

Learning to Estimate Query Difficulty

Including Applications to Missing Content Detection and
Distributed Information Retrieval

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Estimating The Query Difficulty For Information Retrieval

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Estimating The Query Difficulty For Information Retrieval Elad Yom Tov:

Estimating the Query Difficulty for Information Retrieval David Carmel, Elad Yom-Tov, 2022-05-31 Many information retrieval IR systems suffer from a radical variance in performance when responding to users queries Even for systems that succeed very well on average the quality of results returned for some of the queries is poor Thus it is desirable that IR systems will be able to identify difficult queries so they can be handled properly Understanding why some queries are inherently more difficult than others is essential for IR and a good answer to this important question will help search engines to reduce the variance in performance hence better servicing their customer needs Estimating the query difficulty is an attempt to quantify the quality of search results retrieved for a query from a given collection of documents This book discusses the reasons that cause search engines to fail for some of the queries and then reviews recent approaches for estimating query difficulty in the IR field It then describes a common methodology for evaluating the prediction quality of those estimators and experiments with some of the predictors applied by various IR methods over several TREC benchmarks Finally it discusses potential applications that can utilize query difficulty estimators by handling each query individually and selectively based upon its estimated difficulty Table of Contents Introduction The Robustness Problem of Information

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Estimating the Query Difficulty for Information Retrieval David Carmel, Elad Yom-Tov, 2010 Many information retrieval IR systems suffer from a radical variance in performance when responding to users queries Even for systems that succeed very well on average the quality of results returned for some of the queries is poor Thus it is desirable that IR systems will be able to identify difficult queries so they can be handled properly Understanding why some queries are inherently more difficult than others is essential for IR and a good answer to this important question will help search engines to reduce the variance in performance hence better servicing their customer needs Estimating the query difficulty is an attempt to quantify the quality of search results retrieved for a query from a given collection of documents This book discusses the reasons that cause search engines to fail for some of the queries and then reviews recent approaches for estimating query difficulty in the IR field It then describes a common methodology for evaluating the prediction quality of those estimators and experiments with some of the predictors applied by various IR methods over several TREC benchmarks Finally it discusses potential applications that can utilize query difficulty estimators by handling each query individually and selectively based upon its estimated difficulty Table of Contents Introduction The Robustness Problem of Information Retrieval Basic Concepts Query Performance Prediction Methods Pre Retrieval Prediction Methods Post Retrieval Prediction Methods Combining Predictors A General Model for Query Difficulty Applications of Query Difficulty Estimation Summary and Conclusions

Predicting Information Retrieval Performance Robert M. Losee, 2022-05-31 Information Retrieval

performance measures are usually retrospective in nature representing the effectiveness of an experimental process. However, in the sciences, phenomena may be predicted given parameter values of the system. After developing a measure that can be applied retrospectively or can be predicted, performance of a system using a single term can be predicted given several different types of probabilistic distributions. Information Retrieval performance can be predicted with multiple terms where statistical dependence between terms exists and is understood. These predictive models may be applied to realistic problems and then the results may be used to validate the accuracy of the methods used. The application of metadata or index labels can be used to determine whether or not these features should be used in particular cases. Linguistic information such as part of speech tag information can increase the discrimination value of existing terminology and can be studied predictively. This work provides methods for measuring performance that may be used predictively. Means of predicting these performance measures are provided both for the simple case of a single term in the query and for multiple terms. Methods of applying these formulae are also suggested.

