This book gathers selected high-impact articles from the 1st International Conference on Data Science, Machine Learning & Applications 2019. It highlights the latest developments in the areas of Artificial Intelligence, Machine Learning, Soft Computing, Human–Computer Interaction and various data science & machine learning applications. It brings together scientists and

researchers from different universities and industries around
the world to showcase a broad range of perspectives, practices
and technical expertise.
Proceedings of AI2005, the Twenty-fifth SGAI International
Conference on Innovative Techniques and Applications of
Artifical Intelligence
Applications and Innovations in Intelligent Systems XVI
Applications and Innovations in Intelligent Systems XI
Incorporating Applications and Innovations in Intelligent
Systems XVIII Proceedings of AI-2010, The Thirtieth SGAI
International Conference on Innovative Techniques and
Applications of Artificial Intelligence
Research and Development in Intelligent Systems XXIII
Applications and Innovations in Intelligent Systems XII
Research and Development in Intelligent Systems XXI
Emerging Technologies in Distance Education

The two volume set LNAI 3801 and LNAI 3802 constitute the refereed
proceedings of the annual International Conference on Computational
Intelligence and Security, CIS 2005, held in Xi'an, China, in December
2005. The 338 revised papers presented - 254 regular and 84 extended

papers - were carefully reviewed and selected from over 1800 submissions. The first volume is organized in topical sections on learning and fuzzy systems, evolutionary computation, intelligent agents and systems, intelligent information retrieval, support vector machines, swarm intelligence, data mining, pattern recognition, and applications. The second volume is subdivided in topical sections on cryptography and coding, cryptographic protocols, intrusion detection, security models and architecture, security management, watermarking and information hiding, web and network applications, image and signal processing, and applications.

The two-volume set LNAI 12084 and 12085 constitutes the thoroughly refereed proceedings of the 24th Pacific-Asia Conference on Knowledge Discovery and Data Mining, PAKDD 2020, which was due to be held in Singapore, in May 2020. The conference was held virtually due to the COVID-19 pandemic. The 135 full papers presented were carefully reviewed and selected from 628 submissions. The papers present new ideas, original research results, and practical development experiences from all KDD related areas, including data mining, data warehousing, machine learning, artificial intelligence, databases, statistics, knowledge engineering, visualization, decision-making systems, and the emerging applications. They are organized in the following topical sections: recommender systems; classification;

clustering; mining social networks; representation learning and embedding; mining behavioral data; deep learning; feature extraction and selection; human, domain, organizational and social factors in data mining; mining sequential data; mining imbalanced data; association; privacy and security; supervised learning; novel algorithms; mining multi-media/multi-dimensional data; application; mining graph and network data; anomaly detection and analytics; mining spatial, temporal, unstructured and semi-structured data; sentiment analysis; statistical/graphical model; multi-source/distributed/parallel/cloud computing.

Three-dimensional (3D) immersive virtual worlds have been touted as being capable of facilitating highly interactive, engaging, multimodal learning experiences. Much of the evidence gathered to support these claims has been anecdotal but the potential that these environments hold to solve traditional problems in online and technology-mediated education—primarily learner isolation and student disengagement—has resulted in considerable investments in virtual world platforms like Second Life, OpenSimulator, and Open Wonderland by both professors and institutions. To justify this ongoing and sustained investment, institutions and proponents of simulated learning environments must assemble a robust body of evidence that illustrates the most effective use of this powerful learning tool. In this authoritative collection,

a team of international experts outline the emerging trends and developments in the use of 3D virtual worlds for teaching and learning. They explore aspec ts of learner interaction with virtual worlds, such as user wayfinding in Second Life, communication modes and perceived presence, and accessibility issues for elderly or disabled learners. They also examine advanced technologies that hold potential for the enhancement of learner immersion and discuss best practices in the design and implementation of virtual world-based learning interventions and tasks. By evaluating and documenting different methods, approaches, and strategies, the contributors to Learning in Virtual Worlds offer important information and insight to both scholars and practitioners in the field.

