

Free pdf Mobility processes computers and agents (Download Only)

Mobile Agents and Security Mobile Agents in Networking and Distributed Computing Developing Intelligent Agent Systems Coordination of Internet Agents Agent Technology For E-Commerce Design of Agent-based Models Intelligent Information Agents Software Agents Agent Supported Cooperative Work Agents and Ambient Intelligence Intelligent Agents for Mobile and Virtual Media Application of Agents and Intelligent Information Technologies Multi-Agent Programming: Intelligent Agents V: Agents Theories, Architectures, and Languages Agent Engineering Socially Intelligent Agents Intelligent Agents and Multi-Agent Systems Understanding Agent Systems Multi-agent Systems Intelligent Information Agents Agents as Objects with Knowledge Base State Intelligent Agents and Their Applications Software Engineering for Multi-Agent Systems II Mobile Agents for Telecommunication Applications Heterogeneous Agent Systems Industrial Agents Constructing Intelligent Agents with Java Human-Computer Interaction: The Agency Perspective Software Engineering for Large-Scale Multi-Agent Systems X-Machines for Agent-Based Modeling The Space and Motion of Communicating Agents Multiagent Systems, second edition Software Agents for Future Communication Systems E-Commerce Agents Software Agents for Future Communication Systems Agents and Peer-to-Peer Computing Embodied Conversational Agents Multi-Agent Systems - Modeling, Control, Programming, Simulations and Applications Intelligent Agent Software Engineering Adaptive Agents and Multi-Agent Systems II

Mobile Agents and Security

2003-05-20

new paradigms can popularize old technologies a new standalone paradigm the electronic desktop popularized the personal computer a new connected paradigm the web browser popularized the internet another new paradigm the mobile agent may further popularize the internet by giving people greater access to it with less effort mobileagentparadigm the mobile agent paradigm integrates a network of computers in a novel way designed to simplify the development of network applications to an application developer the computers appear to form an electronic world of places occupied by agents each agent or place in the electronic world has the authority of an individual or an organization in the physical world the authority can be established for example cryptographically a mobile agent can travel from one place to another subject to the destination place s approval the source and destination places can be in the same computer or in different computers in either case the agent initiates the trip by executing a go instruction which takes as an argument the name or address of the destination place the next instruction in the agent s program is executed in the destination place rather than in the source place thus in a sense the mobile agent paradigm reduces networking to a program instruction a mobile agent can interact programmatically with the places it visits and if the other agents approve with the other agents it encounters in those places

Mobile Agents in Networking and Distributed Computing

2012-07-31

the book focuses on mobile agents which are computer programs that can autonomously migrate between network sites this text introduces the concepts and principles of mobile agents provides an overview of mobile agent technology and focuses on applications in networking and distributed computing

Developing Intelligent Agent Systems

2005-06-24

build your own intelligent agent system intelligent agent technology is a tool of modern computer science that can be used to engineer complex computer programmes that behave rationally in dynamic and changing environments applications range from small programmes that intelligently search the buying and selling goods via electronic commerce to autonomous space probes this powerful technology is not widely used however as developing intelligent agent software requires high levels of training and skill the authors of this book have developed and tested a methodology and tools for developing intelligent agent systems with this methodology prometheus developers can start agent oriented designs and implementations easily from scratch saving valuable time and resources developing intelligent agent systems not only answers the questions what are agents and why are they useful but also the crucial question how do i design and build intelligent agent systems the book covers everything a practitioner needs to know to begin to effectively use this technology including an introduction to the notion of agents a description of the concepts involved and a software engineering methodology read on for a practical step by step introduction to designing and building intelligent agent systems a full life cycle methodology for developing intelligent agent systems covering specification analysis design and implementation of agents pdt prometheus design tool software support for the prometheus design process the example of an electronic bookstore to illustrate the design process throughout the book electronic resources including the prometheus design tool pdt can be found at cs.rmit.edu.au/agents/prometheus this book is aimed at industrial software developers software engineers and at advanced undergraduate students it assumes knowledge of basic software engineering but does not require knowledge of artificial intelligence or of mathematics familiarity with java will help in reading the examples in chapter 10

Coordination of Internet Agents

2013-11-27

the internet confronts it researchers system designers and application developers with completely new challenges and as a fascinating new computing paradigm agent technology has recently attracted broad interest and strong hopes for shaping the future information society this monograph like anthology is the first systematic guide to models and enabling technologies for the coordination of intelligent agents on the internet and respective applications

