Sensemaking What Makes Human Intelligence Essential In The Age Of The Algorithm

This two-volume set LNAI 12163 and 12164 constitutes the refereed proceedings of the 21th International Conference on Artificial Intelligence in Education, AIED 2020, held in Ifrane, Morocco, in July 2020.* The 49 full papers presented together with 66 short, 4 industry & innovation, 4 doctoral consortium, and 4 workshop papers were carefully reviewed and selected from 214 submissions. The conference provides opportunities for the cross-fertilization of approaches, techniques and ideas from the many fields that comprise AIED, including computer science, cognitive and learning sciences, education, game design, psychology, sociology, linguistics as well as many domain-specific areas. ?*The conference was held virtually due to the COVID-19 pandemic.

This volume on communication in transdisciplinary teams is timely for two reasons: the number and size of research teams has increased, and communication is a primary criterion for success in both inter- and trans-disciplinary collaborations. This introduction provides an overview of theory and practice aimed at orienting readers to pertinent literature then previews the chapters that follow. First, though, preliminary definition is in order. Relevant insights are dispersed across literatures on both inter- and trans-disciplinarity, raising the question of how they differ (Klein, 2017). Interdisciplinarity (ID)

integrates information, data, methods, tools, concepts, or theories from two or more disciplines or bodies of knowledge in order to address a complex question, problem, topic, or theme. Solo interdisciplinarians work independently, but communication across boundaries is essential to collaboration. Transdisciplinarity (TD) transcends disciplinary worldviews by generating overarching synthetic frameworks and, in a connotation that arose in the late 20th century, problem-oriented research that crosses boundaries of academic, public, and private spheres by engaging stakeholders in co-production of knowledge. It also connotes teamwork aimed at generating new conceptual and methodological frameworks. We combine insights from literatures on inter- and trans-disciplinarity in order to acknowledge parallels between the two concepts. Authors of chapters of this volume differ in their conceptualization and use of the terms, as well as the focus of their research. We preserve their original uses of the two terms but synthesize lessons from both literatures in order to arrive at a more robust understanding of the dynamics of communication in teamwork that transcends knowledge boundaries. In the course of our discussion, we also employ nine related concepts defined in the text box: including pidgin and creole, collaborative interdisciplinary reasoning, communicative action, collaborative communication competence, team climate, socio-cognitive platforms for interdisciplinary collaboration, a cooperation and communication culture, mutual and integrative learning, and knowledge convergence.
This cutting edge book considers how advances in

technologies and new media have transformed our perception of education, and focuses on the impact of the privatisation of digital tools as a mean of knowledge production. Arguing that education needs to adapt to the modern learner, the book's unique approach is based on a disassociation with the deeply ingrained attitude with which people have traditionally viewed education – learning the existing symbolic systems of certain disciplines and then expressing themselves strictly within the operational modes of these systems. The ways of knowledge production – exploring, recording, representing, making meaning of and sharing human experiences – have been fundamentally transformed through the infusion of digital technologies into all aspects of human activity, allowing learners to engage with their immediate natural, social and cultural environments by capitalising on their individual abilities and interests. This book proposes a new approach to teaching and learning termed 'cinematic bricolage', which involves generating knowledge from heterogeneous resources in a 'do-it-yourself' manner while making meaning through multimodal representations. It shows how cinematic bricolage reconnects ways of knowing with ways of being, empowering the individual with a sense of personal identity and responsibility, helping to shape more aware social citizens.

"Based on his work at companies like Ford, Christian Madsbjerg's SENSEMAKING is a provocative stand against the tyranny of big data and scientism, an impassioned defense of a liberal arts education, and a

blueprint for how companies and leaders can use human intelligence to solve problems. Humans have become subservient to algorithms. Every day brings a new Moneyball fix--a math whiz who will crack open an industry with clean fact-based analysis rather than human intuition and experience. As a result, we have stopped thinking. Machines do it for us. Christian Madsbjerg argues that our fixation with data often masks stunning deficiencies, and the risks for humankind are enormous. Blind devotion to number crunching imperils our businesses, our educations, our governments, and our life savings. Too many companies have lost touch with the humanity of their customers, while marginalizing workers with liberal arts-based skills. Contrary to popular thinking, Madsbjerg shows how many of today's biggest success stories stem not from "quant" thinking but from deep, nuanced engagement with culture, language, and history. He calls his method sensemaking. In this landmark book, Madsbjerg lays out five principles for how business leaders, entrepreneurs, and individuals can use it to solve their thorniest problems. He profiles companies using sensemaking to connect with new customers, and takes readers inside the work process of sensemaking "connoisseurs" like investor George Soros, architect Bjarke Ingels, and others. Both practical and philosophical, Sensemaking is a powerful rejoinder to corporate groupthink and an indispensable resource for leaders and innovators who want to stand out from the pack"--

