



InterPARES 2 Project

International Research on Permanent Authentic Records in Electronic Systems

Title: Dynamic, Interactive, Experiential:
Annotated Bibliography

Status: Final (public)

Version: 1.0

Submission Date: June 2005

Release Date: September 2007

Author: The InterPARES 2 Project

Writer(s): Jessica Glidewell
School of Library, Archival and Information Studies,
The University of British Columbia

Project Unit: Domain 2

URL: http://www.interpares.org/display_file.cfm?doc=ip2_biblio_d-i-e_annotated.pdf

Bibliographic Information

Author: Abidi, Syed Sibte Raza and Selvakumar Manickam
Title: "Leveraging XML-based electronic medical records to extract experiential clinical knowledge"
Journal or Book: *International Journal of Medical Informatics*
Publication Details: Vol. 68, Numbers 1-3 (December 2002)
Page Numbers: 187-203

Abstract

Case-based reasoning (CBR) diagnostic systems are useful to the medical community since they illustrate accumulated medical knowledge. However, these systems present problems since they must be continuously updated by highly trained experts in the field. This article explores alternative means of updating the electronic record systems, namely, creating new programs to transfer XML based records directly into the CBR systems.

Annotation

This article is useful as an example of the need for electronic recordkeeping systems within the medical profession. While the article is predominantly concerned with the methodology behind the XML transfer, it does provide a good overview, illustrating the value of dynamic and experiential system for the benefit of the medical community.

Keywords:

Dynamic: The term is not explicitly mentioned; however, it is implied that the system would be constantly changing to accommodate new information. The records would remain static.

Experiential: While the title does contain the term, it is implied in relation to the accumulation of knowledge within the medical profession. However, the experiential knowledge creates the need for a system which can accurately reflect the accumulation.

Bibliographic Information

Author: Barnard, Phillip J. and Jon May
Title: "Representing Cognitive Activity in Complex Tasks"
Journal or Book: *Human-Computer Interaction*
Publication Details: Vol. 14, Issue 1 / 2 (1999)
Page Numbers: 93-159

Abstract

This article deals with the theoretical basis needed for understanding the role of cognitive theory within human-computer interaction. It provides a general overview of the requirements and complications of developing this theory, and gives two case studies which are based on the proposed theory.

Annotation

The article is included in this bibliography because it provides an interesting viewpoint concerning the development of theory for a seemingly abstract purpose. In dealing with interactive computer systems, the knowledge architecture is based on the ability of humans to process information. According to the authors, this pattern of information processing, creates the need to understand how the cognitive human creates “memory records”, and is able to classify and learn experientially from them. It would be interesting to apply this structure to the realm of experiential electronic records.

Keywords:

Dynamic: The term is used in relation to the various forms of cognitive processing that occur, and can lead to recognized patterns, i.e. stimuli can produce various reactions, but a pattern of similar reactions can be observed in similar situations.

Interactive: The entire article is based on the goal of furthering the interaction between computer systems and humans by understanding the cognitive process.

Experiential: The term refers to the experiential “memory records” created by humans.

Bibliographic Information

Author:	Bradley, J.
Title:	“Irreducible Primary Concepts, Object Databases, and Experiential Systems”
Journal or Book:	University of Calgary, Computer Science Department
Web Address:	http://pharos.cpsc.ucalgary.ca/Dienst/Repository/2.0/Body/ncstrl.ucalgary_cs/1998-636-27/pdf

Abstract

This paper provides a pseudo-philosophical background to understanding the concept of experiential awareness. It identifies the differences between response-capability awareness and experiential awareness, and highlights the possibility of using the later in machines.

Annotation

While this paper does not deal directly with any form of records, it does provide a background for the theoretical understanding of experiential awareness. In addition, it is clearly written and understandable, which makes it an excellent foundational resource.

Keywords:

Experiential: The term is referred to in the context of “experiential awareness”: an irreducible primary of existence, illustrated by biological creatures ability to feel pain.

Bibliographic Information

Author:	Dale, Robert and others.
Title:	“Integrating natural language generation and hypertext to produce dynamic documents”
Journal or Book:	<i>Interacting with Computers</i>
Publication Details:	Vol. 11, Issue 2 (December 1998)
Page Numbers:	109-135

Abstract

The possibility of integrating hypertext electronic catalogues with natural language generation is described in this article. Ideally, this would maximize the coherence and usefulness of the texts which are presented to the reader utilizing the catalog. In addition, two case studies are presented, as well as a survey of the current hypertext cataloguing systems that are available.

Annotation

This article provides an interesting method of creating user-centered responses from an electronic cataloguing system. While the case studies are useful, it is predominantly noteworthy, due to its lack of concern with maintaining the “dynamic” texts that are generated.

Keywords:

Dynamic: Although the authors define this approach as “dynamic hypertext”, its ability to augment the text is based on its experiential use. The system would produce dynamic records, although this is not discussed.

Interactive: The term is implicit, concerning the use of the hypertext systems by the user.

