

Human Computation

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Human Computation Luis Von Ahn

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Human Computation Edith Law, Luis von Ahn, 2011-08-08 Human computation is a new and evolving research area that centers around harnessing human intelligence to solve computational problems that are beyond the scope of existing Artificial Intelligence AI algorithms With the growth of the Web human computation systems can now leverage the abilities of an unprecedented number of people via the Web to perform complex computation There are various genres of human computation applications that exist today Games with a purpose e g the ESP Game specifically target online gamers who generate useful data e g image tags while playing an enjoyable game Crowdsourcing marketplaces e g Amazon Mechanical Turk are human computation systems that coordinate workers to perform tasks in exchange for monetary rewards In identity verification tasks users perform computation in order to gain access to some online content an example is reCAPTCHA which leverages millions of users who solve CAPTCHAs every day to correct words in books that optical character recognition OCR programs fail to recognize with certainty This book is aimed at achieving four goals 1 defining human computation as a research area 2 providing a comprehensive review of existing work 3 drawing connections to a wide variety of disciplines including AI Machine Learning HCI Mechanism Market Design and Psychology and capturing their unique perspectives on the core research questions in human computation and 4 suggesting promising research directions for the future Table of Contents Introduction Human Computation Algorithms Aggregating Outputs Task Routing Understanding Workers and Requesters The Art of Asking Questions The Future of Human Computation *Handbook of Human Computation* Pietro Michelucci, 2013-12-04 This volume addresses the emerging area of human computation The chapters written by leading international researchers explore existing and future opportunities to combine the respective strengths of both humans and machines in order to create powerful problem solving capabilities The book bridges scientific communities capturing and integrating the unique perspective and achievements of each It coalesces contributions from industry and across related disciplines in order to motivate define and anticipate the future of this exciting new frontier in science and cultural evolution Readers can expect to find valuable contributions covering Foundations Application Domains Techniques and Modalities Infrastructure and Architecture Algorithms Participation Analysis Policy and Security and the Impact of Human Computation Researchers and professionals will find the Handbook of Human Computation a valuable reference tool The breadth of content also provides a thorough foundation for students of the field *Dynamic Quality Management for Cloud Labor Services* Robert Kern, 2014-09-06 How can a scalable and efficient quality management mechanism for cloud labor services be designed in a way that it delivers results with a well defined level of quality to the requester Cloud labor services are a specific form of crowdsourcing A coordination platform serves as an interface between requesters who need to get work done and a large crowd of workers who want to perform work An early example of such a platform is Amazon's Web marketplace Mturk on which service requesters can publish open calls for so called human intelligence tasks HITs Robert Kern's work

makes a considerable contribution toward solving the quality problem for scalable human work On the basis of a comprehensive framework of cloud labor he develops a set of methods to conceptually measure and aggregate the quality of human work results implements a platform to put those methods to work and evaluates their application in a number of very compelling real world scenarios successfully combining concepts from statistics information technology and management Reading this book will be beneficial to novices in cloud labor services looking for orientation in this new field as well as to advanced researchers and practitioners developing cloud quality concepts *Computation for Humanity* Justyna

Zander,Pieter Mosterman,2018-10-03 The exponential progress and accessibility of computing has vastly increased data flows and revolutionized the practice of science engineering and communication Computing plays a critical role in advancing research across almost every scientific discipline Computation for Humanity Information Technology to Advance Society is a guide for the creation of services products and tools that facilitate support and enhance progress of humanity toward more sustainable life This book Provides a deep understanding of the practical applications of computation to solve human machine problems Delivers insight into theoretical approaches in an accessible manner Provides a comprehensive overview of computational science and engineering applications in selected disciplines Crosses the boundaries between different domains and shows how they interrelate and complement one another Focuses on grand challenges and issues that matter for the future of humanity Shows different perspectives of computational thinking understanding and reasoning Provides a basis for scientific discoveries and enables adopting scientific theories and engineering practices from other disciplines Takes a step back to provide a human related abstraction level that is not ultimately seen in pure technological elaborations collections The editors provide a collection of numerous computation related projects that form a foundation from which to cross pollinate between different disciplines and further extensive collaboration They present a clear and profound understanding of computing in today s world and provide fundamental solutions to some of the most pertinent humanity related problems Research Methods in Human-Computer Interaction Jonathan Lazar,Jinjuan Heidi Feng,Harry

