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Michael L. Nelson

Professional Preparation

- 2000–2001 **Postdoctoral**, *University of North Carolina, School of Information and Library Science*, Chapel Hill, NC, Advisor: Gary Marchionini.
- 2000 **Ph.D. Computer Science**, *Old Dominion University*, Norfolk, VA, Advisor: Kurt Maly. Dissertation Title: *Buckets: Smart Objects for Digital Libraries*
- 1997 **M.S. Computer Science**, *Old Dominion University*, Norfolk, VA.
- 1991 **B.S. Computer Science**, *Virginia Tech*, Blacksburg, VA.

Appointments

- 2008–present **Associate Professor**, *Old Dominion University*, Norfolk, VA.
- 2002–2008 **Assistant Professor**, *Old Dominion University*, Norfolk, VA.
- 1991–2002 **Computer Engineer**, *NASA Langley Research Center*, Hampton, VA.
- 2002 **Consultant**, *Institute for Computer Applications in Science and Engineering (ICASE)*, Hampton, VA.
- 2000 **Summer Visiting Researcher**, *Air Force Research Laboratory*, Albuquerque, NM.
- 1999 **Summer Visiting Researcher**, *Air Force Research Laboratory*, Albuquerque, NM.
- 1995–1996 **Principal**, *Unified Research Laboratories*, Hampton, VA.
- 1991 **Systems Programmer**, *Computer Sciences Corporation*, Hampton, VA.

Awards and Recognition

- 2010 **Digital Preservation Coalition (DPC) Digital Preservation Award**, *For Work on Memento*, London UK, December 1 2010.
- 2010 **Microsoft Research Faculty Summit 2010**, *For Work on Memento*, Redmond WA, July 12-13 2010.
- 2010 **O'Reilly Foo Camp**, *For Work on Memento*, Sebastopol CA, June 24-28 2010.
- 2007–2011 **NSF CAREER Award**, *Self-Preserving Digital Objects*.
- 2007 **Invited Participant**, *NSF/JISC Repositories Workshop*, April 17-19, 2007, Phoenix AZ.
- 2004 **Best Poster**, *ACM/IEEE JCDL 2004*.
- 2003 **Best Paper Finalist**, *ACM/IEEE JCDL 2003*.

- 2001 **Award for the NACA digital library**, *NASA Langley Research Center.*
- 2000–2001 **Information Technology Fellowship**, *NASA Langley Research Center.*
- 2000 **Award for Research Excellence**, *NASA Langley Research Center.*
- 1996 **Best Technical Site for the NASA Technical Report Server**, *Industry.Net.*
- 1994 **Team Excellence Award for Internet Fair 1**, *NASA Langley Research Center.*
- 1993 **Award for the Langley Technical Report Server**, *NASA Langley Research Center.*

Grants (\$5.9M total, PI on 11 of 15)

- 2011 M. L. Nelson (PI), M. C. Weigle, K. Gossett, L. Potts, “Identifying and Archiving Culturally Important Conversations in the Social Web”, ODU Research Foundation, \$54,000
- 2010–2013 H. Garcia-Molina (PI), M. L. Nelson, F. McCown, “III: Large: Collaborative Research: Web Archive Cooperative”, NSF, \$2,858,601 (ODU portion is \$399,754)
- 2010–2012 M. L. Nelson, “Integrating the Past Web Into the Current Web”, Library of Congress, \$450,000
- 2008 M. L. Nelson, “Client-Side Preservation Techniques for ORE Aggregations”, Andrew Mellon Foundation, \$24,500
- 2007–2011 M. L. Nelson, “CAREER: Self-Preserving Digital Objects”, NSF, \$540,754
- 2007–2010 M. L. Nelson (PI), H. Van de Sompel, “Tools for a Preservation-Ready Web”, Library of Congress, \$249,941
- 2006–2007 M. L. Nelson, “SGER: In Vivo Digital Preservation”, NSF, \$101,895
- 2006 M. L. Nelson, “Repository Design and Support for the Library of Congress”, Library of Congress, \$16,156
- 2005–2006 M. L. Nelson, “OAI-PMH Repository Analysis for the NASA Langley Research Center Atmospheric Sciences Data Center”, NASA LaRC, \$50,892
- 2005–2006 M. L. Nelson (PI), J. Bollen, “Shared Infrastructure Preservation Models”, NSF, \$111,300
- 2004–2005 M. L. Nelson (PI), J. Bollen, “Self-Preserving Digital Objects”, Library of Congress, \$109,836
- 2004–2005 M. L. Nelson, “mod_oai: Getting OAI for Free”, Andrew Mellon Foundation, \$47,433
- 2003–2004 K. Maly (PI), M. Zubair, M. L. Nelson, J. Bollen, “Digital Library Technology/Application Development”, NASA LaRC, \$240,000
- 2002–2004 K. Maly (PI), M. Zubair, M. L. Nelson, “Kepler – A Communal Digital Library”, NSF, \$700,000
- 2001–2002 K. Maly (PI), M. Zubair, M. L. Nelson, “An OAI-Compliant Federated Physics Digital Library for the NSDL”, NSF, \$479,997