Simulating Information Retrieval Test Collections David Hawking, Bodo Billerbeck, Paul Thomas, Nick Craswell, 2022-06-01. Simulated test collections may find application in situations where real datasets cannot easily be accessed due to confidentiality concerns or practical inconvenience. They can potentially support Information Retrieval IR experimentation, tuning, validation, performance prediction, and hardware sizing. Naturally, the accuracy and usefulness of results obtained from a simulation depend upon the fidelity and generality of the models which underpin it. The fidelity of emulation of a real corpus is likely to be limited by the requirement that confidential information in the real corpus should not be able to be extracted from the emulated version. We present a range of methods exploring trade offs between emulation fidelity and degree of preservation of privacy. We present three different simple types of text generator which work at a micro level: Markov models, neural net models, and substitution ciphers. We also describe macro level methods where we can engineer macro properties of a corpus, giving a range of models for each of the salient properties: document length distribution, word frequency distribution for independent and non-independent cases, word length and textual representation, and corpus growth. We present results of emulating existing corpora and for scaling up corpora by two orders of magnitude. We show that simulated collections generated with relatively simple methods are suitable for some purposes and can be generated very quickly. Indeed, it may sometimes be feasible to embed a simple lightweight corpus generator into an indexer for the purpose of efficiency studies. Naturally, a corpus of artificial text cannot support IR experimentation in the absence of a set of compatible queries. We discuss and experiment with published methods for query generation and query log emulation. We present a proof of the pudding study in which we observe the predictive accuracy of efficiency and effectiveness results obtained on emulated versions of TREC corpora. The study includes three open source retrieval systems and several TREC datasets. There is a trade off between confidentiality and prediction accuracy, and there are interesting interactions between retrieval systems and datasets. Our tentative conclusion is that there are emulation

methods which achieve useful prediction accuracy while providing a level of confidentiality adequate for many applications. Many of the methods described here have been implemented in the open source project SynthaCorpus accessible at <https://bitbucket.org/davidhawking/synthacorpus>.

Visual Information Retrieval Using Java and LIRE Mathias Lux, Oge Marques, 2022-05-31. Visual information retrieval (VIR) is an active and vibrant research area which attempts at providing means for organizing, indexing, annotating and retrieving visual information (images and videos) from large unstructured repositories. The goal of VIR is to retrieve matches ranked by their relevance to a given query which is often expressed as an example image and/or a series of keywords. During its early years (1995–2000) the research efforts were dominated by content-based approaches contributed primarily by the image and video processing community. During the past decade it was widely recognized that the challenges imposed by the lack of coincidence between an image's visual contents and its semantic interpretation (also known as semantic gap) required a clever use of textual metadata in addition to information extracted from the image's pixel contents to make image and video retrieval solutions efficient and effective. The need to bridge or at least narrow the semantic gap has been one of the driving forces behind current VIR research. Additionally, other related research problems and market opportunities have started to emerge, offering a broad range of exciting problems for computer scientists and engineers to work on. In this introductory book we focus on a subset of VIR problems where the media consists of images and the indexing and retrieval methods are based on the pixel contents of those images, an approach known as content-based image retrieval (CBIR). We present an implementation-oriented overview of CBIR concepts, techniques, algorithms and figures of merit. Most chapters are supported by examples written in Java using Lucene, an open source Java-based indexing and search implementation, and LIRE (Lucene Image REtrieval), an open source Java-based library for CBIR.

Table of Contents: Introduction, Information Retrieval, Selected Concepts and Techniques, Visual Features, Indexing Visual Features, LIRE: An Extensible Java CBIR Library, Concluding Remarks.

Measuring User Engagement Mounia Lalmas, Heather O'Brien, Elad Yom-Tov, 2014-11-01. User engagement refers to the quality of the user experience that emphasizes the positive aspects of interacting with an online application and, in particular, the desire to use that application longer and repeatedly. User engagement is a key concept in the design of online applications, whether for desktop, tablet or mobile, motivated by the observation that successful applications are not just used but are engaged with. Users invest time, attention and emotion in their use of technology and seek to satisfy pragmatic and hedonic needs. Measurement is critical for evaluating whether online applications are able to successfully engage users and may inform the design of and use of applications. User engagement is a multifaceted complex phenomenon; this gives rise to a number of potential measurement approaches. Common ways to evaluate user engagement include using self-report measures (e.g. questionnaires), observational methods (e.g. facial expression analysis, speech analysis, neurophysiological signal processing methods (e.g. respiratory and cardiovascular accelerations and decelerations, muscle spasms) and web analytics (e.g. number of site visits, click depth). These

