

# **Embodied Conversational Agents Hb**

**Justine Cassell** 

#### **Embodied Conversational Agents Hb:**

Embodied Conversational Agents Justine Cassell, 2000 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 Handbook of Virtual Humans Nadia Magnenat-Thalmann, Daniel Thalmann, 2005-10-31 Virtual Humans are becoming more and more popular and used in many applications such as the entertainment industry in both film and games and medical applications. This comprehensive book covers all areas of this growing industry including face and body motion body modelling hair simulation expressive speech simulation and facial communication interaction with 3D objects rendering skin and clothes and the standards for Virtual Humans Written by a team of current and former researchers at MIRALab University of Geneva or VRlab EPFL this book is the definitive guide to the area Explains the concept of avatars and autonomous virtual actors and the main techniques to create and animate them body and face Presents the concepts of behavioural animation crowd simulation intercommunication between virtual humans and interaction between real humans and autonomous virtual humans Addresses the advanced topics of hair representation and cloth animation with applications in fashion design Discusses the standards for Virtual Humans such as MPEG 4 Face Animation and MPEG 4 Body Animation Pervasive Computing <u>Technologies for Healthcare</u> Hadas Lewy, Refael Barkan, 2022-03-22 This book constitutes the refereed proceedings of the 15th International Conference on Pervasive Computing Technologies for Healthcare Pervasive Health 2021 held in December 2021 Due to COVID 19 pandemic the conference was held virtually The 28 full and 7 short papers were selected from 74 submissions and are organized in 3 main tracks hospitality and community care homecare and medical education The COVID

19 pandemic was challenging all dimensions of Pervasive Health PH and traditional ways of monitoring diagnosing treating and communicating changed dramatically New Advances in Virtual Humans Nadia Magnenat-Thalmann, N. Ichalkaranje, 2008-09-03 In this book various aspects of cognitive and emotional behaviour is described In chapter one a state of the art introduction to VH is presented and the associated research is given In Chapter 2 cognitive and emotions processes are described A Comprehensive context model for multi party interactions with the VH is given in the next chapter Finally it is very important to model the socializing of groups of virtual humans This is discussed in Chapter 4 The automatic modelling of expressions for VH is described in Chapter 5 The last chapter gives a case study of an intelligent kios avatar and its usability This book gives examples of some advances that enable VH to behave intelligently It provides an overview of these research problems and some unsolved problems Applied Physics, System Science and Computers III Klimis Ntalianis, George Vachtsevanos, Pierre Borne, Anca Croitoru, 2019-06-27 This book reports on advanced theories and methods in three related fields of research applied physics system science and computers The first part covers applied physics topics such as lasers and accelerators fluid dynamics optics and spectroscopy among others It also addresses astrophysics security and medical and biological physics The second part focuses on advances in computers such as those in the area of social networks games internet of things deep learning models and more The third part is especially related to systems science covering swarm intelligence smart cities complexity and more Advances in and application of computer communication artificial intelligence data analysis simulation and modeling are also addressed The book offers a collection of contributions presented at the 3nd International Conference on Applied Physics System Science and Computers APSAC held in Dubrovnik Croatia on September 26 28 2018 Besides presenting new methods it is also intended to promote collaborations between different communities working on related topics at the interface between physics computer science and engineering

Modelling Machine Emotions for Realizing Intelligence Toyoaki Nishida, Colette Faucher, 2010-06-21 Emotion connects the thought to the body which is a magnificent biological vice for sensing and affecting the world The thought controls the body through emotions The body affects the thought through emotions Through this mec nism the thought allows the agent to behave intelligently in the complex world filled with a huge amount of dynamic information The emotion maps a flux of information into a space which the agent is familiar with enabling her him to associate ongoing events with past experiences which help to reduce complexity by providing with a nominal solution Recent findings in brain science suggest that mirror neurons map visual signals into motor signals for the body This mechanism might permit one to experience the emotion of the other agent just by feeling the motor signals caused by mirror neurons as a result of visual stimuli caused by the other agent s emotional beh iors In particular it might play a significant role in invoking empathy in a social situation It may not be hard to think about what might happen to emotion less machines The emotion less machines may not be able to accumulate experiences to avoid serious failures They may not be able to communicate with the humans