Protocols and Specifications

- [1] Herbert Van de Sompel, Michael Nelson, and Robert Sanderson. HTTP framework for time-based access to resource states – Memento, Internet Draft draft-vandesompel-memento-02, June 3 2011.
- [2] Carl Lagoze, Herbert Van de Sompel, Pete Johnston, Michael Nelson, Robert

- Sanderson, and Simeon Warner. ORE Specification - Abstract Data Model. <http://www.openarchives.org/ore/datamodel>, 2008.
- [3] Carl Lagoze, Herbert Van de Sompel, Pete Johnston, Michael Nelson, Robert Sanderson, and Simeon Warner. ORE Specification - Vocabulary. <http://www.openarchives.org/ore/vocabulary>, 2008.
 - [4] Carl Lagoze, Herbert Van de Sompel, Pete Johnston, Michael Nelson, Robert Sanderson, and Simeon Warner. ORE User Guide - Primer. <http://www.openarchives.org/ore/primer>, 2008.
 - [5] Carl Lagoze, Herbert Van de Sompel, Pete Johnston, Michael Nelson, Robert Sanderson, and Simeon Warner. ORE User Guide - Resource Map Implementation in Atom. <http://www.openarchives.org/ore/atom>, 2008.
 - [6] Carl Lagoze, Herbert Van de Sompel, Pete Johnston, Michael Nelson, Robert Sanderson, and Simeon Warner. ORE User Guide - Resource Map Implementation in RDF/XML. <http://www.openarchives.org/ore/rdfxml>, 2008.
 - [7] Carl Lagoze, Herbert Van de Sompel, Pete Johnston, Michael Nelson, Robert Sanderson, and Simeon Warner. ORE User Guide - Resource Map Implementation in RDFa. <http://www.openarchives.org/ore/rdfa>, 2008.
 - [8] Carl Lagoze, Herbert Van de Sompel, Pete Johnston, Michael Nelson, Robert Sanderson, and Simeon Warner. ORE User Guide - HTTP Implementation. <http://www.openarchives.org/ore/http>, 2008.
 - [9] Carl Lagoze, Herbert Van de Sompel, Pete Johnston, Michael Nelson, Robert Sanderson, and Simeon Warner. ORE User Guide - Resource Map Discovery. <http://www.openarchives.org/ore/discovery>, 2008.
 - [10] Carl Lagoze, Herbert Van de Sompel, Michael L. Nelson, and Simeon Warner. Conveying rights expressions about metadata in the OAI-PMH framework. <http://www.openarchives.org/OAI/2.0/guidelines-rights.htm>, 2005.
 - [11] Carl Lagoze, Herbert Van de Sompel, Michael L. Nelson, Simeon Warner, Patrick Hochstenbach, and Henry Jerez. Specification for an OAI Static Repository and an OAI Static Repository Gateway. <http://www.openarchives.org/OAI/2.0/guidelines-static-repository.htm>, 2003.
 - [12] Carl Lagoze, Herbert Van de Sompel, Michael L. Nelson, and Simeon Warner. Implementation guidelines for the Open Archives Initiative Protocol for Metadata Harvesting. <http://www.openarchives.org/OAI/2.0/guidelines.htm>, 2005.
 - [13] Carl Lagoze, Herbert Van de Sompel, Michael L. Nelson, and Simeon Warner. The Open Archives Initiative Protocol for Metadata Harvesting. <http://www.openarchives.org/OAI/openarchivesprotocol.html>, 2002.