methods represent various trade offs in terms of the setting laboratory versus in the wild object of measurement user behaviour affect or cognition and scale of data collected For instance small scale user studies are deep and rich but limited in terms of generalizability whereas large scale web analytic studies are powerful but negate users motivation and context The focus of this book is how user engagement is currently being measured and various considerations for its measurement Our goal is to leave readers with an appreciation of the various ways in which to measure user engagement and their associated strengths and weaknesses We emphasize the multifaceted nature of user engagement and the unique contextual constraints that come to bear upon attempts to measure engagement in different settings and across different user groups and web domains At the same time this book advocates for the development of good measures and good measurement practices that will advance the study of user engagement and improve our understanding of this construct which has become so vital in our wired world

Table of Contents Preface Acknowledgments Introduction and Scope Approaches Based on Self Report Methods Approaches Based on Physiological Measurements Approaches Based on Web Analytics Beyond Desktop Single Site and Single Task Enhancing the Rigor of User Engagement Methods and Measures Conclusions and Future Research Directions Bibliography Authors Biographies Index

Information Concepts Gary Marchionini, 2022-05-31 Information is essential to all human activity and information in electronic form both amplifies and augments human information interactions This lecture surveys some of the different classical meanings of information focuses on the ways that electronic technologies are affecting how we think about these senses of information and introduces an emerging sense of information that has implications for how we work play and interact with others The evolutions of computers and electronic networks and people's uses and adaptations of these tools manifesting a dynamic space called cyberspace Our traces of activity in cyberspace give rise to a new sense of information as instantaneous identity states that I term profection of self Proflections of self influence how others act toward us Four classical senses of information are described as context for this new form of information The four senses selected for inclusion here are the following thought and memory communication process artifact and energy Human mental activity and state thought and memory have neurological cognitive and affective facets The act of informing communication process is considered from the perspective of human intentionality and technical developments that have dramatically amplified human communication capabilities Information artifacts comprise a common sense of information that gives rise to a variety of information industries Energy is the most general sense of information and is considered from the point of view of physical mental and social state change This sense includes information theory as a measurable reduction in uncertainty This lecture emphasizes how electronic representations have blurred media boundaries and added computational behaviors that yield new forms of information interaction which in turn are stored aggregated and mined to create profiles that represent our cyber identities

Table of Contents The Many Meanings of Information Information as Thought and Memory Information as Communication Process Information as Artifact Information as Energy Information as Identity in Cyberspace

The Fifth Voice Conclusion and Directions *Researching Serendipity in Digital Information Environments* Lori McCay-Peet, Elaine G. Toms, 2022-05-31 Chance luck and good fortune are the usual go to descriptors of serendipity a phenomenon aptly often coupled with famous anecdotes of accidental discoveries in engineering and science in modern history such as penicillin Teflon and Post it notes Serendipity however is evident in many fields of research in organizations in everyday life and there is more to it than luck implies While the phenomenon is strongly associated with in person interactions with people places and things most attention of late has focused on its preservation and facilitation within digital information environments Serendipity's association with unexpected positive user experiences and outcomes has spurred an interest in understanding both how current digital information environments support serendipity and how novel approaches may be developed to facilitate it Research has sought to understand serendipity how it is manifested in people's personality traits and behaviors how it may be facilitated in digital information environments such as mobile applications and its impacts on an individual an organizational and a wider level Because serendipity is expressed and understood in different ways in different contexts multiple methods have been used to study the phenomenon and evaluate digital information environments that may support it This volume brings together different disciplinary perspectives and examines the motivations for studying serendipity the various ways in which serendipity has been approached in the research methodological approaches to build theory and how it may be facilitated Finally a roadmap for serendipity research is drawn by integrating key points from this volume to produce a framework for the examination of serendipity in digital information environments *Third Space, Information Sharing, and Participatory Design* Preben Hansen, Ina Fourie, Anika Meyer, 2022-05-31 Society faces many challenges in workplaces everyday life situations and education contexts Within information behavior research there are often calls to bridge inclusiveness and for greater collaboration with user centered design approaches and more specifically participatory design practices Collaboration and participation are essential in addressing contemporary societal challenges designing creative information objects and processes as well as developing spaces for learning and information and research interventions The intention is to improve access to information and the benefits to be gained from that This also applies to bridging the digital divide and for embracing artificial intelligence With regard to research and practices within information behavior it is crucial to consider that all users should be involved Many information activities i.e. activities falling under the umbrella terms of information behavior and information practices manifest through participation and thus methods such as participatory design may help unfold both information behavior and practices as well as the creation of information objects new models and theories Information sharing is one of its core activities For participatory design with its value set of democratic inclusive and open participation towards innovative practices in a diversity of contexts it is essential to understand how information activities such as sharing manifest itself For information behavior studies it is essential to deepen understanding of how information sharing manifests in order to improve access to information and the use of