in an empathetic way From Brows to Trust Zsófia Ruttkay, Catherine Pelachaud, 2006-02-19 Embodied conversational agents ECAs are autonomous software entities with human like appearance and communication skills These agents can take on a number of different roles for example as an assistant tutor information provider or customer service agent They may also simply represent or entertain a user The precise nature and benefits of different characteristics of ECAs requires careful investigation Questions range from the function of an eyebrow raise to mechanisms for assessing and improving ECA trustworthiness This book will help experts and designers in the specification and development of applications incorporating ECAs Part 1 provides guidelines for evaluation methodologies and the identification of design and evaluation parameters Part 2 demonstrates the importance of considering the user's perspective and interaction experience Part 3 addresses issues in fine tuning design parameters of ECAs and verifying the perceived effect Finally in Part 4 lessons learned from a number of application case studies are presented The book is intended for both ECA researchers in academia and industry and developers and designers interested in applying the technology **Advances in Natural Multimodal Dialogue Systems** Jan van Kuppevelt, Laila Dybkjær, Niels Ole Bernsen, 2006-06-28 References 74 Part II Annotation and Analysis of Multimodal Data Speech and Gesture 4 FORM 79 Craig H Martell 1 Introduction 79 2 Structure of FORM 80 3 Annotation Graphs 85 4 Annotation Example 86 5 Preliminary Inter Annotator Agreement Results 88 6 Conclusion Applications to HLT and HCI 90 Appendix Other Tools Schemes and Methods of Gesture Analysis 91 References 95 5 97 On the Relationships among Speech Gestures and Object Manipulation in Virtual Environments Initial Evidence Andrea Corradini and Philip R Cohen 1 Introduction 97 2 Study 99 3 Data Analysis 101 4 Results 103 5 Discussion 106 6 Related Work 106 7 Future Work 108 8 Conclusions 108 Appendix Questionnaire MYST III EXILE 110 References 111 6 113 Analysing Multimodal Communication Patrick G T Healey Marcus Colman and Mike Thirlwell 1 Introduction 113 2 Breakdown and Repair 117 3 Analysing Communicative Co ordination 125 4 Discussion 126 References 127 7 131 Do Oral Messages Help Visual Search No lle Carbonell and Suzanne Kieffer 1 Context and Motivation 131 2 Methodology and Experimental Set Up 134 3 Results Presentation and Discussion 141 4 Conclusion 153 References 154 Contents vii 8 159 Geometric and Statistical Approaches to Audiovisual Segmentation Trevor Darrell John W Fisher III Kevin W Wilson and Michael R Siracusa 1 Introduction 159 2 Related Work 160 3 Multimodal Multisensor Domain 162 4 Results 166 5 Single Multimodal Sensor Domain 167 6

**Persuasive Technology** Thomas MacTavish, Santosh Basapur, 2015-05-25 This book constitutes the refereed proceedings of the 10th International Conference on Persuasive Technology PERSUASIVE 2015 held in Chicago IL USA in June 2015 The 19 revised full papers and 5 revised short papers presented were carefully reviewed and selected from 41 submissions The papers are grouped in topical sections on understanding individuals empowering individuals and understanding and empowering communities **Social Computing and Social Media** Adela Coman, Simona Vasilache, 2024-05-31 This book constitutes the refereed proceedings of the 16th International Conference on Social

Computing and Social Media SCSM 2024 held as part of the 26th HCI International Conference HCII 2024 which took place in Washington DC USA during June 29 July 4 2024 The total of 1271 papers and 309 posters included in the HCII 2024 proceedings was carefully reviewed and selected from 5108 submissions The SCSM 2024 proceedings were organized in the following topical sections Part I Designing developing and evaluating social media user experience and user behavior in social media AI and language models in social media Part II Social media in learning education and culture social media in business and ecommerce Part III Computer mediated communication social media for community society and democracy

Your Virtual Butler Robert Trappl,2013-03-12 In most scenarios of the future a personalized virtual butler appears This butler not only performs communication and coordination tasks but also gives recommendations on how to handle everyday problems The aim of this book is to explore the prerequisites of such a personalized virtual butler by asking what is known about the capacities and the needs of aging people which information and communication technologies have been used in assisting conversing with persons especially older ones and what were the results what are the advantages disadvantages of virtual butlers as mainly software programs compared robots as butlers and which methods especially in artificial intelligence have to be developed further and in which direction in order to create a virtual butler in the foreseeable future

XII Mediterranean Conference on Medical and Biological Engineering and Computing 2010 Nicolas Pallikarakis, Panagiotis D. Bamidis, 2010-05-28 Over the past three decades the exploding number of new technologies and applications introduced in medical practice often powered by advances in biosignal processing and biomedical imaging created an amazing account of new possibilities for diagnosis and therapy but also raised major questions of appropriateness and safety The accelerated development in this field alongside with the promotion of electronic health care solutions is often on the basis of an uncontrolled diffusion and use of medical technology The emergence and use of medical devices is multiplied rapidly and today there exist more than one million different products available on the world market Despite the fact that the rising cost of health care partly resulting from the new emerging technological applications forms the most serious and urgent problem for many governments today another important concern is that of patient safety and user protection issues that should never be compromised and expelled from the Biomedical Engineering research practice agenda