Hochheiser,2017-04-28 Research Methods in Human Computer Interaction is a comprehensive guide to performing research and is essential reading for both quantitative and qualitative methods Since the first edition was published in 2009 the book has been adopted for use at leading universities around the world including Harvard University Carnegie Mellon University the University of Washington the University of Toronto HiOA Norway KTH Sweden Tel Aviv University Israel and many others Chapters cover a broad range of topics relevant to the collection and analysis of HCI data going beyond experimental design and surveys to cover ethnography diaries physiological measurements case studies crowdsourcing and other essential elements in the well informed HCI researcher s toolkit Continual technological evolution has led to an explosion of new techniques and a need for this updated 2nd edition to reflect the most recent research in the field and newer trends in research methodology This Research Methods in HCI revision contains updates throughout including more detail on

statistical tests coding qualitative data and data collection via mobile devices and sensors Other new material covers performing research with children older adults and people with cognitive impairments Comprehensive and updated guide to the latest research methodologies and approaches and now available in EPUB3 format choose any of the ePub or Mobi formats after purchase of the eBook Expanded discussions of online datasets crowdsourcing statistical tests coding qualitative data laws and regulations relating to the use of human participants and data collection via mobile devices and sensors New material on performing research with children older adults and people with cognitive impairments two new case studies from Google and Yahoo and techniques for expanding the influence of your research to reach non researcher audiences including software developers and policymakers

The New Art of Ideas Robin Landa,2022-11-08 In a world with a surplus of ideas what separates a good idea from a bad one Learn how to cultivate a mindset that produces the kind of ideas people can't turn down Most professionals cannot generate a solid idea They either offer up tired or reused ones or they generate lots of ideas but none that are worth pursuing A great idea presents a well formulated thought or plan of action that spurs growth change advancement adaptation or new insight Worthwhile ideas move the needle they change the playing field altogether The New Art of Ideas is designed to help readers consistently produce worthwhile ideas by becoming nimble and imaginative thinkers better equipped to compete and produce in a global economy Robin Landa identifies the Three Gs of every good idea Goal Your vision for the end Gap The underdeveloped area that your idea fills Gain The overall benefits of your goal With explanations and examples of each component this book demystifies the process of effective ideation and hands you the key to unlock your creative potential

Digital Libraries and Crowdsourcing Mathieu Andro,2018-01-19 Instead of outsourcing tasks to providers using labor intensive countries libraries around the world increasingly appeal to the crowds of Internet users making their relationship with users more collaborative These internet users can be volunteers or paid work consciously unconsciously or in the form of games They can provide the workforce skills knowledge or financial resources that libraries need in order to achieve unimaginable goals

Advances in Intelligent Data Analysis IX Paul R. Cohen,Niall M. Adams,Michael R. Berthold,2010-05-04 This book constitutes the refereed proceedings of the 9th International Conference on Intelligent Data Analysis IDA 2010 held in Tucson AZ USA in May 2010 The 21 revised papers presented together with 2 invited papers were carefully reviewed and selected from more than 40 submissions All current aspects of intelligent data analysis are addressed particularly intelligent support for modeling and analyzing complex dynamical systems Topics covered are end to end software systems modeling complex systems such as gene regulatory networks economic systems ecological systems resources such as water and dynamical social systems such as online communities and robustness scaling properties and other usability issues

Bit by Bit Matthew J. Salganik,2019-08-06 This essential guide to doing social research in this fast evolving digital age explains how the digital revolution is transforming the way social scientists observe behavior ask questions run experiments and engage in mass collaborations