The Intelligence Community Studies Board of the National Academies of Sciences, Engineering, and

Medicine convened a workshop on August 9-10, 2017 to examine challenges in machine generation of analytic products from multi-source data. Workshop speakers and participants discussed research challenges related to machine-based methods for generating analytic products and for automating the evaluation of these products, with special attention to learning from small data, using multi-source data, adversarial learning, and understanding the human-machine relationship. This publication summarizes the presentations and discussions from the workshop.

With over 600 signed entries, The SAGE Encyclopedia of Higher Education demonstrates the impact higher education has had on global economies and universities across the world. Topics include: • students burdened with higher tuition fees • departments expected to produce courses and research that have clear and demonstrable social impact • what the university is and how it meets social and business requirements This encyclopedia touches on all aspects of higher education through: • key concepts • debates • approaches • schools of thought on higher education • role of universities As an interdisciplinary field, these volumes will prove to be an essential resource for students and researchers in education, sociology, politics and other related fields across the humanities and social science disciplines.

The papers in this volume comprise the refereed proceedings of the conference ' Artificial Intelligence in Theory and Practice' (IFIP AI 2008), which formed part of the 20th World Computer Congress of IFIP, the

International Federation for Information Processing (WCC-2008), in Milan, Italy in September 2008. The conference is organised by the IFIP Technical Committee on Artificial Intelligence (Technical Committee 12) and its Working Group 12.5 (Artificial Intelligence Applications). All papers were reviewed by at least two members of our Program Committee. Final decisions were made by the Executive Program Committee, which comprised John Debenham (University of Technology, Sydney, Australia), Ilias Maglogiannis (University of Aegean, Samos, Greece), Eunika Mercier-Laurent (KIM, France) and myself. The best papers were selected for the conference, either as long papers (maximum 10 pages) or as short papers (maximum 5 pages) and are included in this volume. The international nature of IFIP is amply reflected in the large number of countries represented here. The conference also featured invited talks by Prof. Nikola Kasabov (Auckland University of Technology, New Zealand) and Prof. Lorenza Saitta (University of Piemonte Orientale, Italy). I should like to thank the conference chair, John Debenham for all his efforts and the members of our program committee for reviewing papers to a very tight deadline.

In this 2012 edition of Advances in Knowledge-Based and Intelligent Information and Engineering Systems the latest innovations and advances in Intelligent Systems and related areas are presented by leading experts from all over the world. The 228 papers that are included cover a wide range of topics. One emphasis is on Information Processing, which has become a pervasive

phenomenon in our civilization. While the majority of Information Processing is becoming intelligent in a very broad sense, major research in Semantics, Artificial Intelligence and Knowledge Engineering supports the domain specific applications that are becoming more and more present in our everyday living. Ontologies play a major role in the development of Knowledge Engineering in various domains, from Semantic Web down to the design of specific Decision Support Systems. Research on Ontologies and their applications is a highly active front of current Computational Intelligence science that is addressed here. Other subjects in this volume are modern Machine Learning, Lattice Computing and Mathematical Morphology.The wide scope and high quality of these contributions clearly show that knowledge engineering is a continuous living and evolving set of technologies aimed at improving the design and understanding of systems and their relations with humans.

The purpose of this book is to provide an overview of AI research, ranging from basic work to interfaces and applications, with as much emphasis on results as on current issues. It is aimed at an audience of master students and Ph.D. students, and can be of interest as well for researchers and engineers who want to know more about AI. The book is split into three volumes: - the first volume brings together twenty-three chapters dealing with the foundations of knowledge representation and the formalization of reasoning and learning (Volume 1. Knowledge representation, reasoning and learning) - the second volume offers a view of AI, in fourteen