This book contains the papers presented at the 5th International Conference on Pr- tical Aspects of Knowledge Management organized by the Department of Knowledge Management, Institute of Computer Science and Business Informatics, University of Vienna. The event took place on December 02-03, 2004 in Vienna. The PAKM conference series offers a communication forum and meeting ground for practitioners and researchers engaged in developing and deploying advanced bu- ness solutions for the management of knowledge and intellectual capital. Contributions pursuing integrated approaches which consider organizational, technological and c- tural issues of knowledge

management have been elected for presentation. PAKM is a forum for
people to share their views, to exchange ideas, to develop new
insights, and to envision completely new kinds of solutions for
knowledge management problems. The accepted papers are of high quality
and are not too specialized so that the main issues can be understood
by someone outside the respective ?eld. This is crucial for an
interdisciplinary exchange of ideas. Like its predecessors, PAKM 2004
featured two invited talks. It is a real joy seeing the visibility of
the conferenceincrease and noting that kno- edge management
researchers and practitioners from all over the world submitted -
pers. This year, 163 papers and case studies were submitted, from
which 48 were - cepted.
24th Pacific-Asia Conference, PAKDD 2020, Singapore, May 11-14, 2020,
Proceedings, Part I.. Lecture Notes in Artificial Intelligence
41st SGAI International Conference on Artificial Intelligence, AI
2021, Cambridge, UK, December 14-16, 2021, Proceedings
Research and Development in Intelligent Systems XXIV
Proceedings of AI-2008, The Twenty-eighth SGAI International
Conference on Innovative Techniques and Applications of Artificial
Intelligence
Research and Development in Intelligent Systems XXII
38th SGAI International Conference on Artificial Intelligence, AI

2018, Cambridge, UK, December 11-13, 2018, Proceedings
Incorporating Applications and Innovations in Intelligent Systems XVII
40th SGAI International Conference on Artificial Intelligence, AI
2020, Cambridge, UK, December 15-17, 2020, Proceedings

The papers in this volume are the refereed papers presented at AI-2015, the Thirty-fifth
SGAI International Conference on Innovative Techniques and Applications of Artificial
Intelligence, held in Cambridge in December 2015 in both the technical and the
application streams. They present new and innovative developments and applications,
divided into technical stream sections on Knowledge Discovery and Data Mining, Machine
Learning and Knowledge Acquisition, and AI in Action, followed by application stream
sections on Applications of Genetic Algorithms, Applications of Intelligent Agents and
Evolutionary Techniques, and AI Applications. The volume also includes the text of short
papers presented as posters at the conference. This is the thirty-second volume in the
Research and Development in Intelligent Systems series, which also incorporates the
twenty-third volume in the Applications and Innovations in Intelligent Systems series.
These series are essential reading for those who wish to keep up to date with developments
in this important field.
The papers in this volume are the refereed papers presented at AI-2012, the Thirty-second
SGAI International Conference on Innovative Techniques and Applications of Artificial

Intelligence, held in Cambridge in December 2012 in both the technical and the application streams. They present new and innovative developments and applications, divided into technical stream sections on Data Mining, Data Mining and Machine Learning, Planning and Optimisation, and Knowledge Management and Prediction, followed by application stream sections on Language and Classification, Recommendation, Practical Applications and Systems, and Data Mining and Machine Learning. The volume also includes the text of short papers presented as posters at the conference. This is the twenty-ninth volume in the Research and Development in Intelligent Systems series, which also incorporates the twentieth volume in the Applications and Innovations in Intelligent Systems series. These series are essential reading for those who wish to keep up to date with developments in this important field. The papers in this volume are the refereed application papers presented at AI-2005, the Twenty-fifth SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge in December 2005. The papers present new and innovative developments in the field, divided into sections on Synthesis and Prediction, Scheduling and Search, Diagnosis and Monitoring, Classification and Design, and Analysis and Evaluation. This is the thirteenth volume in the Applications and Innovations series. The series serves as a key reference on the use of AI Technology to enable organisations to solve complex problems and gain significant business benefits. The

Technical Stream papers are published as a companion volume under the title Research and Development in Intelligent Systems XXII.

The papers in this volume are the refereed technical papers presented at AI-2006, the Twenty-sixth SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge in December 2006. They present new and innovative developments in the field. For the first time the volume also includes the text of short papers presented as posters at the conference.