Proceedings Edited

- [1] Gary Marchionini, Michael L. Nelson, and Catherine C. Marshall, editors. *ACM/IEEE Joint Conference on Digital Libraries, JCDL 2006, Chapel Hill, NC, USA, June 11-15, 2006, Proceedings*. ACM, 2006.
- [2] Michael L. Nelson, Kurt Maly, Mohammad Zubair, and Diann Rucsh-Feja, editors. *Experimental OAI-Based Digital Library Systems, Workshop at the 2001 European Conference on Digital Libraries (ECDL), Darmstadt Germany, September 8, 2001*. NASA (NASA/TM-2002-211638), 2002.

Book Chapters

- [1] Michael L. Nelson, Carl Lagoze, Herbert Van de Sompel, Pete Johnston, Robert Sanderson, and Simeon Warner. Object Reuse and Exchange. In *Wireless Communication and Information*

– *Radio Engineering and Multimedia Applications*, pages 259–265. Verlag Werner Hulsbusch, 2009.

- [2] Martin Klein, Frank McCown, Joan A. Smith, and Michael L. Nelson. How much preservation do I get if I do absolutely nothing? Using the Web Infrastructure for digital preservation. In *Content Engineering: Konzepte, Technologien und Anwendungen in der Medienproduktion*, pages 71–87. Gito Verlag, 2007.
- [3] Frank McCown, Joan A. Smith, Michael L. Nelson, and Johan Bollen. Reconstructing websites for the lazy webmaster. In *Dynamics of Search Engines: An Introduction*, pages 81–112. The Icfai University Press, 2007.
- [4] Gretchen L. Gottlich, John M. Meyer, Michael L. Nelson, and David J. Bianco. Integrating information technology into large organizations. In *Cases in Information Technology Management in Modern Organizations*, pages 210–225. Idea Group Inc., 1997.

Refereed Journals

- [1] Carl Lagoze, Michael L. Nelson, Herbert Van de Sompel, Simeon Warner, Robert Sanderson, and Pete Johnston. A Web-Based Resource Model for Scholarship 2.0: Object Reuse & Exchange. *Concurrency and Computation: Practice and Experience*, 2010.
- [2] Frank McCown, Catherine C. Marshall, and Michael L. Nelson. Why websites are lost (and how they're sometimes found). *Communications of the ACM*, 52(11):141–145, 2009.
- [3] Michael L. Nelson, Frank McCown, Joan A. Smith, and Martin Klein. Using the web infrastructure to preserve web pages. *International Journal on Digital Libraries*, 6(4):327–349, 2007.
- [4] Johan Bollen, Michael L. Nelson, Gary Geisler, and Raquel Araujo. Usage derived recommendations for a video digital library. *Journal of Network and Computer Applications*, 30(3):1059–1083, 2007.
- [5] Frank McCown, Xiaoming Liu, Michael L. Nelson, and Mohammad Zubair. Search engine coverage of the OAI-PMH corpus. *IEEE Internet Computing*, 10(2):66–73, 2006.
- [6] Michael L. Nelson and Herbert Van de Sompel. IJDL special issue on complex digital objects: Guest editors' introduction. *International Journal on Digital Libraries*, 6(2):113–114, 2006.
- [7] Xiaoming Liu, Johan Bollen, Michael L. Nelson, and Hebert Van de Sompel. Co-authorship networks in the digital library research community. *Information Processing and Management*, 41(6):1462–1480, 2005.
- [8] Xiaoming Liu, Kurt Maly, Michael L. Nelson, and Mohammad Zubair. Lessons Learned with Arc, an OAI-PMH Service Provider. *Library Trends*, 53(4):590–603, 2005.
- [9] Michael L. Nelson, JoAnne R. Calhoun, and Terry L. Harrison. OAI and NASA scientific and technical information. *Library Hi-Tech*, 21(2):140–150, 2003.
- [10] Xiaoming Liu, Kurt Maly, Mohammad Zubair, Qiaoling Hong, Michael L. Nelson, Frances Knudson, and Irma Holtkamp. Federated Searching Interface Techniques for Heterogeneous OAI Repositories. *Journal of Digital Information*, 2(4), 2002.
- [11] Michael L. Nelson and Kurt Maly. Buckets: smart objects for digital libraries. *Communications of the ACM*, 44(5):60–62, 2001.
- [12] Michael L. Nelson. Buckets A new digital library technology for preserving NASA research. *Journal of Government Information*, 28(4):369–394, 2001.
- [13] Michael L. Nelson. Better interoperability through the Open Archives Initiative. *New Review of Information Networking*, 7:133–146, 2001.
- [14] Nancy R. Kaplan and Michael L. Nelson. Determining the publication impact of a digital library. *Journal of the American Society for Information Science*, 51(4):324–339, 2000.