chapters, from the side of the algorithms (Volume 2. AI Algorithms) - the third volume, composed of sixteen chapters, describes the main interfaces and applications of AI (Volume 3. Interfaces and applications of AI). This third volume is dedicated to the interfaces of AI with various fields, with which strong links exist either at the methodological or at the applicative levels. The foreword of this volume reminds us that AI was born for a large part from cybernetics. Chapters are devoted to disciplines that are historically sisters of AI: natural language processing, pattern recognition and computer vision, and robotics. Also close and complementary to AI due to their direct links with information are databases, the semantic web, information retrieval and human-computer interaction. All these disciplines are privileged places for applications of AI methods. This is also the case for bioinformatics, biological modeling and computational neurosciences. The developments of AI have also led to a dialogue with theoretical computer science in particular regarding computability and complexity. Besides, AI research and findings have renewed philosophical and epistemological questions, while their cognitive validity raises questions to psychology. The volume also discusses some of the interactions between science and artistic creation in literature and in music. Lastly, an epilogue concludes the three volumes of this Guided Tour of AI Research by providing an overview of what has been achieved by AI, emphasizing AI as a science, and not just as an innovative technology, and trying to dispel some misunderstandings.

This book presents a distinct, ethically robust framework for improving population health when the major causes of disease, death and disability are closely associated with human behaviors. Rather than relying on a scientific, technological strategy aimed at developing ever more powerful and effective techniques for changing behaviors, a humanistic approach recognizes the unique human capacity for dignity and moral decision-making. As an essential alternative to the scientific assumption of determinism, a humanistic framework is based on the equally viable assumption that human beings have the capacity to exercise autonomy in pursuing their life plans. If people can choose how they want to live their lives, then it is imperative to respect and cultivate their autonomy in making health-promoting decisions. A scientific approach is unsurpassed at identifying effective means for stopping and killing bacteria; the same methods are not appropriate, however, when the objective is to alter human behavior. In a humanistic framework, it is important to acknowledge that autonomous choices are not completely unrestrained—the human condition has significant physical and social limitations—and that certain readily-identifiable social groups face much greater constraints than others, most significantly due to poverty and racism. As explained and justified in this book, the most important task for health promotion is to promote autonomy, and to do this by redressing the hugely disparate yet corrigible barriers faced by people occupying distinct social positions. This project is a matter of social justice—not a scientific and technological

problem to be solved, but a moral and political endeavor to engage fellow citizens—in strengthening our social institutions to enable everyone to realize their innate capacities to the fullest extent possible. The book provides ethical standards, case studies and concrete practical analogies to demonstrate the feasibility and benefits of moving the field of health promotion in a new humanistic direction.

This book presents the results of the OC-DDC 2018. Successful participants have been invited to extend their abstracts submitted to the event towards a full book chapter by taking reviews and feedback received at the event in Wurzburg into account. The participants prepared an initial extended abstract, helped to perform a sophisticated review process, and finally came up with interesting articles summarising their current work in the context of Organic Computing. Hence, the book also gives an overview of corresponding research activities in the field in Germany for the year 2018. The collection of contributions reflects the diversity of the different aspects of Organic Computing. In the following, we outline the contributions contained in this book.

The four-volume set LNCS 8012, 8013, 8014 and 8015 constitutes the proceedings of the Second International Conference on Design, User Experience, and Usability, DUXU 2013, held as part of the 15th International Conference on Human-Computer Interaction, HCII 2013, held in Las Vegas, USA in July 2013, jointly with 12 other thematically similar conferences. The total of 1666 papers and 303 posters presented at the HCII 2013 conferences was carefully reviewed and selected from

5210 submissions. These papers address the latest research and development efforts and highlight the human aspects of design and use of computing systems. The papers accepted for presentation thoroughly cover the entire field of Human-Computer Interaction, addressing major advances in knowledge and effective use of computers in a variety of application areas. The total of 282 contributions included in the DUXU proceedings were carefully reviewed and selected for inclusion in this four-volume set. The 83 papers included in this volume are organized in the following topical sections: DUXU in business and the enterprise, designing for the Web experience; product design; information and knowledge design and visualisation; and mobile applications and services.

Following in the footsteps of the web, Web 2.0, and the iPod, Ubiquitous Computing ("UbiComp") is the next game-changing technology. Leading expert Bo Begole, the director of PARC's UbiComp Center, shows executives, technology managers, and entrepreneurs how to successfully incorporate UbiComp into their own products, services, and strategies. Begole introduces the technologies of UbiComp, shows how they fit together, and identifies the challenges and opportunities they present. Next, he answers the key questions decision-makers and strategists ask most often about UbiComp, including: What is it, why does it matter, and how will it impact my business? What industries will be most affected first? Which parts of my organization will UbiComp change most? What UbiComp solutions should we consider for our internal business processes? How