Incorporating Applications and Innovations in Intelligent Systems XXII

Stakeholder Engagement and Sustainability

From Foundations to Applications

Research and Development in Intelligent Systems XXVI

Proceedings of AI-2007, The Twenty-seventh SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence

Research and Development in Intelligent Systems XIX

Artificial Intelligence XXXVI

Applications and Innovations in Intelligent Systems XIV

The papers in this volume are the refereed technical papers presented at AI-2003, the Twenty-third SGAI International Conference on theory, practical and application of Artificial Intelligence, held in Cambridge in December 2003. The papers in this volume present new and innovative

developments in the field, divided into sections on Machine Learning, Knowledge Representation and Reasoning, Knowledge Acquisition, Constraint Satisfaction and Scheduling, and Natural Language Processing. This is the twentieth volume in the Research and Development series. The series is essential reading for those who wish to keep up to date with developments in this important field. The Application Stream papers are published as a companion volume under the title "Applications and Innovations in Intelligent Systems XI". A. L. Macintosh, Napier University, UK The papers in this volume are the refereed application papers presented at ES2004, the Twenty-fourth SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge in December 2004. The conference was organised by SGAI, the British Computer Society Specialist Group on Artificial Intelligence. This volume contains twenty refereed papers which present the innovative application of a range of AI techniques in a number of subject domains. This year, the papers are divided into sections on Synthesis and Prediction, Scheduling and Search, Diagnosis and Monitoring, Classification and Design, and Analysis and Evaluation This year's prize for the best refereed application paper, which is being sponsored by the Department of Trade and Industry, was won by a paper entitled "A Case-Based Technique for Tracking Concept Drift in Spam Filtering". The authors are Sarah Jane Delany, from the Dublin Institute of Technology, Ireland, and Padraig Cunningham, Alexey Tsymbal, and Lorcan Coyle from Trinity College Dublin, Ireland. This is the twelfth volume in the Applications and Innovations series. The Technical Stream papers are published as a companion volume under the title Research and Development in Intelligent Systems XXI. On behalf of the conference organising committee I should like to thank all those who contributed to the organisation of this year's application

programme, in particular the programme committee members, the executive programme committee and our administrators Linsay Turbert and Collette Jackson.

The papers in this volume are the refereed technical papers presented at AI-2008, the Twenty-eighth SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge in December 2008. They present new and innovative developments in the field, divided into sections on CBR and Classification, AI Techniques, Argumentation and Negotiation, Intelligent Systems, From Machine Learning To E-Learning and Decision Making. The volume also includes the text of short papers presented as posters at the conference. This is the twenty-fifth volume in the Research and Development series. The series is essential reading for those who wish to keep up to date with developments in this important field. The Application Stream papers are published as a companion volume under the title Applications and Innovations in Intelligent Systems XVI.

This book presents the proceedings of International Conference on Knowledge Society: Technology, Sustainability and Educational Innovation (TSIE 2019). The conference, which was held at UTN in Ibarra, Ecuador, on 3–5 July 2019, allowed participants and speakers to share their research and findings on emerging and innovative global issues. The conference was organized in collaboration with a number of research groups: Group for the Scientific Research Network (e-CIER); Research Group in Educational Innovation and Technology, University of Salamanca, Spain(GITE-USAL); International Research Group for Heritage and Sustainability (GIIPS), and the Social Science Research Group (GICS). In addition, it had the endorsement of the RedCLARA, e-science, Fidal Foundation, Red CEDIA, IEEE, Microsoft, Business IT, Adobe, and Argo Systems. The term "knowledge society" can be understood as the management,

understanding and co-creation of knowledge oriented toward the sustainable development and positive transformation of society. In this context and on the occasion of the XXXIII anniversary of the Universidad Técnica del Norte (UTN), the Postgraduate Institute through its Master of Technology and Educational Innovation held the I International Congress on Knowledge Society: Technology, Sustainability and Educational Innovation – TSIE 2019, which brought together educators, researchers, academics, students, managers, and professionals, from both the public and private sectors to share knowledge and technological developments. The book covers the following topics: 1. curriculum, technology and educational innovation; 2. media and education; 3. applied computing; 4. educational robotics. 5. technology, culture, heritage, and tourism development perspectives; and 6. biodiversity and sustainability.
Applications and Innovations in Intelligent Systems XV
Incorporating Applications and Innovations in Intelligent Systems XXI Proceedings of AI-2013, The Thirty-third SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence
Artificial Intelligence XXXVII
Proceedings of AI2003, the Twenty-third SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence
Applications and Innovations in Intelligent Systems XIII
Advanced Machine Learning Technologies and Applications
Measuring Capital in the New Economy
Proceedings of AI-2007, the Twenty-seventh SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence

*An agent in a multi-agent system (MAS) has to generate plans for
its individual goal, but these plans may con?ict with those that
are already being scheduled or executed by other agents. It must
also be able to complete its planning and resolution of these
con?icts within a reasonable time to have an acceptable quality
plan. Although we adopt hierarchical planning (HP, for example,
see [7, 12]) using the decision-theoretic planning (DTP)
approach [6] for ef?cient planning, it is not trivial to apply
HPO to MAS. In HP, appropriate (abstract) plans are selected
level by level to maximize the utility U (p), where where p is
the expected ?nal plan comprising a sequence of primitive
actions. However, in the MAS context, con?icts between agents
affect the ef?ciency and quality of resulting plans. When a
con?ict is found at lower levels, an additional sophisticated
process for avoiding it (con?ict resolution) must be invoked and
some extra actions (such as waiting for synchronization and
detouring) may have to be added to the plan. The con?ict
resolution process may become costly or fail. Even a single
con?ict, if it is dif?cult to resolve, will result in a plan
with considerably lower quality than it otherwise would have. As*

a result, in multi-agent systems, the second- or third-best plans may result in better overall performance.
As the accelerated technological advances of the past two decades continue to reshape the United States' economy, intangible assets and high-technology investments are taking larger roles. These developments have raised a number of concerns, such as: how do we measure intangible assets? Are we accurately appraising newer, high-technology capital? The answers to these questions have broad implications for the assessment of the economy's growth over the long term, for the pace of technological advancement in the economy, and for estimates of the nation's wealth. In Measuring Capital in the New Economy, Carol Corrado, John Haltiwanger, Daniel Sichel, and a host of distinguished collaborators offer new approaches for measuring capital in an economy that is increasingly dominated by high-technology capital and intangible assets. As the contributors show, high-tech capital and intangible assets affect the economy in ways that are notoriously difficult to appraise. In this detailed and thorough analysis of the problem and its solutions, the contributors study the nature of these

relationships and provide guidance as to what factors should be included in calculations of different types of capital for economists, policymakers, and the financial and accounting communities alike.

The papers in this volume are the refereed papers presented at AI-2013, the Thirty-third SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge in December 2013 in both the technical and the application streams. They present new and innovative developments and applications, divided into technical stream sections on Knowledge Discovery and Data Mining I, Knowledge Discovery and Data Mining II, Intelligent Agents, Representation and Reasoning, and Machine Learning and Constraint Programming, followed by application stream sections on Medical Applications, Applications in Education and Information Science, and AI Applications. The volume also includes the text of short papers presented as posters at the conference. This is the thirtieth volume in the Research and Development in Intelligent Systems series, which also incorporates the twenty-first volume in the Applications and

Innovations in Intelligent Systems series. These series are essential reading for those who wish to keep up to date with developments in this important field.

Frans Coenen University of Liverpool, UK This volume comprises the refereed technical papers presented at AI2003, the Twenty third SGAI International Conference on the theory, practice and application of Artificial Intelligence, held in Cambridge in December 2003. The conference was organised by SGAI, the British Computer Society Specialist Group on Artificial Intelligence (previously known as SGES). The papers in this volume present new and innovative developments in the field, divided into sections on Machine Learning, Knowledge Representation and Reasoning, Knowledge Acquisition, Constraint Satisfaction, Scheduling and Natural Language Processing. This year's prize for the best refereed technical paper was won by a paper entitled An Improved Hybrid Genetic Algorithm: New Results for the Quadratic Assignment Problem by A. Misevicius (Department of Practical Informatics, Kaunas University of Technology, Lithuania). SGAI gratefully acknowledges the long-term sponsorship of Hewlett-Packard Laboratories (Bristol) for this

prize, which goes back to the 1980s. This is the twentieth volume in the Research and Development series. The Application Stream papers are published as a companion volume under the title Applications and Innovations in Intelligent Systems XI. On behalf of the conference organising committee I should like to thank all those who contributed to the organisation of this year's technical programme, in particular the programme committee members, the referees and our administrator Fiona Hartree and Linsay Turbert.

Technology, Sustainability and Educational Innovation (TSIE)

Research and Development in Intelligent Systems XXXII

39th SGAI International Conference on Artificial Intelligence, AI 2019, Cambridge, UK, December 17-19, 2019, Proceedings

ICDSMLA 2019

International Workshop on Agent Communication Languages ACL 2003, Melbourne, Australia, July 14, 2003

Applications and Innovations in Intelligent Systems X

Proceedings of AI-2004, the Twenty-fourth SGAI International Conference on Innovative Techniques and Applications of