Databases in Networked Information Systems Shinji Kikuchi, Shelly Sachdeva, Subhash Bhalla, 2010-06-10 This book constitutes the refereed proceedings of the 6th International Workshop on Databases in Networked Information Systems DNIS 2010 held in Aizu Wakamatsu Japan in October 2010 The 13 revised full papers presented together with 9 invited talks and 1 keynote lecture were carefully reviewed and selected for inclusion in the book The workshop generally puts the main focus on data semantics and infrastructure for information management and interchange The papers are organized in topical sections on networked information systems infrastructure access to information resources information and knowledge management systems information extraction from data resources and geo spatial decision making

Biologically Inspired

Intelligent Robots Yoseph Bar-Cohen, Cynthia L. Breazeal, 2003 The multidisciplinary issues involved in the development of biologically inspired intelligent robots include materials actuators sensors structures functionality control intelligence and autonomy This book reviews various aspects ranging from the biological model to the vision for the future **Emotions and** Affect in Human Factors and Human-Computer Interaction Myounghoon Jeon, 2017-04-05 Emotions and Affect in Human Factors and Human Computer Interaction is a complete guide for conducting affect related research and design projects in H F and HCI domains Introducing necessary concepts methods approaches and applications the book highlights how critical emotions and affect are to everyday life and interaction with cognitive artifacts The text covers the basis of neural mechanisms of affective phenomena as well as representative approaches to Affective Computing Kansei Engineering Hedonomics and Emotional Design The methodologies section includes affect induction techniques measurement techniques detection and recognition techniques and regulation models and strategies The application chapters discuss various H F and HCI domains product design human robot interaction behavioral health and game design and transportation Engineers and designers can learn and apply psychological theories and mechanisms to account for their affect related research and can develop their own domain specific theory. The approach outlined in this handbook works to close the existing gap between the traditional affect research and the emerging field of affective design and affective computing Provides a theoretical background of affective sciences Demonstrates diverse affect induction methods in actual research settings Describes sensing technologies such as brain computer interfaces facial expression detection and more Covers emotion modeling and its application to regulation processes Includes case studies and applied examples in a variety of H F and HCI application areas Addresses emerging interdisciplinary areas including Positive Technology Subliminal Perception Physiological Computing and Aesthetic Computing The Oxford Handbook of Lifelong Learning Manuel London, 2011-03-11 The Oxford Handbook of Lifelong Learning is a comprehensive and interdisciplinary examination of the theory and practice of lifelong learning encompassing perspectives from human resources development adult learning psychology career and vocational learning management and executive development cultural anthropology the humanities and gerontology of Computer Graphics and Games Newton Lee, 2024-01-10 Encyclopedia of Computer Graphics and Games ECGG is a unique reference resource tailored to meet the needs of research and applications for industry professionals and academic communities worldwide The ECGG covers the history technologies and trends of computer graphics and games Editor Newton Lee Institute for Education Research and Scholarships Los Angeles CA USA Academic Co Chairs Shlomo Dubnov Department of Music and Computer Science and Engineering University of California San Diego San Diego CA USA Patrick C K Hung University of Ontario Institute of Technology Oshawa ON Canada Jaci Lee Lederman Vincennes University Vincennes IN USA Industry Co Chairs Shuichi Kurabayashi Cygames Inc FORTH ICS Heraklion Greece University of Crete Heraklion Greece Florian Richoux Nantes Atlantic Computer Science Laboratory LINA Universit de Nantes Nantes France Andrea

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Computational Approaches for Human-Human and Human-Robot Social Interactions Vittorio Murino, Cigdem Beyan, Gentiane Venture, Agnieszka Wykowska, 2020-06-26 This eBook is a collection of articles from a Frontiers Research Topic Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series they are collections of at least ten articles all centered on a particular subject With their unique mix of varied contributions from Original Research to Review Articles Frontiers Research Topics unify the most influential researchers the latest key findings and historical advances in a hot research area Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office frontiers in org about contact Intelligent Virtual Agents Zsófia Ruttkay, Michael Kipp, Anton Nijholt, Hannes Högni Vilhjálmsson, 2009-09-19 Welcome to the proceedings of the 9th International Conference on Intelligent Virtual Agents held September 14 16 2009 in Amsterdam The Netherlands Intelligent virtual agents IVAs are interactive characters that exhibit hum like qualities and communicate with humans or with each other using natural human modalities such as speech and gesture They are capable of real time perception cognition and action allowing them to participate in a dynamic physical and social environment IVA is an interdisciplinary annual conference and the main forum for p senting research on modeling developing and evaluating IVAs with a focus on communicative abilities and social behavior The development of IVAs requires expertise in multimodal interaction and several AI elds such as cognitive m eling planning vision and natural language processing Computational models are typically based on experimental studies and theories of human human and human robot interaction conversely IVA technology may provide interesting lessons for these elds The realization of engaging IVAs is a challenging task so reusable modules and tools are of great value The elds of application range from robot assistants social simulation and tutoring to games and artistic ploration

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