should I position my company for these transformations? What barriers must we overcome and which barriers can we erect for our competitors? What should I build, partner, or buy? What barriers does my company need to overcome to adopt a UbiComp-based business? This book reports on cutting-edge research carried out within the context of the EU-funded Dicode project, which aims at facilitating and augmenting collaboration and decision making in data-intensive and cognitively complex settings. Whenever appropriate, Dicode builds on prominent high-performance computing paradigms and large data processing technologies to meaningfully search, analyze, and aggregate data from diverse, extremely large and rapidly evolving sources. The Dicode approach and services are fully explained and particular emphasis is placed on deepening insights regarding the exploitation of big data, as well as on collaboration and issues relating to sense-making support. Building on current advances, the solution developed in the Dicode project brings together the reasoning capabilities of both the machine and humans. It can be viewed as an innovative "workbench" incorporating and orchestrating a set of interoperable services that reduce the data intensiveness and complexity overload at critical decision points to a manageable level, thus permitting stakeholders to be more productive and effective in their work practices. The author explores the centrality of Human Intelligence (HUMINT) in meeting the needs of the U.S. Army, the Department of Defense, and the whole of government. Such intelligence is essential to create a national security

strategy, to define whole of government policies, to acquire the right capabilities at the right price in time to be useful, and to conduct local and global operations. He outlines 15 distinct types of HUMINT, four of which are classified (defensive and offensive counterintelligence, clandestine operations, and covert action), with the other 11 being predominantly unclassified. The author offers the U.S. Army an orientation to a world in which thinkers displace shooters as the center of gravity for planning, programming, and budgeting, as well as the proper structuring of mission mandates, force structures, and tactics and techniques to be used in any given mission area.--

This book focuses on developing an understanding of the complex interplay of forces acting on individual universities and higher education systems to enable leaders and practitioners to take purposeful and strategic action. It explores the challenging landscape of higher education and the pressures that are reshaping the university as a societal institution, describing the complex interplay of technological, sociological, political and economic forces driving change. The issues analysed are global in scope, reflecting the diversity of contexts, but also the common nature of the challenges facing institutions individually and collectively. The analysis draws on the lessons learnt and evidence from over fifty organisational case studies undertaken by the author over the past decade, exploring organisational change in higher education institutions in New Zealand, Australia, the United States and the United Kingdom, and on his engagement as president of the ACODE

organisation with colleagues responsible for learning technological change in Australasia. The book helps institutions respond to technological change purposefully, in ways that build upon a clear understanding of the complex nature of the existing institution, its students and the organisational context. This book deals with the processes and theories involved in managing military organisations in both peacetime and crisis conditions. Examining the challenges faced by policymakers and military commanders in conducting military operations, this book considers the benefits of conventional management and organisation theory for the military. At the same time, these essays recognise that the military should be considered as a highly individual organisation, operating in exceptional circumstances. This awareness of the differences between the military and other organisations generates important lessons not only for the military but also for general organisations as it teaches them how to cope in exceptional, 'hyper' conditions. These theoretical lessons are illustrated by case studies and experiences from recent military operations, such as those in Iraq and Afghanistan. This book will be of great interest to students of military studies, security studies and organizational studies. Joseph Soeters chairs the department of management and organization studies and defence economy at the Netherlands Defense Academy and

he is a professor in organizational sociology at Tilburg University. Paul. C. van Fenema is an associate professor of organization studies at the Netherlands Defence Academy and Tilburg University. Robert Beeres is an associate professor in the field of defence accounting and control (business administration) at the Netherlands Defence Academy and at Nyenrode Business School.

"This book presents a state-of-the-art discussion of conceptual and applied e-collaboration issues. Business organizations increasingly rely on collaborative processes to maintain their competitiveness. E-collaboration technologies are at the source of something that underlies most business, political, and even societal developments - intense human collaboration"--Provided by publisher. NOTE: NO FURTHER DISCOUNT FOR THIS PRODUCT- OVERSTOCK SALE -- Significantly reduced list price Diagnoses the ills of the intelligence community. Describes the potential that sensemaking offers as a means precisely for helping policymakers to improve how they think about policy. Other related items: Critical Thinking and Intelligence Analysis is available here: https: //bookstore.gpo.gov/products/sku/008-020-01589-0 United States Congressional Serial Set, Serial No. 14876, Senate Report No. 301, U.S. Intelligence Community\'s Prewar Intelligence Assessments on

Iraq, Report of Select Committee on Intelligence is available here: https:

//bookstore.gpo.gov/products/sku/552-108-00074-4 Crafting an Intelligence Community: Papers of the First Four DCIs (Book and DVD) is available here: https:

//bookstore.gpo.gov/products/sku/041-015-00298-8 Interrogation: World War II, Vietnam, and Iraq is available here: https:

//bookstore.gpo.gov/products/sku/008-000-01017-0 Who Watches the Watchmen?: The Conflict between National Security and Freedom of the Press is available here: https:

//bookstore.gpo.gov/products/sku/008-020-01606-3"
New Directions in Human Information Behavior, co-edited by Drs. Amanda Spink and Charles Cole provides an understanding of the new directions, leading edge theories and models in human information behavior. Information behavior is conceptualized as complex human information related processes that are embedded within an individual's everyday social and life processes. The book presents chapters by an interdisciplinary range of scholars who show new directions that often challenge the established views and paradigms of information behavior studies. Beginning with an evolutionary framework, the book examines information behaviors over various epochs of human existence from the Palaeolithic Era and within pre-

literate societies, to contemporary behaviors by 21st century humans. Drawing upon social and psychological science theories the book presents a more integrated and holistic approach to the understanding of information behaviors that include multitasking and non-linear longitudinal processes, individuals' information ground, information practices and information sharing, digital behaviors and human information organizing behaviors. The final chapter of the book integrates these new approaches and presents an overview of the key trends, theories and models for further research. This book is directly relevant to information scientists, librarians, social and evolutionary psychologists. Undergraduate and graduate students, academics and information professionals interested in human information behavior will find this book of particular benefit.

The teaching of organization theory and the conduct of organizational research have been dominated by a focus on decision-making and the concept of strategic rationality. However, the rational model ignores the inherent complexity and ambiguity of real-world organizations and their environments. In this landmark volume, Karl E Weick highlights how the `sensemaking' process shapes organizational structure and behaviour. The process is seen as the creation of reality as an ongoing accomplishment that takes form when people make retrospective

sense of the situations in which they find themselves.

This book constitutes the refereed proceedings of the 9th International Joint Conference on E-Business and Telecommunications, ICETE 2012, held in Rome, Italy, in July 2012. ICETE is a joint international conference integrating four major areas of knowledge that are divided into six corresponding conferences: International Conference on Data Communication Networking, DCNET; International Conference on E-Business, ICE-B; International Conference on Optical Communication Systems, OPTICS; International Conference on Security and Cryptography, SECRYPT; International Conference on Wireless Information Systems, WINSYS; and International Conference on Signal Processing and Multimedia, SIGMAP. The 18 full papers presented were carefully reviewed and selected from 403 submissions. They cover a wide range of topics in the key areas of e-business and telecommunications.

The author explores the centrality of Human Intelligence (HUMINT) in meeting the needs of the U.S. Army, the Department of Defense, and the whole of government. Such intelligence is essential to create a national security strategy, to define whole of government policies, to acquire the right capabilities at the right price in time to be useful, and to conduct local and global operations. He outlines

15 distinct types of HUMINT, four of which are classified (defensive and offensive counterintelligence, clandestine operations, and covert action), with the other 11 being predominantly unclassified. The author offers the U.S. Army an orientation to a world in which thinkers displace shooters as the center of gravity for planning, programming, and budgeting, as well as the proper structuring of mission mandates, force structures, and tactics and techniques to be used in any given mission area.

John Carroll shows how a pervasive but underused element of design practice, the scenario, can transform information systems design. Difficult to learn and awkward to use, today's information systems often change our activities in ways that we do not need or want. The problem lies in the software development process. In this book John Carroll shows how a pervasive but underused element of design practice, the scenario, can transform information systems design. Traditional textbook approaches manage the complexity of the design process via abstraction, treating design problems as if they were composites of puzzles. Scenario-based design uses concretization. A scenario is a concrete story about use. For example: "A person turned on a computer; the screen displayed a button labeled Start; the person used the mouse to select the button." Scenarios are a

vocabulary for coordinating the central tasks of system development—understanding people's needs, envisioning new activities and technologies, designing effective systems and software, and drawing general lessons from systems as they are developed and used. Instead of designing software by listing requirements, functions, and code modules, the designer focuses first on the activities that need to be supported and then allows descriptions of those activities to drive everything else. In addition to a comprehensive discussion of the principles of scenario-based design, the book includes in-depth examples of its application. This edited book adopts a cognitive perspective to provide breadth and depth to state-of-the-art research related to understanding, analyzing, predicting and improving one of the most prominent and important classes of behavior of modern humans, information search. It is timely as the broader research area of cognitive computing and cognitive technology have recently attracted much attention, and there has been a surge in interest to develop systems and technology that are more compatible with human cognitive abilities. Divided into three interlocking sections, the first introduces the foundational concepts of information search from a cognitive computing perspective to highlight the research questions and approaches that are shared among the contributing authors. Relevant concepts from psychology, information and computing sciences are addressed. The second section discusses