Agent Technology For E-Commerce

2007-02-27

agents are computational systems that are capable of autonomous reactive and proactive behaviour and are also able to interact with each other the application of agents in e commerce is one of the fastest growing and most exciting areas of computer science this emerging technology is enabling individuals and businesses to take

advantage of the new and powerful medium of the world wide agent technology for e commerce introduces the main theory behind and the applications of agent technology in e commerce in a way that is accessible to students with a basic background in computer science bringing together economics game theory and multi agent systems in a clear and accessible way this book offers an introduction to agent technology and architectures as well as providing more in depth coverage of subjects such as negotiation auctions bargaining voting protocols and coalition formation mobile agents and issues of trust and security are also addressed containing exercises and topics for discussion this book is ideal for classroom use or self study and will be of considerable interest to computing and it professionals who wish explore the fast moving discipline of agent technology for e commerce

Design of Agent-based Models

2011

although there are plenty of publications dealing with the theory of multi agent systems and agent based simulations information about the practical development of such systems is scarce the aim of this book is to fill this empty space and to provide knowledge about design and development of agent based simulations in an easy and comprehensible way the book begins with the fundamentals of multi agent systems agent principles and their interaction and goes on to discuss the philosophy of agent based programming agent based models like any other scientific method have drawbacks and limitations which are presented in the book as well the main portion of the text is then devoted to a description of methodology and best practices for the design and development of agent based simulation software the methodology called agentology guides the reader through the entire development process from the formal definition of the problem through conceptual modeling and the selection of the particular development platform to the programming and debugging of the code itself and the final assessment of the model the visual language as the means of representation of the conceptual model is included the reader is also presented with a comparison of present multi agent development environments and tools which could be helpful for the selection of appropriate development instruments given that the theoretical foundation is presented in an accessible way and supported by many practical examples figures schemes and source codes this publication is especially suitable as a textbook for introductory graduate level courses on multi agent systems and agent based modeling besides appealing to students and the scientific community the monograph can aid software architects and developers who are not familiar with agent principles conveying valuable insights into this distinct computer paradigm

Intelligent Information Agents

2003-03-05

this book presents 10 chapters on various aspects of intelligent information agents contributed by members of the respective agentlink special interest group the papers are organized in three parts on agent based information systems adaptive information agents and coordination of information agents also included are a comprehensive introduction and surveys for each of the three parts

Software Agents

1997

the essays in software agents by leading researchers and developers of agent based systems address both the state of the art in agent technology and its likely evolution in the near future

Agent Supported Cooperative Work

2012-12-06

improvements in computer networking have heralded great expectations for computer mediated distributed work however experience has revealed that as information flow improves a central problem for distributed workers is the administration management and control of that information research into computer supported cooperative work cscw investigates design methods and technologies for the support of collaboration communication and coordination of distributed group work both within and among organizations in tandem with this focus on the support of distributed communication and collaboration there have been exciting developments in the fields of intelligent agents and distributed artificial intelligence dai notably in the concepts theories and deployment of intelligent agents as a means of distributing computer based problem solving expertise the paradigm of multi agent systems forms a proposed basis for the design of cscw architectures the support of cscw operations and for addressing some of the problems of cooperative working the application of a multi agent approach to cscw makes information exchange among the participants easier by delivering support to the participants assisting workflows and procedures and providing convenient user interfaces to cscw systems furthermore the ideas inherent in such an approach are also applicable to other domains such as support for interactive learning organizations that seek to exploit the advantages offered through cscw will benefit from the integration of agents in the management and use of their corporate knowledge especially with the advancement of wired or wireless networking pervasive computing and other information technologies agent supported cooperative work describes the state of the art in

this exciting new area covering both theoretical foundations and practical applications of ascw it is the first book explicitly dedicated to ascw bringing together contributions from international experts in the field