New Directions

in Intelligent Interactive Multimedia George A Tsihrintzis, Maria Virvou, 2008-06-18 This book summarizes the works and new research results presented at the First International Symposium on Intelligent Interactive Multimedia Systems and Services KES IIMSS 2008 organized by the University of Piraeus and its Department of Informatics in conjunction with KES International Piraeus Greece July 9 11 2008 The aim of the symposium was to provide an internationally respected forum for scientific research into the technologies and applications of intelligent interactive multimedia systems and services Besides the Preface the book contains sixty four 64 chapters The first four 4 chapters in the book are printed versions of the keynote addresses of the invited speakers of KES IIMSS 2008 Besides the invited speaker chapters the book contains fifteen 15 chapters on recent Advances in Multimedia Data Analysis eleven 11 chapters on Reasoning Approaches nine 9 chapters on Infrastructure of Intelligent Interactive Multimedia Systems and Services fourteen 14 chapters on Multimedia Applications and eleven 11 chapters on Quality of Interactive Multimedia Services **Eco-Translation** Michael Cronin, 2017-01-06 Ecology has become a central question governing the survival and sustainability of human societies cultures and languages In this timely study Michael Cronin investigates how the perspective of the Anthropocene or the effect of humans on the global environment has profound implications for the way translation is considered in the past present and future Starting with a deep history of translation and ranging from food ecology to interspecies translation and green translation technology this thought provoking book offers a challenging and ultimately hopeful perspective on how translation can play a vital role in the future survival of the planet *Inside the Box* Drew Boyd, Jacob Goldenberg, 2013-06-11 An answer to one of the most asked questions in corporate America How can our organization be more creative The authors show how thinking inside the box can foster greater creativity and innovation within a company or organization Four Futures Peter Frase, 2016-10-11 An invigorating vision of four post capitalist futures that consider the intersections of technology the environment and modern politics The Guardian Peter Frase argues that increasing automation and a growing scarcity of resources thanks to climate change will bring it all tumbling down In *Four Futures* Frase imagines how this post capitalist world might look deploying the tools of both social science and speculative fiction to explore what communism rentism socialism and exterminism might actually entail Could the current rise of real life robocops usher in a world that resembles *Ender's Game* And sure communism will bring an end to material scarcities and inequalities of wealth but there's no guarantee that social hierarchies governed by an economy of likes wouldn't rise to take their place A whirlwind tour through science fiction social theory and the new technologies already shaping our lives *Four Futures* is a balance sheet of the socialisms we may reach if a resurgent Left is successful and the barbarisms we may be consigned to if those movements fail *The Future of the Internet* Jonathan Zittrain, 2009-05-28 In *The Future of the Internet And How to Stop It* Jonathan Zittrain explores the dangers the internet faces if it fails to balance ever more tightly controlled technologies with the flow of innovation that has generated so much progress in the field of technology Zittrain argues that today's technological market is dominated by two

contrasting business models the generative and the non generative The generative models the PCs Windows and Macs of this world allow third parties to build upon and share through them The non generative model is more restricted appliances such as the xbox iPod and tomtom might work well but the only entity that can change the way they operate is the vendor If we want the internet to survive we need to change People must wake up to the risk or we could lose everything

Incentive-Centric Semantic Web Application Engineering Elena Simperl,Roberta Cuel,Martin Stein,2022-06-01 While many Web 2 0 inspired approaches to semantic content authoring do acknowledge motivation and incentives as the main drivers of user involvement the amount of useful human contributions actually available will always remain a scarce resource Complementarily there are aspects of semantic content authoring in which automatic techniques have proven to perform reliably and the added value of human and collective intelligence is often a question of cost and timing The challenge that this book attempts to tackle is how these two approaches machine and human driven computation could be combined in order to improve the cost performance ratio of creating managing and meaningfully using semantic content To do so we need to first understand how theories and practices from social sciences and economics about user behavior and incentives could be applied to semantic content authoring We will introduce a methodology to help software designers to embed incentives minded functionalities into semantic applications as well as best practices and guidelines We will present several examples of such applications addressing tasks such as ontology management media annotation and information extraction which have been built with these considerations in mind These examples illustrate key design issues of incentivized Semantic Web applications that might have a significant effect on the success and sustainable development of the applications the suitability of the task and knowledge domain to the intended audience and the mechanisms set up to ensure high quality contributions and extensive user involvement Table of Contents Semantic Data Management A Human driven Process Fundamentals of Motivation and Incentives Case Study Motivating Employees to Annotate Content Case Study Building a Community of Practice Around Web Service Management and Annotation Case Study Games with a Purpose for Semantic Content Creation Conclusions