Experiential: While the article does not explicitly deal with experiential

records, an experiential factor is implicitly present: the proposed systems are designed to present the context of each entry based on what the reader has seen previously.

Bibliographic Information

Author: Davis, Marc
Title: "Theoretical Foundations for Experiential System Design"
Journal or Book: *International Multimedia Conference: Proceedings of the 2003 ACM Workshop on Experiential Telepresence*
Publication Details: New York: AMC Press, 2003
Page Numbers: 45-52
Web Address: http://portal.acm.org/ft_gateway.cfm?id=982491&type=pdf&coll=ACM&dl=ACM&CFID=45574638&CFTOKEN=82656889

Abstract

In an attempt to prevent misconceptions about the components of experiential systems, the author examines the concepts and methods which create the systems. In addition, the author advocates that approaches to the study must be interdisciplinary.

Annotation

This article was included in the bibliography, since it provides an interesting theoretical framework in which to place experiential systems. By applying phenomenology to the methods by which humans read and view items, the author creates a five point conceptual framework for analyzing, evaluating and designing experiential systems. While the author does not discuss the idea, it is possible that the framework could lead to defining criteria concerning the definition of an experiential system.

Keywords:

Experiential: The term is used; however, it is not defined. Rather, it is simply stipulated that the system design must be interdisciplinary in order to fully understand the experiential aspects.

Bibliographic Information

Author: Hilt, Volker and others
Title: "Interactive Media on Demand: Generic Recording and Replay of Interactive Media"

Journal or Book: Streams”
Proceedings of the Ninth International ACM Conference on Multimedia
Publication Details: New York: ACM Press, 2001
Page Numbers: 593-594
Web Address: <http://delivery.acm.org/10.1145/510000/500251/p593-hilt.pdf?key1=500251&key2=9379368111&coll=ACM&dl=ACM&CFID=45574638&CFTOKEN=82656889>

Abstract

The article is centered on the development of a generic recording system for interactive media, which can provide access to recorded media streams.

Annotation

This is a brief article, but it does explore the technical methods of recording and providing a standardized framework for interactive media through a case study. However, it does not expand on the topic in any detail, making it informative on certain aspects but not foundational.

Keywords:

Dynamic: The term is not explicitly discussed; however, it is noted that interactive media changes, either by the passage of time or by events.

Interactive: The term is used in the context of “distributed interactive media”, i.e. a media which allows a distributed group of users to interact with the medium itself.

Bibliographic Information

Author: Lynch, Clifford
Title: *“Authenticity and Integrity in the Digital Environment: An Exploratory Analysis of the Central Role of Trust”*
Publication Details: Council on Library and Information Resources: Reports website
Web Address: <http://www.clir.org/pubs/reports/pub92/lynch.html>

Abstract

This article presents an overview of the key issues surrounding electronic records:

authenticity, reliability and provenance. It applies definitions and explanations to these concepts, and examines the division between areas that can be mandated and those which remain subjective.

Annotation

While this article is predominantly concerned with the authenticity and reliability of data, the author does refer to experiential works, placing these works on the highest level of the digital object hierarchy. However, extensive concepts concerning experiential works are not discussed since they are not commonly understood. The author does note that the discussion presented in the paper can be applied to experiential works; however, it is cautioned that problems can arise when identifying what constitutes an authentic experience.

Keywords:

Interactive: The term is linked with experiential, to define the highest level within the hierarchy of digital objects, where the emphasis is no longer the data, but the interaction of the digital object and the rendering system.

Experiential: The term is linked with interactive, as above.

Bibliographic Information

Author:	Mateas, Michael
Title:	“Expressive AI: A Hybrid Art and Science Practice”
Journal or Book:	<i>Leonardo</i>
Publication Details:	Vol. 34, Issue 2 (2001)
Page Numbers:	147-153

Abstract

Expressive Artificial Intelligence (AI) is an art form combining cultural production and AI research practices. The article describes three art pieces created through Expressive AI, and the artistic influence on AI research in general.

Annotation

While this article does not refer to records, it is concerned with the dynamic architecture possibilities presented by AI. In addition, the author discusses the preservation of Excessive AI for cultural purposes. It would be interesting to apply this need for preservation to the records created during, and resulting from the artistic practice.

Keywords:

Dynamic: The term is used to describe the moment-by-moment changing of the world, which provides stimuli for the AI system to react with.

Interactive: The author links Expressive AI to “interactionist” AI, in which the AI program interacts with the world. This interaction is part of the cultural art form.

Bibliographic Information

Author: Najim, K. and G. Oppenheim
Title: “Learning Systems: Theory and Application”
Journal or Book: *IEEE Proceedings*
Publication Details: Vol. 138, Number 4 (July 1991)
Page Numbers: 183-192
Web Address: <http://ieeexplore.ieee.org/iel5/2192/2686/00081896.pdf?tp=&arnumber=81896&isnumber=2686>

Abstract

In this report, learning systems are described both in theory and in practice. In addition, applications of learning systems and their relationship to neural networks and artificial intelligence are discussed.