Agents and Ambient Intelligence

2012-05-10

the concept of an intelligent agent a computational system capable of performing certain tasks autonomously derived from the growing potential of digital computers in the mid 20th century and had been widely adopted by the early 1990s partly in parallel with this concept the perspective of ambient intelligence ami emerged in the late 1990s agent technology and ami have many similarities and the main purpose of this book is to provide an overview of the state of the art of the scientific area that integrates these two the book addresses a wide variety of topics related to agents and ami including theoretical practical design implementation ethical and philosophical issues the 12 chapters are arranged in four sections the first consists of three chapters discussing ethical and philosophical issues the second part explores various approaches that can be used to develop agent based ami systems the third part contains three chapters that share the goal to endow ami systems with useful properties like intelligence and adaptivity and the last section presents concrete applications of agent based ami systems this book provides an insight into recent achievements and future challenges at the intersection of agent technology and ambient intelligence and will assist the development of more intelligent flexible effective and user friendly systems as well as posing critical questions about the future of the role of agents within the ami perspective

Intelligent Agents for Mobile and Virtual Media

2012-12-06

as the internet and world wide continue to influence corporate and private activities systems are needed that mimic human to human interface to simplify the human to computer interface intelligent agents are likely to play a significant role in the design of such interfaces and this book explores how they could influence media based systems throughout the text maps out the considerable advances that have already been made paving the way toward a future where computers will be truly described as an intelligent aid to our personal and business lives

Application of Agents and Intelligent Information Technologies

2007

intelligent agent technology is emerging as one of the most important and rapidly advancing areas researchers are developing a number of agent based applications and multi agent systems in a variety of fields such as electronic commerce supply chain management resource allocation intelligent manufacturing mass customization industrial control information retrieval and filtering collaborative work mobile commerce decision support and computer games application of agents and intelligent information technologies presents an outstanding collection of the latest research associated with intelligent agents and information technologies application of agents and intelligent information technologies provides a comprehensive analysis of issues related to agent design implementation integration deployment evaluation and business value this book presents research results and application of agents and other intelligent information technologies in various domains application of agents and intelligent information technologies offers the intelligent information technologies that will potentially revolutionize the work environment as well as social computing

Multi-Agent Programming:

2009-06-13

multi agent systems are a promising technology to develop the next generation open distributed complex software systems the main focus of the research community has been on the development of concepts concerning both mental and social attitudes architectures techniques and general approaches to the analysis and specification of multi agent systems this contribution has been fragmented without any clear way of putting it all together rendering it inaccessible to students and young researchers non experts and practitioners successful multi agent systems development is guaranteed only if we can bridge the gap from analysis and design to effective implementation multi agent programming languages tools and applications presents a number of mature and influential multi agent programming languages platforms development tools and methodologies and realistic applications summarizing the state of the art in an accessible manner for professionals and computer science students at all levels

Intelligent Agents V: Agents Theories, Architectures, and Languages

2007-04-29

the leading edge of computer science research is notoriously ckle new trends come and go with alarming and unfailling regularity in such a rapidly changing eld the fact that research interest in a subject lasts more than a

year is worthy of note the fact that after ve years interest not only remains but actually continues to grow is highly unusual as 1998 marked the fth birthday of the international workshop on agent theories architectures and languages atal it seemed appropriate for the organizers of the original workshop to comment on this remarkable growth and re ect on how the eld has developed and matured the rst atal workshop was co located with the eleventh european conference on arti cial intelligence ecai 94 which was held in amsterdam the fact that we chose an ai conference to co locate with is telling at that time we expected most researchers with an interest in agents to come from the ai community the workshop which was planned over the summer of 1993 attracted 32 submissions and was attended by 55 people atal was the largest workshop at ecai 94 and the clear enthusiasm on behalf of the community made the decision to hold another atal workshop simple the atal 94 proceedings were formally published in january 1995 under the title intelligent agents and included an extensive review article a glossary a list of key agent systems and unusually for the proceedings of an academic workshop a full subject index the high scienti cand production values embodied by the atal 94 proceedings appear to have been recognized by the community and resulted in atal proceedings being the most successful sequence of books published in springer verlag s lecture notes in arti cial intelligence series

Agent Engineering

2001-06-01

agent engineering concerns the development of autonomous computational or physical entities capable of perceiving reasoning adapting learning cooperating and delegating in a dynamic environment it is one of the most promising areas of research and development in information technology computer science and engineering this book addresses some of the key issues in agent engineering what is meant by autonomous agents how can we build agents with autonomy what are the desirable capabilities of agents with respect to surviving they will not die and living they will furthermore enjoy their being or existence how can agents cooperate among themselves in order to achieve the optimal performance at the global level how much optimization at the local individual level and how much at the global level would be necessary