information Third Space is a physical virtual cognitive and conceptual space where participants may negotiate reflect and form new knowledge and worldviews working toward creative practical and applicable solutions finding innovative appropriate research methods interpreting findings proposing new theories recommending next steps and even designing solutions such as new information objects or services Information sharing in participatory design manifests in tandem with many other information interaction activities and especially information and cognitive processing Although there are practices of individual information sharing and information encountering information sharing mostly relates to collaborative information behavior practices creativity and collective decision making Our purpose with this book is to enable students researchers and practitioners within a multi disciplinary research field including information studies and Human Computer Interaction approaches to gain a deeper understanding of how the core activity of information sharing in participatory design in which Third Space may be a platform for information interaction is taking place when using methods utilized in participatory design to address contemporary societal challenges This could also apply for information behavior studies using participatory design as methodology We elaborate interpretations of core concepts such as participatory design Third Space information sharing and collaborative information behavior before discussing participatory design methods and processes in more depth We also touch on information behavior information practice and other important concepts Third Space information sharing and information interaction are discussed in some detail A framework with Third Space as a core intersecting zone platform and adaptive and creative space to study information sharing and other information behavior and interactions are suggested As a tool to envision information behavior and suggest future practices participatory design serves as a set of methods and tools in which new interpretations of the design of information behavior studies and eventually new information objects are being initiated involving multiple stakeholders in future information landscapes For this purpose we argue that Third Space can be used as an intersection zone to study information sharing and other information activities but more importantly it can serve as a Third Space Information Behavior TSIB study framework where participatory design methodology and processes are applied to information behavior research studies and applications such as information objects systems and services with recognition of the importance of situated awareness

Exploring Context in Information Behavior
Naresh Kumar Agarwal, 2022-05-31 The field of human information behavior runs the gamut of processes from the realization of a need or gap in understanding to the search for information from one or more sources to fill that gap to the use of that information to complete a task at hand or to satisfy a curiosity as well as other behaviors such as avoiding information or finding information serendipitously Designers of mechanisms tools and computer based systems to facilitate this seeking and search process often lack a full knowledge of the context surrounding the search This context may vary depending on the job or role of the person individual characteristics such as personality domain knowledge age gender perception of self etc the task at hand the source and the channel and their degree of accessibility and usability and the relationship that the seeker

shares with the source Yet researchers have yet to agree on what context really means While there have been various research studies incorporating context and biennial conferences on context in information behavior there lacks a clear definition of what context is what its boundaries are and what elements and variables comprise context In this book we look at the many definitions of and the theoretical and empirical studies on context and I attempt to map the conceptual space of context in information behavior I propose theoretical frameworks to map the boundaries elements and variables of context I then discuss how to incorporate these frameworks and variables in the design of research studies on context We then arrive at a unified definition of context This book should provide designers of search systems a better understanding of context as they seek to meet the needs and demands of information seekers It will be an important resource for researchers in Library and Information Science especially doctoral students looking for one resource that covers an exhaustive range of the most current literature related to context the best selection of classics and a synthesis of these into theoretical frameworks and a unified definition The book should help to move forward research in the field by clarifying the elements variables and views that are pertinent In particular the list of elements to be considered and the variables associated with each element will be extremely useful to researchers wanting to include the influences of context in their studies