methods and tools that are used to understand and predict information search behavior and how the cognitive perspective can provide unique insights into the complexities of the behavior in various contexts. The final part highlights a number of areas of applications of which education and training, collaboration and conversational search interfaces are important ones. Understanding and Improving Information Search - A Cognitive Approach includes contributions from cognitive psychologists, information and computing scientists around the globe, including researchers from Europe (France, Netherlands, Germany), the US, and Asia (India, Japan), providing their unique but coherent perspectives to the core issues and questions most relevant to our current understanding of information search behavior and improving information search. A bureaucracy built for the Industrial Age can't adapt to the Age of Information. Transformation requires uprooting our obsolete, century-old systems and replacing them with new models better suited to the 21st century. The Progressive era brought us the civil service system, the city manager, independent public authorities, administrative agencies, and the Federal Reserve. Now, in the Information Era we require similarly sweeping changes. What would they entail? How should they be implemented? How can they transform everything from education to national security, revolutionize everything from voting to commuting, solve problems from corporate fraud to welfare cheating? All this is addressed in policy prescriptions, including invaluable tips for putting the ideas into practice.

The First International ICST Conference on Communications Infrastructure, Systems and Applications in Europe (EuropeComm 2009) was held August 11–13, 2009, in London. EuropeComm 2009 brought together decision makers from the EU comm- sion, top researchers and industry executives to discuss the directions of communi- tions research and development in Europe. The event also attracted academia and industry representatives, as well as government officials to discuss the current dev- opments and future trends in technology, applications and services in the communi- tions field. Organizing this conference was motivated by the fact that the development and - ployment of future services will require a common global-scale infrastructure, and therefore it is important that designers and stakeholders from all the systems stacks come together to discuss these developments. Rapidly decreasing costs of compu- tional power, storage capacity, and communication bandwidth have led to the dev- opment of a multitude of applications carrying an increasingly huge amount of traffic on the global networking infrastructure. What we have seen is an evolution: an inf- structure looking for networked applications has evolved into an infrastructure str- gling to meet the social, technological and business challenges posed by the plethora of bandwidth-hungry emerging applications. Providing a comprehensive introduction into an overview of the field of pervasive healthcare applications, this volume incorporates a variety of timely topics ranging from medical sensors and hardware infrastructures, to

software platforms and applications and addresses issues of user experience and technology acceptance. The recent developments in the area of information and communication technologies have laid the groundwork for new patient-centred healthcare solutions. While the majority of computer-supported healthcare tools designed in the last decades focused mainly on supporting care-givers and medical personnel, this trend changed with the introduction of pervasive healthcare technologies, which provide supportive and adaptive services for a broad variety and diverse set of end users. With contributions from key researchers the book integrates the various aspects of pervasive healthcare systems including application design, hardware development, system implementation, hardware and software infrastructures as well as end-user aspects providing an excellent overview of this important and evolving field.

Global news on anthropogenic climate change is shaped by international politics, scientific reports and voices from transnational protest movements. This timely volume asks how local communities engage with these transnational discourses. The chapters in this volume present a range of compelling case studies drawn from a broad cross-section of local communities around the world, reflecting diverse cultural and geographical contexts. From Greenland to northern Tanzania, it illuminates how different understandings evolve in diverse cultural and geographical contexts while also revealing some common patterns of how people make sense of climate change. Global Warming in Local

Discourses constitutes a significant, new contribution to understanding the multi-perspectivity of our debates on climate change, further highlighting the need for interdisciplinary study within this area. It will be a valuable resource to those studying climate and science communication; those interested in understanding the various roles played by journalism, NGOs, politics and science in shaping public understandings of climate change, as well as those exploring the intersections of the global and the local in debates on the sustainable transformation of societies.