Annotation

This report is highly technical; however, it does provide a detailed analysis of various types of learning systems. This is useful since learning systems are experiential: they modify their behavior in response to their environment. Ideas concerning the preservation of experiential records could arise from methods being used to preserve and maintain mechanized learning systems.

Keywords:

Experiential: The term is implied through the definition of learning system: a system which modifies behavior from external environmental factors.

Bibliographic Information

Author: Rauterberg, Matthias and Eberhard Ulich
Title: “Information Processing for Learning Systems: and Action Theoretical Approach”

Journal or Book: *IEEE International Conference on Systems, Man and Cybernetics*
Publication Details: Vol. 3, 1996
Page Numbers: 2276-2281
Web Address: <http://ieeexplore.ieee.org/iel3/4232/12283/00565520.pdf?tp=&arnumber=565520&isnumber=12283>

Abstract

This article explores the need to have a cognitive knowledge base, on which to develop a learning system. The ability to process information, predominantly by integrating concepts such as activity, perception and learning, is discussed.

Annotation

This article is psychologically based; however, it is still useful for understanding the role of learning systems. This leads to a higher understanding of experiential systems. Of interest, is the discussion surrounding the human need for variety, gained from the interaction of learning systems with their environment.

Keywords:

Experiential: The term is implied through the human ability to store mental schemata which guide further behavior.

Bibliographic Information

Author: Singh, Rahul and others
Title: "Designing Experiential Environments for the Management of Personal Multimedia"
Journal or Book: *Proceedings of the 12th Annual ACM International Conference on Mulitmedia*
Publication Details: New York: ACM Press, 2004
Page Numbers: 496-499
Web Address: <http://delivery.acm.org/10.1145/1030000/1027647/p496-singh.pdf?key1=1027647&key2=0335468111&coll=ACM&dl=ACM&CFID=45574638&CFTOKEN=82656889>

Abstract

As computational systems become easier to use, and more readily available, it is more common for people to electronically record events throughout their life. This creates the need for paradigms to be developed which help to mediate the interactions between the user and various forms of media. This article examines possible paradigms and a case

study.

Annotation

Central to the paradigms presented in this article is the concept of “event-based” unified, multimedia models, where the user is central. This model has been illustrated by a prototype system that chronicles the life of the user in a format which represents the dynamic relationships in the media. The goal of the discussion is to create an interactive and experiential user interface. It is interesting to note that the entire article, paradigm and the prototype, appear to form a “personal archive” of mixed media records. The author fails to provide any direct connection between electronic records or archival theories and the theories for this project; however, it can be easily inferred.

Keywords:

Dynamic: The term is used to represent the changing relationships within the data in the system.

Interactive: The term is used to describe the contact between the users and the information. One of the fundamental challenges of the system is to support efficient and effective interactions.

Experiential: The term is used as “experiential environment”: systems and interfaces that take advantage of the human-machinery synergy and allow users to use their senses and directly interact with the data.

Bibliographic Information

Author:	Storrs, Graham
Title:	“A Conceptualization of Human-Computer Interaction”
Journal or Book:	<i>IEE Colloquium on Theory in Human Computer Interaction</i>
Publication Details:	1991
Page Numbers:	4/1-4/5
Web Address:	http://ieeexplore.ieee.org/iel3/1531/6182/00241134.pdf?tp=&arnumber=241134&isnumber=6182

Abstract

The article discusses the requirements and conceptualization of a theory for human-computer interaction. In addition, it divides the domain of human-computer interaction into five domains, and provides a description and specifications for each section.

Annotation

While this article is predominantly concerned with the theories behind human-computer interaction, it does provide good background and definitions for concepts behind this interaction. Of particular interest, is the section pertaining to the definition, characteristics and elements of interaction.

Keywords:

Interactive: The term (interaction) is defined as an exchange of information between participants where each has a purpose of using the exchange to change the state of itself or of one of more others.

Bibliographic Information

Author:	Thibadeau, Robert and others
Title:	“E-Commerce Catalog Construction: an Experiment with Programmable XML for Dynamic Documents”
Journal or Book:	<i>D-Lib Magazine</i>
Publication Details:	Vol. 5, Issue 2 (February 1999)
Web Address:	http://www.dlib.org/dlib/february99/thibadeau/02thibadeau.html

Abstract

This article examines the possibilities presented when the existing XML web standard is modified to include tagging designed to support conditional interpretation. By including these tags, it is possible that a document could perform computation in addition to its former ability to provide data for external computation. The article examines the background and a case study which involves creating and implementing such a program.

Annotation

This article provides a good example of the applications and implementations of dynamic documents. In addition, it illustrates possible uses for the augmented XML, and presents a detailed account of the creation of the case study. It is important to note, the author initially refers to the possibility for this procedure to transfer to the preservation of the newly designed catalogs; however, this is not discussed further.

Keywords:

Dynamic: While the article is centered on dynamic documents, the term is never defined.