The Notion of Relevance in Information Science Tefko Saracevic, 2022-05-31 Everybody knows what relevance is It is a ya know notion concept idea no need to explain whatsoever Searching for relevant information using information technology IT became a ubiquitous activity in contemporary information society Relevant information means information that pertains to the matter or problem at hand it is directly connected with effective communication The purpose of this book is to trace the evolution and with it the history of thinking and research on relevance in information science and related fields from the human point of view The objective is to synthesize what we have learned about relevance in several decades of investigation about the notion in information science This book deals with how people deal with relevance it does not cover how systems deal with relevance it does not deal with algorithms Spurred by advances in information retrieval IR and information systems of various kinds in handling of relevance a number of basic questions are raised But what is relevance to start with What are some of its properties and manifestations How do people treat relevance What affects relevance assessments What are the effects of inconsistent human relevance judgments on tests of relative performance of different IR algorithms or approaches These general questions are discussed in detail

Information Communication Ma Feicheng, 2022-05-31 This book introduces fundamentals of information communication At first concepts and characteristics of information and information communication are summarized And then five classic models of information communication are introduced The mechanisms and fundamental laws of the information transmission process are also discussed In order to realize information communication impediments in information communication process are identified and analyzed For the purpose of investigating implications of Internet information communication patterns and characteristics of information communication

in the Internet and Web 2.0 environment are also analyzed. In the end, case studies are provided for readers to understand the theory.

Search-Based Applications Gregory Grefenstette, Laura Wilber, 2022-05-31 We are poised at a major turning point in the history of information management via computers. Recent evolutions in computing, communications, and commerce are fundamentally reshaping the ways in which we humans interact with information and generating enormous volumes of electronic data along the way. As a result of these forces, what will data management technologies and their supporting software and system architectures look like in ten years? It is difficult to say, but we can see the future taking shape now in a new generation of information access platforms that combine strategies and structures of two familiar and previously quite distinct technologies: search engines and databases, and in a new model for software applications: the Search Based Application (SBA), which offers a pragmatic way to solve both well-known and emerging information management challenges. As of now, search engines are the world's most familiar and widely deployed information access tool, used by hundreds of millions of people every day to locate information on the Web, but few are aware they can now also be used to provide precise, multidimensional information access and analysis that is hard to distinguish from current database applications, yet endowed with the usability and massive scalability of Web search. In this book, we hope to introduce Search Based Applications to a wider audience, using real case studies to show how this flexible technology can be used to intelligently aggregate large volumes of unstructured data like Web pages and structured data like database content, and to make that data available in a highly contextual, quasi-real-time manner to a wide base of users for a varied range of purposes. We also hope to shed light on the general convergences underway in search and database disciplines, convergences that make SBAs possible and which serve as harbingers of information management paradigms and technologies to come.

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Urbanizer Case Study
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Information Architecture Wei Ding, Xia Lin, Michael Zarro, 2022-06-01 Information Architecture is about organizing and simplifying information, designing and integrating information spaces, systems, and creating ways for people to find and interact with information content. Its goal is to help people understand and manage information and make the right decisions accordingly. This updated and revised edition of the book looks at integrated information spaces in the web context and beyond, with a focus on putting theories and principles into practice. In the ever-changing social, organizational, and technological contexts, information architects not only design individual information spaces, e.g., websites, software applications, and mobile devices, but also tackle strategic aggregation and integration of multiple information spaces across websites, channels, modalities, and platforms. Not only do they create predetermined navigation pathways, but they also provide tools and rules for people to organize

information on their own and get connected with others Information architects work with multi disciplinary teams to determine the user experience strategy based on user needs and business goals and make sure the strategy gets carried out by following the user centered design UCD process via close collaboration with others Drawing on the authors extensive experience as HCI researchers User Experience Design practitioners and Information Architecture instructors this book provides a balanced view of the IA discipline by applying theories design principles and guidelines to IA and UX practices It also covers advanced topics such as iterative design UX decision support and global and mobile IA considerations Major revisions include moving away from a web centric view toward multi channel multi device experiences Concepts such as responsive design emerging design principles and user centered methods such as Agile Lean UX and Design Thinking are discussed and related to IA processes and practices