Socially Intelligent Agents

2002-05-31

the field of socially intelligent agents sia is a fast growing and increasingly important area that comprises highly active research activities and strongly interdisciplinary approaches socially intelligent agents edited by kerstin dautenhahn alan bond lola cañamero and bruce edmonds emerged from the aaai symposium socially intelligent agents the human in the loop the book provides 32 chapters written by leading sia researchers addressing topics such as social robotics embodied conversational agents affective computing anthropomorphism narrative and story telling social aspects in multi agent systems new technologies for education and therapy and more this breadth of topics covered in socially intelligent agents provides the reader with a comprehensive look at current research activities in the area socially intelligent agents serves as an excellent reference for a wide readership e g computer scientists roboticists web programmers and designers computer users cognitive scientists and other researchers interested in the study of how humans relate to computers and robots and how these agents in return can relate to humans this book is also suitable as research material in a variety of advanced level courses including applied artificial intelligence autonomous agents human computer interaction situated embodied ai

Intelligent Agents and Multi-Agent Systems

2003-10-24

five years ago with excitement and uncertainty we witnessed the birth of prima paci c rim international workshop on multi agents the rst prima in 1998 has now grown into prima 2003 the 6th paci c rim inter tional workshop on multi agents in seoul korea during a period of ve years the notion of agent research has grown so much that we hear the term agent on a daily basis various elds such as business the software engineering on line games and such are now using the term agent as a placeholder just like the term object is used in the object oriented paradigm on the other hand the research area has extended toward real applications such as the semantic and ubiquitous computing the themes of prima 2003 re ected the following trends agent based electronic commerce auctions and markets agent architectures and their applications agent communication languages dialog and interaction protocols agent ontologies agent programming languages frameworks and toolkits agent cities agents and grid computing agents and peer computing agents and the semantic agents and services arti cial social systems conflict resolution and negotiation evaluation of multi agent systems languages and techniques for describing multi agent systems meta modeling and meta reasoning multi agent planning and learning multi agent systems and their applications social reasoning agent modeling and organization standards for agents and multi agent systems teams and coalitions ubiquitous agents

Understanding Agent Systems

2013-12-20

mark d inverno and michael luck present a formal approach to dealing with agents and agent systems in this second edition of understanding agent systems the z specification language is used to establish an accessible and unified formal account of agent systems and inter agent relationships in particular the framework provides precise and unambiguous meanings for common concepts and terms for agent systems allows for the description of alternative agent models and architectures and serves as a foundation for subsequent development of increasingly refined agent concepts the practicability of this approach is verified by applying the formal framework to three detailed case studies the book will appeal equally to researchers students and professionals in industry

Multi-agent Systems

1999

in this book jacques ferber has brought together all the recent developments in the field of multi agent systems an area that has seen increasing interest and major developments over the last few years the author draws on work carried out in various disciplines including information technology sociology and cognitive psychology to provide a coherent and instructive picture of the current state of the art the book introduces and defines the fundamental concepts that need to be understood clearly describes the work that has been done and invites readers to reflect upon the possibilities of the future

Intelligent Information Agents

2011-12-28

this book covers a broad range of intelligent information agents presenting the latest state of the art research in the field each section is systematically and coherently introduced including coverage of cooperative information systems and agents rational information agents and electronic commerce adaptive information agents and mobile information agents and security on the internet focusing on applications of intelligent agents on the world wide this reference will prove invaluable to professionals involved in this rapidly growing application of artificial intelligence

Agents as Objects with Knowledge Base State

1999-03-19

advances in computer technology in general and computer networks in particular have significantly affected the requirements of modern applications where the need to operate in decentralised environments is of primary importance the conceptual models of the applications are also becoming complex and semantically rich a promising technology towards the design and development of systems of such domains is agent based systems agents having a knowledge component act and interact with other agents and information sources in order to achieve some goals platforms intended for supporting the development of such systems should offer a number of features including communication concurrency mobility high level data structures object orientation etc this book describes the design and implementation of such a language platform called april and its use on a number of applications methodologically in designing and implementing the language a layered approach has been adopted april has been developed as a series of macro defined layers on top of the relatively primitive features of a pre existing language called april on top of april an agent layer has been built as a set of pre defined classes for constructing agent based systems this layer has been customised for specific application domains considered this includes a mobile agent application a distributed database application and a network management one contents introduction background materialthe building blocksthe april language april adding objects to aprilaprilq the database extensionapril objects with knowledge base statethe implementation of april the applications component based agent constructionan agent for multi service network managementepilogue readership graduate students academics and research scientists agent oriented systems distributed systems and applications developers programming language designers and developers