Intelligent Data Engineering and Automated Learning - IDEAL 2007 Hujun Yin,2007-12-10 Annotation This book constitutes the refereed proceedings of the 8th International Conference on Intelligent Data Engineering and Automated Learning IDEAL 2007 held in Birmingham UK in December 2007 The 170 revised full papers presented were carefully reviewed and selected from more than 270 submissions The papers are organized in topical sections on learning and information processing data mining and information management bioinformatics and neuroinformatics agents and distributed systems financial engineering and modeling agent based approach to service sciences as well as neural evolutionary fusion algorithms and their applications

The Ethics of AI Rainer Mühlhoff,2025-05-30 Available open access digitally under CC BY NC ND licence In a world where artificial intelligence increasingly influences the fabric of our daily lives this accessible book offers a critical examination of AI and its deep

entanglement with power structures Rather than focusing on doomsday scenarios it emphasises how AI impacts our everyday interactions and social norms in ways that fundamentally reshape society By examining the different forms of exploitation and manipulation in the relationship between humans and AI the book advocates for collective responsibility better regulation and systemic change This is a resounding manifesto for rethinking AI ethics through a power aware lens With detailed analysis of real world examples and technological insights it is essential reading for anyone invested in the future of AI policy scholarly critique and societal integration *The Gameful World* Steffen P. Walz, Sebastian Deterding, 2015-01-23

What if every part of our everyday life was turned into a game The implications of gamification What if our whole life were turned into a game What sounds like the premise of a science fiction novel is today becoming reality as gamification As more and more organizations practices products and services are infused with elements from games and play to make them more engaging we are witnessing a veritable ludification of culture Yet while some celebrate gamification as a possible answer to mankind s toughest challenges and others condemn it as a marketing ruse the question remains what are the ramifications of this gameful world Can game design energize society and individuals or will algorithmic incentive systems become our new robot overlords In this book more than fifty luminaries from academia and industry examine the key challenges of gamification and the ludification of culture including Ian Bogost John M Carroll Bernie DeKoven Bill Gaver Jane McGonigal Frank Lantz Jesse Schell Kevin Slavin McKenzie Wark and Eric Zimmerman They outline major disciplinary approaches including rhetorics economics psychology and aesthetics tackle issues like exploitation or privacy and survey main application domains such as health education design sustainability or social media Active Learning Burr

Settles, 2012-07-01 The key idea behind active learning is that a machine learning algorithm can perform better with less training if it is allowed to choose the data from which it learns An active learner may pose queries usually in the form of unlabeled data instances to be labeled by an oracle e g a human annotator that already understands the nature of the problem This sort of approach is well motivated in many modern machine learning and data mining applications where unlabeled data may be abundant or easy to come by but training labels are difficult time consuming or expensive to obtain This book is a general introduction to active learning It outlines several scenarios in which queries might be formulated and details many query selection algorithms which have been organized into four broad categories or query selection frameworks We also touch on some of the theoretical foundations of active learning and conclude with an overview of the strengths and weaknesses of these approaches in practice including a summary of ongoing work to address these open challenges and opportunities Table of Contents Automating Inquiry Uncertainty Sampling Searching Through the Hypothesis Space Minimizing Expected Error and Variance Exploiting Structure in Data Theory Practical Considerations **A Concise Introduction to Models and Methods for Automated Planning** Hector Geffner, Blai Bonet, 2022-05-31 Planning is the model based approach to autonomous behavior where the agent behavior is derived automatically from a model of the

actions sensors and goals The main challenges in planning are computational as all models whether featuring uncertainty and feedback or not are intractable in the worst case when represented in compact form In this book we look at a variety of models used in AI planning and at the methods that have been developed for solving them The goal is to provide a modern and coherent view of planning that is precise concise and mostly self contained without being shallow For this we make no attempt at covering the whole variety of planning approaches ideas and applications and focus on the essentials The target audience of the book are students and researchers interested in autonomous behavior and planning from an AI engineering or cognitive science perspective Table of Contents Preface Planning and Autonomous Behavior Classical Planning Full Information and Deterministic Actions Classical Planning Variations and Extensions Beyond Classical Planning Transformations Planning with Sensing Logical Models MDP Planning Stochastic Actions and Full Feedback POMDP Planning Stochastic Actions and Partial Feedback Discussion Bibliography Author s Biography

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