Building a Better World with Our Information William

Jones, 2022-05-31 Part 1 in The Future of series covers the fundamentals of personal information management PIM and then explores the seismic shift already well underway toward a world where our information is always at hand thanks to our devices and forever on the web Part 2 Transforming Technologies to Manage Our Information provides a more focused look at technologies for managing information The opening chapter discusses natural interface technologies of input output to free us from keyboard screen and mouse Successive chapters then explore technologies to save search and structure our information A concluding chapter introduces the possibility that we may see dramatic reductions in the clerical tax we pay as we work with our information Focus in this concluding Part 3 to the series shifts to the practical and to the near future What can we do now or soon to manage our information better And as we do so how might we build a better world Part 3 is in three chapters Chapter 10 Group Information Management and the Social Fabric in PIM How do we preserve and promote our PIM practices as we interact with others at home at school at work at play and in wider even global communities Chapter 11 PIM by Design What principles guide us How can developers build better tools for PIM How can the rest of us make better use of the tools we already have Chapter 12 To Each of Us Our Own concludes with an exploration of the ways each of us individually can develop better practices for the management of our information in service of the lives we wish to live and toward a better world we all must share

Images in Social Media Susanne Ørnager, Haakon Lund, 2022-06-01

This book focuses on the methodologies organization and communication of digital image collection research that utilizes social media content Image is here understood as a cultural conventional and commercial stock photo representation The lecture offers expert views that provide different interpretations of images and their potential implementations Linguistic and semiotic methodologies as well as eye tracking research are employed to both analyze images and comprehend how humans consider them including which salient features generally attract viewers attention This literature review covers image specifically photographic research since 2005 when major social media platforms emerged A citation analysis includes an overview of co citation maps that demonstrate the nexus of image research literature and the journals in which they appear Eye tracking

tests whether scholarly templates focus on the proper features of an image such as people objects time etc and if a prescribed theme affects the eye movements of the observer The results may point to renewed requirements for building image search engines As it stands image management already requires new algorithms and a new understanding that involves text recognition and very large database processing The aim of this book is to present different image research areas and demonstrate the challenges image research faces The book s scope is by necessity far from comprehensive since the field of digital image research does not cover fake news image manipulation mobile photos etc these issues are very complex and need a publication of their own This book should primarily be useful for students in library and information science psychology and computer science

The Future of Personal Information Management, Part I William Jones, 2022-06-01 We are well into a second age of digital information Our information is moving from the desktop to the laptop to the palmtop and up into an amorphous cloud on the Web How can one manage both the challenges and opportunities of this new world of digital information What does the future hold This book provides an important update on the rapidly expanding field of personal information management PIM Part I Always and Forever introduces the essentials of PIM Information is personal for many reasons It s the information on our hard drives we couldn t bear to lose It s the information about us that we don t want to share It s the distracting information demanding our attention even as we try to do something else It s the information we don t know about but need to Through PIM we control personal information We integrate information into our lives in useful ways We make it ours With basics established Part I proceeds to explore a critical interplay between personal information always at hand through mobile devices and forever on the Web How does information stay ours in such a world Part II Building Places of Our Own for Digital Information will be available in the Summer of 2012 and will consist of the following chapters Chapter 5 Technologies to eliminate PIM We have seen astonishing advances in the technologies of information management in particular to aid in the storing structuring and searching of information These technologies will certainly change the way we do PIM will they eliminate the need for PIM altogether Chapter 6 GIM and the social fabric of PIM We don t and shouldn t manage our information in isolation Group information management GIM especially the kind practiced more informally in households and smaller project teams goes hand in glove with good PIM Chapter 7 PIM by design Methodologies principles questions and considerations as we seek to understand PIM better and to build PIM into our tools techniques and training Chapter 8 To each of us our own Just as we must each be a student of our own practice of PIM we must also be a designer of this practice This concluding chapter looks at tips traps and tradeoffs as we work to build a practice of PIM and places of our own for personal information Table of Contents A New Age of Information The Basics of PIM Our Information Always at Hand Our Information Forever on the Web