Intelligent Agents and Their Applications

2002-03-25

intelligent agents are one of the most promising business tools in our information rich world an intelligent agent consists of a software system capable of performing intelligent tasks within a dynamic and unpredictable environment they can be characterised by various attributes including autonomous adaptive collaborative communicative mobile and reactive many problems are not well defined and the information needed to make decisions is not available these problems are not easy to solve using conventional computing approaches here the intelligent agent paradigm may play a major role in helping to solve these problems this book written for application researchers covers a broad selection of research results that demonstrate in an authoritative and clear manner the applications of agents within our information society

Software Engineering for Multi-Agent Systems II

2004-02-24

advances in networking technology have revitalized the investigation of agent technologies as a promising paradigm for engineering complex distributed software systems agent technology has been applied to a wide range of application mains including e commerce human computer interfaces telecommunications and software assistants multi agent systems mass and their underlying theories provide a more natural support for ensuring important properties such as autonomy mobility environment heterogeneity organization openness and intelligence as a consequence agent based systems are likely to provide new approaches to dealing with the complexity of developing and maintaining modern software however developing robust large scale agent based systems will require new software engineering approaches there are currently many methods and techniques for working with individual agents or with systems built using only a few agents unfortunately agent based software engineering is still in its infancy and existing software engineering approaches are unable to cope with large mass the complexity associated with a large mass is considerable when a huge number of agents interact over heterogeneous environments various phenomena occur which are not as easy to capture as when only a few agents are working together as the multiple software agents are highly collaborative and operate in networked environments they have to be context aware and deal with environment uncertainty this makes their coordination and management more difficult and increases the likelihood of exceptional situations such as security holes privacy violations and unexpected global effects moreover as users and software engineers delegate more autonomy to their mass and put more trust in their results new concerns arise in real life applications

Mobile Agents for Telecommunication Applications

2000-09-06

mobile agents refer to self contained and identifiable computer programs that can move within the network and can act on behalf of the user or another entity most of the current research work on the mobile agent paradigm has two general goals reduction of network traffic and asynchronous interaction these two goals stem directly from the desire to reduce information overload and to efficiently use network resources there are certainly many motivations for the use of a mobile agent paradigm however intelligent information retrieval network and mobility management and network services are currently the three most cited application targets for a mobile agent system the aim of the workshop is to provide a unique opportunity for researchers software and application developers and computer network technologists to discuss new developments in the mobile agent technology and applications after last year's very successful workshop in ottawa canada 110 attendees this year's workshop will focus on mobile agent issues across the areas of network management mobile applications nomadic computing e commerce ad hoc networks and applications feature interactions internet applications qos management policy based management interactive multimedia and computer telephony integration

Heterogeneous Agent Systems

2001-06

after a discussion of the theory of software agents this book presents impact interactive maryland platform for agents collaborating together an experimental agent infrastructure that translates formal theories of agency into a functional multiagent system that can extend legacy software code and application specific or legacy data structures

Industrial Agents

2015-02-12

industrial agents explains how multi agent systems improve collaborative networks to offer dynamic service changes customization improved quality and reliability and flexible infrastructure learn how these platforms can offer distributed intelligent management and control functions with communication cooperation and synchronization capabilities and also provide for the behavior specifications of the smart components of the system the book offers not only an introduction to industrial agents but also clarifies and positions the vision on going efforts example applications assessment and roadmap applicable to multiple industries this edited work is guided and co authored by leaders of the ieee technical committee on industrial agents who represent both academic and industry perspectives and share the latest research along with their hands on experiences prototyping and deploying industrial agents in industrial scenarios learn how new scientific approaches and technologies aggregate resources such next generation intelligent systems manual workplaces and information and material flow system gain insight from experts presenting the latest academic and industry research on multi agent systems explore multiple case studies and example applications showing industrial agents in a variety of scenarios understand implementations across the enterprise from low level control systems to autonomous and collaborative management units