Artificial Intelligence

InthisbookwepresentacollectionofpapersaroundthetopicofAgentCom- nication. Th
communication between agents has been one of the major topics of research in
agent systems. The current work can therefore build on a number of previous
workshops, the proceedings of which have been published in earlier volumes in t
series. The basis of this collection is the accepted s- missions of the workshop
Agent Communication Languages which was held in conjunction with the AAMAS
conference in July 2003 in Melbourne. The workshop received 15 submissions of
which 12 were selected for publication in this volume. Although the number of
submissions was less than expected for an important area like Agent
Communication there is no reason to worry that this area does not get enough
attention from the agent community. First of all, the 12 selected papers are all
high quality. The high acceptance rate is only due to this high quality and not to
necessity to select a certain number of papers. Besides the high-quality worksh
papers, we noticed that many papers on Agent Communication found their way
the main conference. We decided therefore to invite a number of authors to rev
and extend their papers from this conference and to combine them with the
workshop papers. We believe that the current collection comprises a very good
quite complete overview of the state of the art in this area of research and give

good indication of the topics that are of major interest at the moment. Artificial Intelligence XXXVIII41st SGAI International Conference on Artificial Intelligence, AI 2021, Cambridge, UK, December 14–16, 2021, ProceedingsSpringe NatureArtificial Intelligence XXXVII40th SGAI International Conference on Artificial Intelligence, AI 2020, Cambridge, UK, December 15–17, 2020, ProceedingsSpringer Nature

A one-stop knowledge resource, Emerging Technologies in Distance Education showcases the international work of research scholars and innovative distance education practitioners who use emerging interactive technologies for teaching learning at a distance. This widely anticipated book harnesses the dispersed knowledge of international experts who highlight pedagogical, organizational, cultural, social, and economic factors that influence the adoption and integration emerging technologies in distance education. Whether as a result of technologic advances, changing mindsets, or economic and organizational pressures, this boo provides expert advice on how educators can launch effective and engaging dist education initiatives. It goes beyond the hype surrounding Web 2.0 technologies highlights the important issues that researchers and educators need to conside enhance educational practice. George Veletsionos is assistant professor of instructional technology at the University of Texas.

The papers in this volume are the refereed technical papers presented at AI2OO.
Twenty-fiftth SGAI International Conference on theory, practical and application
of Artificial Intelligence, held in Cambridge in December 2OO5. The papers in this
volume present new and innovative developments in the field, divided into sectio
on Machine Learning, Knowledge Representation and Reasoning, Knowledge
Acquisition, Constraint Satisfaction and Scheduling, and Natural Language
Processing. This is the twenty-first volume in the Research and Development se
The series is essential reading for those who wish to keep up to date with
developments in this important field. The Application Stream papers are publishe
as a companion volume under the title Applications and Innovations in Intelligent
Systems XIII.
Second International Conference, AMLTA 2O14, Cairo, Egypt, November 28-30,
2O14. Proceedings
Artificial Intelligence XXXIV
Incorporating Applications and Innovations in Intelligent Systems XIX Proceedings
of AI-2O11, the Thirty-first SGAI International Conference on Innovative
Techniques and Applications of Artificial Intelligence
Computational Intelligence and Security
Proceedings of AI-2OO6, The Twenty-sixth SGAI International Conference on

Innovative Techniques and Applications of Artificial Intelligence
37th SGAI International Conference on Artificial Intelligence, AI 2017, Cambridge,
UK, December 12-14, 2017, Proceedings
Proceedings of the 1st International Conference on Data Science, Machine Learn
and Applications
Interactive Task Learning
*This book constitutes the refereed proceedings of the Second International Conference on
Advanced Machine Learning Technologies and Applications, AMLTA 2014, held in Cairo,
Egypt, in November 2014. The 49 full papers presented were carefully reviewed and
selected from 101 initial submissions. The papers are organized in topical sections on
machine learning in Arabic text recognition and assistive technology; recommendation
systems for cloud services; machine learning in watermarking/authentication and virtual
machines; features extraction and classification; rough/fuzzy sets and applications; fuzzy
multi-criteria decision making; Web-based application and case-based reasoning
construction; social networks and big data sets.*
*This book constitutes the proceedings of the 37th SGAI International Conference on
Innovative Techniques and Applications of Artificial Intelligence, AI 2017, held in Cambridge,
UK, in December 2017. The 25 full papers and 12 short papers presented in this volume
were carefully reviewed and selected from 55 submissions. There are technical and
application papers which were organized in topical sections named: machine learning and
neural networks; machine learning, speech and vision and fuzzy logic; short technical*

