Book Review

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Brief Book Review

The Human Computer Interaction Handbook: Fundamentals, Evolving Technologies, and Emerging Application

No matter if you are a human computer interaction (HCI) practitioner, researcher, or student, The Human Computer Interaction Handbook is a must-have book. Through 1277 pages and 64 chapters written by a number of important authors, this handbook provides readers with extensive coverage of topics in the area of human computer interaction. The book is organized into six parts: "Humans in Human-Computer Interaction," "Computers in Human-Computer Interaction," "Human Computer Interaction," "Application Domains," "the Development Process," and finally "Managing Human-Computer Interaction and Emerging Issues."

In this tremendous effort, Julie A. Jacko and Andrew Sears have done an excellent job of collecting, selecting, and writing about the many topics that are important to anyone involved in HCI and user interface design. As Professor Gavriel Salvendy, the series editor, points out in the foreword, " The reader will discover a systematic, structured approach to the design, experimentation, operation, and evaluation of user interfaces so that emerging information technologies can be easily and joyfully accessible to all individual." The chapters are easy to read, making the handbook accessible even to non-expert readers such as computer engineers. I particularly recommend it to all software engineers who are interested in knowing about HCI issues.

A.M.

The Human Computer Interaction Handbook: Fundamentals, Evolving Technologies, and Emerging Applications, edited by Julie A. Jacko and Andrew Sears, New Jersey: Lawrence Erlbaum Associates Publishers, 2003. ISBN: 0-8058-4468-6 (pbk.)

Brief Book Review

Handbook of Human Factors Testing and Evaluation

Without question, testing and evaluation are among the most important practices in the field of human factors and ergonomics (HFE). Testing and evaluation techniques, measurements, and tools play an important role in the design or selection of a product or service, whether it be software, hardware, a training program, a procedure in an organization, or some other product or service. In this book, several authors, with extensive industry practice in addition to their academic credentials, provide a useful

overview of the topic. In the 10 chapters that make up the first part of the book the authors first provide a historic perspective of testing and evaluation in HFE. They then review all aspects of the tools and techniques used to test and evaluate products or services. Topics such as measurement techniques, documentation, and prototyping test environments are extensively covered.

The second part of the book includes 22 chapters about the application of HFE testing and evaluation techniques in different industries for different types of products. These examples include descriptions of evaluation and testing practices in diverse environments. The chapters covering commercial air transport flight decks (chapter 12), maritime applications (chapter 13), the forest industry (chapter 14), road safety (chapter 15), and nuclear power plants (chapter 16) are particularly delighting.

Overall this book helps readers to understand the issues in testing and evaluation in different industries, and at the same time to understand the topic and gather ideas through descriptions of other people's experiences. Consequently, Handbook of Human Factors Testing and Evaluation is not only a good book for those who practice human factors and ergonomics but also a good resource for academic and specialty students who are starting a career in HFE.

A.M.

Handbook of Human Factors Testing and Evaluation, edited by Samuel G. Charlton and Thomas G. O'Brien, New Jersey: Lawrence Erlbaum Associates Publisher, 2002. 689 pages. ISBN 0-8058-3291-2.

Brief Book Review

Handbook of Virtual Environments: Design, Implementation, and Applications

Handbook of Virtual Environments begins appropriately with this quotation from the Greek philosopher Plato: "You see, then, that a doubt about the reality of sense is easily raised, since there may even be a doubt whether we are awake or in a dream." In a Matrix-like world, where everything is gradually becoming more virtual, "reality" sometimes seems to be just in our minds and real "experience" just in our dreams. A lot must be done to help build the interfaces for the systems. This book-seven major chapters and 1232 pages-covers almost all aspects of virtual environments. The topics include system requirement gathering (chapter II), design approaches and implementation strategies (chapter III), health and safety (chapter IV), evaluation (chapter V), and selected applications of virtual environments (chapter VI). Though chapter IV briefly reviews health and safety issues, one would like to see a discussion of the influence of virtual environments on social interaction and on the social structure of the societies. In a concluding chapter, Balde et al provide an interesting brief history of virtual environments that puts them in better perspective.

Without question, the study of virtual environment is an evolving area. What is feasible today might be totally different from what we will be able to achieve tomorrow, but

despite this evolution and fast growing area, this book is a precious resource for all researchers, practitioners, and academics working in this discipline.

A.M.

Brief Review of a Recently Released Book

Handbook of Task Analysis for Human-Computer Interaction

Handbook of Task Analysis for Human-Computer Interaction provides 30 selected contributions that are grouped into five major parts, titled Foundations, IT Industry Perspectives, Human Perspectives, Computing Perspectives, and Today and Tomorrow.

After reviewing the foundations and principles of task analysis and its application in the human-computer interaction (HCI) field, the editors present an interesting selection of papers (part II) summarizing the practitioners' views in implementing task analysis in HCI, which puts in perspective the theoretical findings of part I.

Parts III and IV take on the difficult task of categorizing a range of diverse topics into two groups: human perspectives and computing perspectives. Even though, as the editors admit, this classification is not ideal, these two parts still provide readers with a good understanding of different perspectives on creating, implementing, and elaborating task analysis in human-computer interaction.

The three contributions in part V provides a fair summary of different perspectives on task analysis and the challenges faced in performing a task analysis.

The book includes an accompanying CD, presenting the book's content in an electronic format. In this way the editors facilitate the task of referencing and reading the book, an initiative that will be particularly appreciated by the practitioner's community.

Handbook of Task Analysis for Human-Computer Interaction, in both content and tone, is a good reference for all practitioners in the filed of HCI and useful book for academic and researchers.