Constructing Intelligent Agents with Java

1998-01-07

intelligent agents with java tm a programmer s guide to smarter applications add artificial intelligence to your java applications learn to design and implement agent based reasoning modeling and learning build your own personal assistants agents e commerce agents and multiagent systems learn how to create intelligent agents that can automate mediate and administer basic business functions java makes it easier than ever for programmers to build complex agents that reason and learn in this book enterprise programming experts joe and jennifer bigus show you how to take advantage of java s advanced features to differentiate your applications and build the smartest high powered applications possible the authors explain the principles of ai program design using java s object oriented features and present the essential ai algorithms used to develop agents that reason model and learn to adapt to the world around them they then show how to apply these algorithms and techniques in practical real world distributed computing applications they develop an intelligent agent architecture and use it to construct several agent enhanced programs including a pc management agent an adaptive internet news reader that filters articles based on user preferences and an electronic marketplace application where agents do the buying and selling the enclosed cd rom gives you complete source code for java implementations of ai search algorithms rule based inferencing and neural network learning java source code for three practical intelligent agent applications the ibm agent building environment abe developer s toolkit

Human-Computer Interaction: The Agency Perspective

2012-01-20

agent centric theories approaches and technologies are contributing to enrich interactions between users and computers this book aims at highlighting the influence of the agency perspective in human computer interaction through a careful selection of research contributions split into five sections users as agents agents and accessibility agents and interactions agent centric paradigms and approaches and collective agents the book covers a wealth of novel original and fully updated material offering to provide a coherent in depth and timely material on the agency perspective in hci to offer an authoritative treatment of the subject matter presented by carefully selected authors to offer a balanced and broad coverage of the subject area including human organizational social as well as technological concerns ü to offer a hands on experience by covering representative case studies and offering essential design guidelines the book will appeal to a broad audience of researchers and professionals associated to software engineering interface design accessibility as well as agent based interaction paradigms and technology

Software Engineering for Large-Scale Multi-Agent Systems

2003-04-15

nowadays engineering large scale software systems means dealing with complex systems composed of pervasive software components that move around and adapt to nondeterministic and open environments like the internet in order to achieve systems design goals through the coordination of autonomously distributed services the agent metaphor in particular software agents and multi agent systems mas constitutes a promising approach for covering most of the software development life cycle from conceptual modeling and requirements specification to architectural definition design and implementation this book presents 17 carefully reviewed papers arranged in order to provide a coherent survey of how to exploit agent properties and mas issues in today s software systems the book offers the following topical sections software engineering foundations requirements engineering and software architecture coordination and mobility reuse dependability empirical studies and applications

X-Machines for Agent-Based Modeling

2017-08-30

from the foreword this book exemplifies one of the most successful approaches to modeling and simulating the new generation of complex systems flame was designed to make the building of large scale complex systems models straightforward and the simulation code that it generates is highly efficient and can be run on any modern technology flame was the first such platform that ran efficiently on high performance parallel computers and a version for gpu technology is also available at its heart and the reason why it is so efficient and robust is the use of a powerful computational model communicating x machines which is general enough to cope with most types of modelling problems as well as being increasingly important in academic research flame is now being applied in industry in many different application areas this book describes the basics of flame and is illustrated with numerous examples professor mike holcombe university of sheffield uk agent based models have shown applications in various fields such as biology economics and social science over the years multiple agent based modeling frameworks have been produced allowing experts with non computing background to easily write and simulate their models however most of these models are limited by the capability of the framework the time it takes for a simulation to finish or how to handle the massive amounts of data produced flame flexible large scale agent based modeling environment was produced and developed through the years to address these issues this

book contains a comprehensive summary of the field covers the basics of flame and shows how concepts of x machines can be stretched across multiple fields to produce agent models it has been written with several audiences in mind first it is organized as a collection of models with detailed descriptions of how models can be designed especially for beginners a number of theoretical aspects of software engineering and how they relate to agent based models are discussed for students interested in software engineering and parallel computing finally it is intended as a guide to developers from biology economics and social science who want to explore how to write agent based models for their research area by working through the model examples provided anyone should be able to design and build agent based models and deploy them with flame they can easily increase the agent number and run models on parallel computers in order to save on simulation complexity and waiting time for results because the field is so large and active the book does not aim to cover all aspects of agent based modeling and its research challenges the models are presented to show researchers how they can build complex agent functions for their models the book demonstrates the advantage of using agent based models in simulation experiments providing a case to move away from differential equations and build more reliable close to real models the open access version of this book available at doi org 10 1201 9781315370729 has been made available under a creative commons attribution non commercial no derivatives 4 0 license