papers; AI for healthcare; applications of machine learning; applications of neural networks and fuzzy logic; case-based reasoning; AI techniques; and short applications papers.
This book constitutes the proceedings of the 38th SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, AI 2018, held in Cambridge, UK, in December 2018. The 25 full papers and 12 short papers presented in this volume were carefully reviewed and selected from 46 submissions. There are technical and application papers which were organized in topical sections named: Neural Networks; Planning and Scheduling; Machine Learning; Industrial Applications of Artificial Intelligence; Planning and Scheduling in Action; Machine Learning in Action; Applications of Machine Learning; and Applications of Agent Systems and Genetic Algorithms.
The papers in this volume are the refereed papers presented at AI-2010, the Thirtieth SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge in December 2010 in both the technical and the application streams. They present new and innovative developments and applications, divided into technical stream sections on Intelligent Agents; Knowledge Discovery and Data Mining; Evolutionary Algorithms, Bayesian Networks and Model-Based Diagnosis; Machine Learning; Planning and Scheduling, followed by application stream sections on Applications of Machine Learning I and II; AI for Scheduling and AI in Action. The volume also includes the text of short papers presented as posters at the conference. This is the twenty-seventh volume in the Research and Development in Intelligent Systems series, which also incorporates the eighteenth volume in the Applications and Innovations in Intelligent Systems series. These series are essential reading for those who wish to keep up to date with developments in this important

field.
5th International Conference, PAKM 2004, Vienna, Austria, December 2-3, 2004, Proceedings
Proceedingas of AI-2005, the Twenty-fifth SGAI International Conference on Innovative
Techniques and Applications of Artificial Intelligence
Proceedings of ES2002, the Twenty-second SGAI International Conference on Knowledge
Based Systems and Applied Artificial Intelligence
Artificial Intelligence XXXVIII
Incorporating Applications and Innovations in Intelligent Systems XXIII
Research and Development in Intelligent Systems XXIX
International Conference, CIS 2005, Xi'an, China, December 15-19, 2005, Proceedings, Part I
Artificial Intelligence XXXV

This cross-disciplinary business book develops insight into the
management of businesses operating in various economic sectors that
take a proactive approach to the triple dimension of sustainability
(economic, social and environmental), positioning itself as a key
reference for both academics and practitioners in the wide area of
business management. The concept of sustainability is today at the
heart of international policies and debate, and plays a key role in deep
changes to the organizational models of companies operating in a wide
range of sectors of economic activity. In particular, this book aims to

gain a deeper understanding of how stakeholder engagement can contribute to value co-creation both in the company and along the supply chain, and what distinguishes the differing involvement of stakeholders, in particular between public involvement and stakeholder participation. Each chapter of this book presents different modalities of stakeholder involvement and develops the concept of value co-creation from organizational and marketing perspectives. This book is recommended reading for those interested in the fields of stakeholder engagement and theory, sustainability, business studies, and sustainable development.

The papers in this volume are the refereed application papers presented at AI-2006, the Twenty-sixth SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge in December 2006. The papers present new and innovative developments in the field. The series serves as a key reference as to how AI technology has enabled organisations to solve complex problems and gain significant business benefit.

The papers in this volume are the refereed application papers presented at AI-2007, the Twenty-seventh SGAI International

Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge in December 2007. The papers present new and innovative developments in the field, divided into sections on Synthesis and Prediction, Scheduling and Search, Diagnosis and Monitoring, Classification and Design, and Analysis and Evaluation. This is the fifteenth volume in the Applications and Innovations series. The series serves as a key reference on the use of AI Technology to enable organisations to solve complex problems and gain significant business benefits. The Technical Stream papers are published as a companion volume under the title Research and Development in Intelligent Systems XXIV.

The papers in this volume are the referred Applications papers presented at ES 2002, the Twenty-second SGES international Conference on Knowledge Based Systems and Applied Artificial Intelligence, to be held in Cambridge during December 2002. The Application stream is the largest annual showcase in Europe of real applications using AI technology. Papers presented in this volume describe the application of AI to address real-world problems, including commerce, manufacturing and defence and every major AI technique;

and highlight critical areas of success (and failure) and present the benefits and lessons of value to other developers. This is the tenth volume in the Applications and Innovations in Intelligent Systems series. The series serves as a key reference as to how AI technology has enabled organisations to solve complex problems and gain significant business benefits. The Technical Stream papers are published as a companion volume under the title Research and Development in Intelligent Systems XIX.