A.M.

Brief Review of a Recently Released Book

Handbook of Cognitive Task Design

Everything you always wanted to know about cognitive task analysis or "cognitive systems engineering" is collected and selected by Erik Hollnagel in Handbook of Cognitive Task Design. The 31 sections of this book are written by leading researchers from all over the world. As a comprehensive source of techniques, models, and methods for cognitive task design, it provides extensive reviews of theory, tools, techniques, and discussion that are indispensable to researchers and practitioners in this discipline.

The importance of cognitive task design has grown parallel to the changes in the nature of human work from manual to more cognitive. Professor Hollnagel notes in the introductory chapter that "many manual tasks have disappeared, while new cognitive tasks have emerged. For those manual tasks that remain, technology has often changed them considerably." Design methodology must take in consideration these fundamental changes. Handbook of Cognitive Task Design proposes," a new perspective on system design as a necessary first step"

The content finely groups contributions into three parts: Theories, Methods, and Field Studies with a variety of topics in each part. The diversity of the papers, the adequate depth, and the extensive bibliography make the book useful to anyone involved in the field of work and product design.

A.M.

Handbook of Cognitive Task Design, edited by Erik Hollnagel, Lawrence Erlbaum Associates Publisher, 2003. 808 pages

Brief Review of a Recently Released Book

Ecological Interface Design

If you are a practitioner, student, or want to recommend reading material to your students about ecological theories in user interface design you might want to start with Ecological Interface Design. In this 307 pages book, Burns and Hajdukiewicz provide a comprehensive description of theories, examples and case studies when ecological interface design approach was first implemented. Ecological interface design evolved from different theories that were not always easy to understand and sometimes difficult to implement in a technological environment that rapidly changes and where everything is time sensitive. This book is a successful attempt to give a better understanding of theory and practice in this field.

The examples and case studies are simplified, maybe sometimes too much and without sufficient description, and this makes the concepts very accessible to a border audience in addition to human factors professionals.

After providing a general overview of ecological interface design (chapter 1) the authors offer a very useful, applicable definition of many concepts, techniques, and tools in ecological interface design theory in chapters 2, 3 and 4. Chapters 5, 6, 7, 8 and 9 provide presentations of several case studies from a variety domain (Transportation chapter 5,

process control system 6, telecommunication chapter 7, medical system chapter 8 and social system chapter 9.

In chapter 10th authors tend to provide a comparative view of ecological interface design with other techniques including Task Analysis, Situation Awareness Analysis, GOMS (Goal, Operators, Methods and Selections), and Use Case Scenario Design.

A.M.

Ecological Interface Design, Catherine M. Burns and Hohn R. Hajdukiewicz, CRC Press, 2004. 307 pages
ISBN 0-415-28374-4

Brief Book Review

Designing Usable Electronic Text, 2nd Edition

Advances in computer technology and ultimately the Internet and World Wide Web has revolutionized access to all sorts of information and knowledge through electronic text. Although paper copies of documents or books still are one of the most important sorts of reading, more and more, the e-book and electronic text are replacing hard copy documents. How should texts be presented in an electronic version? What are the principles we need to follow in order to create more user friendly and useable electronic text? These are the fundamental questions that Andrew Dillon tries to answer in the 10 chapters of the second edition of Designing Usable Electronic Text. After an extensive review of the empirical literature on reading from screens (Chapter 3) and comprehensive review and description of reading process (Chapter 7), the author provides guidelines to classify information (Chapter 5), capturing data on reading (Chapter 6), shaping and structuring documents (Chapter 7), design, evaluation and users' performance in reading digital documents (Chapter 8 and 9). All the guidelines are paralleled with research and acquired knowledge in designing electronic text. Designing Usable Electronic Text is without question an important resource to all professionals involved in the human-computer interaction field and user interface designs.

A.M.

Designing Usable Electronic Text, 2nd Edition, Andrew Dillon, CRC Press, 2004.
2114 pages, ISBN 0-415-24059-X.

Brief Book Review

Ten Questions About Human Error

In this 218-page book, the author tries to provide answer to 10 questions about human error. The 10 questions are:

-Was it mechanical failure or human error?
-Why do safe systems fail?
-Why are doctors more dangerous than gun owners?
-Don't errors exist?
-If you lose situation awareness, what replaces it?
-Why do operators become complacent?
-Why don't they follow the procedures?
-Can we automate human error out of the system?
-Will the system be safe?
-And finally, should we hold people accountable for their mistakes?

Although the author addresses all of these questions with examples, cases, and terminology taken from the transportation and aviation fields, one might nevertheless easily extrapolate much of the discussion to other situations in related fields. Even if you disagree with some of the author's arguments, they trigger thinking and provoke reaction. For example, in chapter 3, Dekker compares the number of doctors in the U.S. and number of people who die as a result of medical errors to the number of gun owners in the U.S. and the number of accidental death caused by gun owner errors. In my mind this triggers the question: Do the guns owners, by having guns, save lives as the doctors do on their everyday activities? Or, in chapter 4, one wonders about the relationship between "error" and "violation" when the author states "In this world there are errors and violations, and these errors and violations are quite real." Thought-provoking topics like these make Ten Questions About Human Error not only a "must have" book for all professionals and researchers in the field of human factors in transportation, aviation, and failure analysis, but also interesting reading for all others professionals, like myself, working in related fields.

A.M.

Ten Questions About Human Error: A new View of Human Factors and System Safety,
Sidney W.A. Dekker,
Lawrence Erlbaum Associates, Publishers, 2005, 219 pages
ISBN 0-8058-4744-8