The Space and Motion of Communicating Agents

2009-03-19

the world is increasingly populated with interactive agents distributed in space real or abstract these agents can be artificial as in computing systems that manage and monitor traffic or health or they can be natural e g communicating humans or biological cells it is important to be able to model networks of agents in order to understand and optimize their behavior robin milner describes in this book just such a model by presenting a unified and rigorous structural theory based on bigraphs for systems of interacting agents this theory is a bridge between the existing theories of concurrent processes and the aspirations for ubiquitous systems whose enormous size challenges our understanding the book is self contained mathematically and is designed to be learned from examples and exercises abound solutions for the latter are provided

Multiagent Systems, second edition

2016-10-28

the new edition of an introduction to multiagent systems that captures the state of the art in both theory and practice suitable as textbook or reference multiagent systems are made up of multiple interacting intelligent agents computational entities to some degree autonomous and able to cooperate compete communicate act flexibly and exercise control over their behavior within the frame of their objectives they are the enabling technology for a wide range of advanced applications relying on distributed and parallel processing of data information and knowledge relevant in domains ranging from industrial manufacturing to e commerce to health care this book offers a state of the art introduction to multiagent systems covering the field in both breadth and depth and treating both theory and practice it is suitable for classroom use or independent study this second edition has been completely revised capturing the tremendous developments in multiagent systems since the first edition appeared in 1999 sixteen of the book s seventeen chapters were written for this edition all chapters are by leaders in the field with each author contributing to the broad base of knowledge and experience on which the book rests the book covers basic concepts of computational agency from the perspective of both individual agents and agent organizations communication among agents coordination among agents distributed cognition development and engineering of multiagent systems and background knowledge in logics and game theory each chapter includes references many illustrations and examples and exercises of varying degrees of difficulty the chapters and the overall book are designed to be self contained and understandable without additional material supplemental resources are available on the book s site contributors rafael bordini felix brandt amit chopra vincent conitzer virginia dignum jürgen dix ed durfee edith elkind ulle endriss alessandro farinelli shaheen fatima michael fisher nicholas r jennings kevin leyton brown evangelos markakis lin padgham julian padget iyad rahwan talal rahwan alex rogers jordi sabater mir yoav shoham munindar p singh kagan tumer karl tuyls wiebe van der hoek laurent vercouter meritxell vinyals michael winikoff michael wooldridge shlomo zilberstein

Software Agents for Future Communication Systems

1999

agent technology has recently become one of the most vibrant and fastest growing areas in information technology and advanced digital communication is a central enabling technology for the coming information society so software agents and their exploitation for future communication systems are attracting particular attention from the research and development community as well as from economic and user communities interested in everyday private and professional digital communication applications this monograph like anthology is the first systematic introduction to software agents and future communication systems fifteen coherently written chapters by leading software agent researchers provide complementary coverage of the relevant issues multi agent systems and mobile agent approaches are presented in a well balanced way and applied to most important topics in future communication systems in addition the volume editors have provided a detailed

introductory survey chapters

E-Commerce Agents

2001-04-18

among the many changes brought by the internet is the emergence of electronic commerce over the e commerce activities such as the online exchange of information services and products are opening up completely new opportunities for business at new levels of productivity and profitability in parallel with the emergence of e commerce intelligent software agents as entities capable of independent action in open unpredictable environments have matured into a promising new technology quite naturally e commerce agents hold great promise for exploiting the internet s full potential as an electronic marketplace the 20 coherently written chapters in this book by leading researchers and professionals present the state of the art in agent mediated e commerce researchers professionals and advanced students interested in e commerce or agent technology will find this book an indispensable source of information and reference