- [15] Michael L. Nelson and Kurt Maly. Preserving the pyramid of STI using buckets. *International Journal on Grey Literature*, 1(4):174–178, 2000.
- [16] Sandra L. Esler and Michael L. Nelson. Evolution of scientific and technical information distribution. *Journal of the American Society for Information Science*, 49(1):82–91, 1998.
- [17] Sandra L. Esler and Michael L. Nelson. NASA indexing benchmarks: evaluating text search engines. *Journal of Network and Computer Applications*, 20(4):339–353, 1997.
- [18] Sandra L. Esler and Michael L. Nelson. TRSkit: A Simple Digital Library Toolkit. *Journal of Internet Cataloging*, 1(2):41–55, 1997.
- [19] Michael L. Nelson and Ming-Hokng Maa. Optimizing the NASA Technical Report Server. *Internet Research: Electronic Network Applications and Policy*, 6(1):64–70, 1996.
- [20] Michael L. Nelson, Gretchen L. Gottlich, David J. Bianco, Sharon S. Paulson, Robert L. Binkley, Yvonne D. Kellogg, Chris J. Beaumont, Robert B. Schmunk, Michael J. Kurtz, Alberto Accomazzi, and Omar Syed. The NASA technical report server. *Internet Research: Electronic Network Applications and Policy*, 5(2):25–36, 1995.

Refereed Conferences and Workshops

- [1] Scott G. Ainsworth, Ahmed Alsum, Hany SalahEldeen, Michele C. Weigle, and Michael L. Nelson. How much of the web is archived? In *Proceedings of the 11th annual international ACM/IEEE joint conference on Digital libraries*, JCDL '11, pages 133–136, 2011.
- [2] Martin Klein, Jeb Ware, and Michael L. Nelson. Rediscovering missing web pages using link neighborhood lexical signatures. In *Proceedings of the 11th annual international ACM/IEEE joint conference on Digital libraries*, JCDL '11, pages 137–140, 2011.
- [3] Abdulla Alasaadi and Michael L. Nelson. Persistent annotations deserve new uris. In *Proceedings of the 11th annual international ACM/IEEE joint conference on Digital libraries*, JCDL '11, pages 195–198, 2011.
- [4] Martin Klein, Moustafa Aly, and Michael L. Nelson. Synchronicity: automatically rediscover missing web pages in real time. In *Proceedings of the 11th annual international ACM/IEEE joint conference on Digital libraries*, JCDL '11, pages 475–476, 2011.
- [5] Martin Klein, Jeffery L. Shipman, and Michael L. Nelson. Is This a Good Title? In *HT '10: Proceedings of the 21st ACM Conference on Hypertext and Hypermedia*, pages 3–12, 2010.
- [6] Charles L. Cartledge and Michael L. Nelson. Analysis of Graphs for Digital Preservation Suitability. In *HT '10: Proceedings of the 21st ACM Conference on Hypertext and Hypermedia*, pages 109–118, 2010.
- [7] Martin Klein and Michael L. Nelson. Evaluating methods to rediscover missing web pages from the web infrastructure. In *JCDL '10: Proceedings of the 10th ACM/IEEE-CS Joint Conference on Digital Libraries*, 2010.
- [8] Herbert Van de Sompel, Robert Sanderson, Michael L. Nelson, Lyudmila L. Balakireva, Harihar Shankar, and Scott Ainsworth. An HTTP-Based Versioning Mechanism for Linked Data. In *Proceedings of the Linked Data on the Web Workshop (LDOW 2010)*, 2010. (Also available as arXiv:1003.3661).
- [9] Martin Klein, Olena Hunsicker, and Michael L. Nelson. Comparing the performance of us college football teams in the web and on the field. In *HT '09: Proceedings of the 20th ACM Conference on Hypertext and Hypermedia*, pages 63–72, New York, NY, USA, 2009. ACM.
- [10] Charles L. Cartledge and Michael L. Nelson. Unsupervised creation of small world networks for the preservation of digital objects. In *JCDL '09: Proceedings of the 9th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 349–352, New York, NY, USA, 2009. ACM.