Cyberwarfare has become an important concern for governmental agencies as well businesses of various types. This timely volume, with contributions from some of the internationally recognized, leaders in the field, gives readers a glimpse of the new and emerging ways that Computational Intelligence and Machine Learning methods can be applied to address problems related to cyberwarfare. The book includes a number of chapters that can be conceptually divided into three topics: chapters describing different data analysis methodologies with their applications to cyberwarfare, chapters presenting a number of intrusion detection approaches, and chapters dedicated to analysis of possible cyber attacks and their impact. The book provides the readers with a variety of methods and techniques, based on computational intelligence, which can be applied to the broad domain of cyberwarfare. This book constitutes the refereed proceedings of the 16th International Conference on Artificial Intelligence in Education, AIED 2013, held in Memphis, TN, USA in July

2013. The 55 revised full papers presented together with 73 poster presentations were carefully reviewed and selected from a total of 168 submissions. The papers are arranged in sessions on student modeling and personalization, open-learner modeling, affective computing and engagement, educational data mining, learning together (collaborative learning and social computing), natural language processing, pedagogical agents, metacognition and self-regulated learning, feedback and scaffolding, designed learning activities, educational games and narrative, and outreach and scaling up.

The enactive approach replaces the classical computer metaphor of mind with emphasis on embodiment and social interaction as the sources of our goals and concerns. Researchers from a range of disciplines unite to address the challenge of how to account for the more uniquely human aspects of cognition, including the abstract and the nonsensical.

This book concludes a trilogy that began with Intelligent Cities: Innovation, Knowledge Systems and digital spaces (Routledge 2002) and Intelligent Cities and Globalisation of Innovation Networks (Routledge 2008). Together these books examine intelligent cities as environments of innovation and collaborative problem-solving. In this final book, the focus is on planning, strategy and governance of intelligent cities. Divided into three parts, each section elaborates upon complementary aspects of intelligent city strategy and planning. Part I is about the drivers and architectures of the spatial intelligence of cities, while Part II turns to

planning processes and discusses top-down and bottom-up planning for intelligent cities. Cities such as Amsterdam, Manchester, Stockholm and Helsinki are examples of cities that have used bottom-up planning through the gradual implementation of successive initiatives for regeneration. On the other hand, Living PlanIT, Neapolis in Cyprus, and Saudi Arabia intelligent cities have started with the top-down approach, setting up urban operating systems and common central platforms. Part III focuses on intelligent city strategies; how cities should manage the drivers of spatial intelligence, create smart environments, mobilise communities, and offer new solutions to address city problems. Main findings of the book are related to a series of models which capture fundamental aspects of intelligent cities making and operation. These models consider structure, function, planning, strategies toward intelligent environments and a model of governance based on mobilisation of communities, knowledge architectures, and innovation cycles.

User manuals, reference guides, project documentation, equipment specifications and other technical documents are increasingly subjected to high quality standards. However, it is not clear whether research efforts are keeping pace with this increasing importance of documentation quality. This volume includes studies from researchers as well as practitioners, exemplifying three approaches towards document quality:• Product-orientation, with an eye for usability in various manifestations such as tutorials, concept definitions, tools for users of documentation to find information,

methods of eliciting user feedback, and cultural differences;• Process-orientation, in which the quality of technical documentation is regarded as an outgrowth of a process involving sub-steps such as storyboarding, pre-testing and use of automation tools in writing and producing documents;• Professional orientation, in which attention is focused on those who create technical documentation.The volume will be of interest to a broad audience of writers, managers and trainers with technical and non-technical backgrounds, such as: quality managers; communication managers; technical communicators; trainers in computer usage; teachers, researchers and students of (technical) communication. In education today, technology alone doesn't always lead to immediate success for students or institutions. In order to gauge the efficacy of educational technology, we need ways to measure the efficacy of educational practices in their own right. Through a better understanding of how learning takes place, we may work toward establishing best practices for students, educators, and institutions. These goals can be accomplished with learning analytics. Learning Analytics: From Research to Practice updates this emerging field with the latest in theories, findings, strategies, and tools from across education and technological disciplines. Guiding readers through preparation, design, and examples of implementation, this pioneering reference clarifies LA methods as not mere data collection but sophisticated, systems-based analysis with practical applicability inside the classroom and in the larger world. Case studies illustrate applications of LA throughout academic settings (e.g.,

intervention, advisement, technology design), and their resulting impact on pedagogy and learning. The goal is to bring greater efficiency and deeper engagement to individual students, learning communities, and educators, as chapters show diverse uses of learning analytics to: Enhance student and faculty performance. Improve student understanding of course material. Assess and attend to the needs of struggling learners. Improve accuracy in grading. Allow instructors to assess and develop their own strengths. Encourage more efficient use of resources at the institutional level. Researchers and practitioners in educational technology, IT, and the learning sciences will hail the information in Learning Analytics: From Research to Practice as a springboard to new levels of student, instructor, and institutional success.