Software Agents for Future Communication Systems

1999-05-04

peer to peer p2p computing is currently attracting enormous public attention spurred by the popularity of file sharing systems such as napster gnutella morpheus kaza and several others in p2p systems a very large number of autonomous computing nodes the peers rely on each other for services p2p networks are emerging as a new distributed computing paradigm because of their potential to harness the computing power and the storage capacity of the hosts composing the network and because they realize a completely open decentralized environment where everybody can join in autonomously although researchers working on distributed computing multiagent systems databases and networks have been using similar concepts for a long time it is only recently that papers motivated by the current p2p paradigm have started appearing in high quality conferences and workshops in particular research on agent systems appears to be most relevant because multiagent systems have always been thought of as networks of autonomous peers since their inception agents which can be superimposed on the p2p architecture embody the description of task environments decision support capabilities social behaviors trust and reputation and interaction protocols among peers the emphasis on decentralization autonomy ease and speed of growth that gives p2p its advantages also leads to significant potential problems most prominent among these are coordination the ability of an agent to make decisions on its own actions in the context of activities of other agents and scalability the value of the p2p systems in how well they self organize so as to scale along several dimensions including complexity heterogeneity of peers robustness traffic redistribution etc this book brings together an introduction three invited articles and revised versions of the papers presented at the second international workshop on agents and peer to peer computing ap2pc 2003 held in melbourne australia july 2003

Agents and Peer-to-Peer Computing

2004-11-18

this book describes research in all aspects of the design implementation and evaluation of embodied conversational agents as well as details of specific working systems embodied conversational agents are computer generated cartoonlike characters that demonstrate many of the same properties as humans in face to face conversation including the ability to produce and respond to verbal and nonverbal communication they constitute a type of a multimodal interface where the modalities are those natural to human conversation speech facial displays hand gestures and body stance b software agent insofar as they represent the computer in an interaction with a human or represent their human users in a computational environment as avatars for example and c dialogue system where both verbal and nonverbal devices advance and regulate the dialogue between the user and the computer with an embodied conversational agent the visual dimension of interacting with an animated character on a screen plays an intrinsic role not just pretty pictures the graphics display visual features of conversation in the same way that the face and hands do in face to face conversation among humans this book describes research in all aspects of the design implementation and evaluation of embodied conversational agents as well as details of specific working systems many of the chapters are written by multidisciplinary teams of psychologists linguists computer scientists artists and researchers in interface design the authors include elisabeth andre norm badler gene ball justine cassell elizabeth churchill james lester dominic massaro cliff nass sharon oviatt isabella poggi jeff rickel and greg sanders

Embodied Conversational Agents

2000

multiagent systems consist of multiple autonomous entities having different information and or diverging interests the study of multiagent systems mas focuses on systems in which many intelligent agents interact with each other the agents are considered to be autonomous entities such as software programs or robots their interactions can be

either cooperative or selfish that is the agents can share a common goal e.g. an ant colony or they can pursue their own interests multi agent systems can be used to solve problems that are difficult or impossible for an individual agent or a monolithic system to solve intelligence may include some methodic functional procedural approach algorithmic search or reinforcement learning although there is considerable overlap a multi agent system is not always the same as an agent based model abm the goal of an abm is to search for explanatory insight into the collective behavior of obeying simple rules typically in natural systems rather than in solving specific practical or engineering problems topics where multi agent systems research may deliver an appropriate approach include online trading disaster response and modelling social structures multi agent systems consist of agents and their environment typically multi agent systems research refers to software agents however the agents in a multi agent system could equally well be robots humans or human teams a multi agent system may contain combined humanagent teams agent systems are open and extensible systems that allow for the deployment of autonomous and proactive software components multi agent systems have been brought up and used in several application domains this book multi agent systems modeling control programming simulations and applications is intended to provide an emphasise on the multi agent technology products and industrial applications

Multi-Agent Systems - Modeling, Control, Programming, Simulations and Applications

2016-04-01

twenty eight researchers and scholars from europe and australia contribute ten chapters on the theories and practices of intelligent software agents topics include machine learning for agents and multi agent systems architectures for cognitive and a life agents a versatile multiagent framework for distributed information management tasks a formal method for the development of agent based systems emotionally intelligent agents evolutionary computation theories and practices the use of agents in electronic commerce environments object oriented methodologies to support agent oriented technology organization oriented design methodology for agent societies and a multiagent system approach for building computer programs annotation copyrighted by book news inc portland or

Intelligent Agent Software Engineering

2003

adaptive agents and multi agent systems is an emerging and exciting interdisciplinary area of research and development involving artificial intelligence software engineering and developmental biology as well as cognitive and social science this book presents 17 revised and carefully reviewed papers taken from two workshops on the topic as well as 2 invited papers by leading researchers in the area the papers deal with various aspects of machine learning adaptation and evolution in the context of agent systems and autonomous agents

Adaptive Agents and Multi-Agent Systems II

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