Interactive IR User Study Design, Evaluation, and Reporting Jiqun Liu, Chirag Shah, 2022-05-31 Since user study design has been widely applied in search interactions and information retrieval IR systems evaluation studies a deep

reflection and meta evaluation of interactive IR IIR user studies is critical for sharpening the instruments of IIR research and improving the reliability and validity of the conclusions drawn from IIR user studies To this end we developed a faceted framework for supporting user study design reporting and evaluation based on a systematic review of the state of the art IIR research papers recently published in several top IR venues n 462 Within the framework we identify three major types of research focuses extract and summarize facet values from specific cases and highlight the under reported user study components which may significantly affect the results of research Then we employ the faceted framework in evaluating a series of IIR user studies against their respective research questions and explain the roles and impacts of the underlying connections and collaborations among different facet values Through bridging diverse combinations of facet values with the study design decisions made for addressing research problems the faceted framework can shed light on IIR user study design reporting and evaluation practices and help students and young researchers design and assess their own studies

Transforming Technologies to Manage Our Information William Jones, 2022-05-31 With its theme Our Information Always and Forever Part I of this book covers the basics of personal information management PIM including six essential activities of PIM and six different ways in which information can be personal to us Part I then goes on to explore key issues that arise in the great migration of our information onto the Web and into a myriad of mobile devices Part 2 provides a more focused look at technologies for managing information that promise to profoundly alter our practices of PIM and through these practices the way we lead our lives Part 2 is in five chapters Chapter 5 Technologies of Input and Output Technologies in support of gesture touch voice and even eye movements combine to support a more natural user interface NUI Technologies of output include glasses and watch watches Output will also increasingly be animated with options to zoom Chapter 6 Technologies to Save Our Information We can opt for life logs to record our experiences with increasing fidelity What will we use these logs for And what isn't recorded that should be Chapter 7 Technologies to Search Our Information The potential for personalized search is enormous and mostly yet to be realized Persistent searches situated in our information landscape will allow us to maintain a diversity of projects and areas of interest without a need to continually switch from one to another to handle incoming information Chapter 8 Technologies to Structure Our Information Structure is key if we are to keep find and make effective use of our information But how best to structure And how best to share structured information between the applications we use with other people and also with ourselves over time What lessons can we draw from the failures and successes in web based efforts to share structure Chapter 9 PIM Transformed and Transforming Stories from the Past Present and Future Part 2 concludes with a comparison between Licklider's world of information in 1957 and our own world of information today And then we consider what the world of information is likely to look like in 2057 Licklider estimated that he spent 85% of his thinking time in activities that were clerical and mechanical and might someday be delegated to the computer What percentage of our own time is spent with the clerical and mechanical What about in 2057 **Trustworthy**

Policies for Distributed Repositories Reagan W. Moore, Hao Xu, Mike Conway, Arcot Rajasekar, Jon Crabtree, Helen R. Tibbo, 2022-05-31 A trustworthy repository provides assurance in the form of management documents event logs and audit trails that digital objects are being managed correctly The assurance includes plans for the sustainability of the repository the accession of digital records the management of technology evolution and the mitigation of the risk of data loss A detailed assessment is provided by the ISO 16363 2012 standard Space data and information transfer systems Audit and certification of trustworthy digital repositories This book examines whether the ISO specification for trustworthiness can be enforced by computer actionable policies An implementation of the policies is provided and the policies are sorted into categories for procedures to manage externally generated documents specify repository parameters specify preservation metadata attributes specify audit mechanisms for all preservation actions specify control of preservation operations and control preservation properties as technology evolves An application of the resulting procedures is made to enforce trustworthiness within National Science Foundation data management plans

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