SensemakingWhat Makes Human Intelligence Essential in the Age of the AlgorithmAbacusSensemakingThe Power of the Humanities in the Age of the Algorithm A groundbreaking interpretation of evolution as the work of Nature's intelligence • Refutes the orthodox view of evolution as a mindless process driven by chance • Explains why context is more important than mutation in evolutionary innovation • Shows how, by recognizing Nature's innovative and creative powers, we can overcome our social and environmental challenges with a new green science of evolution Darwin's theory of evolution is undoubtedly one of the most important scientific ideas of the modern age, explaining the existence of both life and consciousness without recourse to divine intervention. Yet how do we interpret

evolution? How do we evaluate the ability of Nature to engineer something as exquisite as the genetic code or the human brain? Could it be that evolution is an intelligent process? Is Nature smart? According to most scientists, the answer is no. While humanity may be intelligent and purposeful, the natural processes that crafted us are deemed to be devoid of such attributes. In a radical move away from orthodoxy, Simon G. Powell extends Darwin's vision by showing that evolution is not just about the survival of the fittest but rather the survival of clever and sensible behavior. Revealing the importance of the context in which things evolve, he explores the intelligent learning process behind natural selection. Rich with examples of the incredibly complex plants, animals, insects, and marine life designed by Nature--from the carnivorous Venus flytrap and the fungus-farming leafcutter ant to the symbiotic microbes found inside the common cow--he shows Nature as a whole to be a system of self-organizing intelligence in which life and consciousness were always destined to emerge. Examining the origins of life and the failure of artificial intelligence to compete with natural intelligence, he explains how our scientifically narrow-minded views on intelligence are now acting as a barrier to our own evolution. As Darwin's unfinished business comes to light and Nature's intelligence is embraced, we learn that Nature's agenda is not simply the replication of genetic matter but of expanding consciousness. By working with Nature's creative and innovative powers instead of against them, we can address today's social and environmental challenges with a new green science

of evolution.

The study of expertise weaves its way through various communities of practice, across disciplines, and over millennia. To date, the study of expertise has been primarily concerned with how human beings perform at a superior level in complex environments and sociotechnical systems, and at the highest levels of proficiency. However, more recent research has continued the search for better descriptions, and causal mechanisms that explain the complexities of expertise in context, with a view to translating this understanding into useful predictions and interventions capable of improving the performance of human systems as efficiently as possible. The Oxford Handbook of Expertise provides a comprehensive picture of the field of Expertise Studies. It offers both traditional and contemporary perspectives, and importantly, a multidiscipline-multimethod view of the science and engineering research on expertise. The book presents different perspectives, theories, and methods of conducting expertise research, all of which have had an impact in helping us better understand expertise across a broad range of domains. The Handbook also describes how researchers and practitioners have addressed practical problems and societal challenges. Throughout, the authors have sought to demonstrate the heterogeneity of approaches and conceptions of expertise, to place current views of expertise in context, to show how these views can be used to address current issues, and to examine ways to advance the study of expertise. The Oxford Handbook of Expertise is an essential resource both to those wanting

to gain an up-to-date knowledge of the science of expertise and those wishing to study experts.
"This handbook surveys the materials, approaches, contexts, and applications of American folklore and folklife studies to guide students and scholars of American folklore, culture, history, and society in the future. In addition to longstanding areas in the 350-year legacy of the subject's study and applications such as folktales and speech, the handbook includes exciting fields that have emerged in the twenty-first century such as the Internet, bodylore, folklore of organizations and networks, sexual orientation, neurodiverse identities, and disability groups. These studies encompass cultural traditions in the United States ranging from bits of slang in private conversations to massive public demonstrations, ancient beliefs to contemporary viral memes, and a simple handshake greeting to festivals encompassing multiple genres and groups. Folklore and folklife studies include material traditions such as buildings and crafts as well as oral and social genres of dance, ritual, drama, and play. Whereas the use of lore often emphasizes speech, song, and story that all people express, the rhetoric of life draws attention to tradition-centered communities such as the Amish and Hasidim, occupational groups and their workaday worlds, and children and other age groups. Significant to the American context has been the cultural diversity and changing national boundaries of the United States, relative youth of the nation and its legacy of mass immigration, mobility of residents and their relation to an indigenous and racialized population, and a varied

landscape and settlement pattern. The handbook is a reference, therefore, to American studies as well as the global study of tradition, folk arts, and cultural practice"--
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