- [11] Martin Klein, Olena Hunsicker, and Michael L. Nelson. Correlation of music charts and search engine rankings. In *JCDL '09: Proceedings of the 9th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 415–416, New York, NY, USA, 2009. ACM.
- [12] Martin Klein and Michael L. Nelson. Inter-search engine lexical signature performance. In *JCDL '09: Proceedings of the 9th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 413–414, New York, NY, USA, 2009. ACM.
- [13] Frank McCown and Michael L. Nelson. What happens when facebook is gone? In *JCDL '09: Proceedings of the 9th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 251–254, New York, NY, USA, 2009. ACM.
- [14] Frank McCown and Michael L. Nelson. A framework for describing web repositories. In *JCDL '09: Proceedings of the 9th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 341–344, New York, NY, USA, 2009. ACM.
- [15] Rabia Haq and Michael L. Nelson. Using timed-release cryptography to mitigate the preservation risk of embargo periods. In *JCDL '09: Proceedings of the 9th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 183–192, New York, NY, USA, 2009. ACM.
- [16] Carl Lagoze, Herbert Van de Sompel, Pete Johnston, Michael L. Nelson, Robert Sanderson, and Simeon Warner. Adding eScience Assets to the Data Web. In *Proceedings of the Linked Data on the Web Workshop (LDOW 2009)*, 2009. (Also available as arXiv:0906.2135).
- [17] Martin Klein and Michael L. Nelson. Approximating document frequency with term count values. In *ECIR '09: Proceedings of the 31st European Conference in Information Retrieval*, pages 620–627, 2009. (Also available as arXiv:0807.3755).
- [18] Frank McCown, Michael L. Nelson, and Herbert Van de Sompel. Everyone is a curator: Human-assisted preservation for ore aggregations. In *Proceedings of DigCCurr 2009*, 2009.
- [19] Carl Lagoze, Michael L. Nelson, Herbert Van de Sompel, Simeon Warner, Robert Sanderson, and Pete Johnston. A web-based resource model for escience: Object reuse & exchange. In *Proceedings of Microsoft eScience Workshop 2008*, 2008.
- [20] Martin Klein and Michael L. Nelson. A comparison of techniques for estimating IDF values to generate lexical signatures for the web. In *WIDM '08: Proceedings of the 10th ACM workshop on Web information and data management*, pages 39–46, 2008.
- [21] Martin Klein and Michael L. Nelson. Revisiting lexical signatures to (re-)discover web pages. In *ECDL '08: Proceedings of the 12th European Conference on Research and Advanced Technology for Digital Libraries*, pages 371–382, 2008.
- [22] Joan A. Smith and Michael L. Nelson. A quantitative evaluation of dissemination-time preservation metadata. In *ECDL '08: Proceedings of the 12th European Conference on Research and Advanced Technology for Digital Libraries*, pages 346–357, 2008.
- [23] Frank McCown and Michael L. Nelson. Recovering a website's server components from the web infrastructure. In *JCDL '08: Proceedings of the 8th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 124–133, 2008.
- [24] Frank McCown and Michael L. Nelson. Usage analysis of a public website reconstruction tool. In *JCDL '08: Proceedings of the 8th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 371–374, 2008.
- [25] Charles L. Cartledge and Michael L. Nelson. Self-arranging preservation networks. In *JCDL '08: Proceedings of the 8th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 445–445, 2008.
- [26] Frank McCown, Norou Diawara, and Michael L. Nelson. Factors affecting website reconstruction from the web infrastructure. In *JCDL '07: Proceedings of the 7th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 39–48, 2007.

- [27] Frank McCown and Michael L. Nelson. Agreeing to disagree: search engines and their public interfaces. In *JCDL '07: Proceedings of the 7th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 309–318, 2007.
- [28] Martin Klein, Michael L. Nelson, and Juliet Z. Pao. Augmenting OAI-PMH repository holdings using search engine APIs. In *JCDL '07: Proceedings of the 7th ACM/IEEE-CS Joint Conference on Digital Libraries*, page 486, 2007.
- [29] Joan A. Smith and Michael L. Nelson. Generating best-effort preservation metadata for web resources at time of dissemination. In *JCDL '07: Proceedings of the 7th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 51–52, 2007.
- [30] Frank McCown and Michael L. Nelson. Search engines and their public interfaces: which APIs are the most synchronized? In *WWW '07: Proceedings of the 16th international conference on World Wide Web*, pages 1197–1198, 2007.
- [31] Frank McCown, Amine Benjelloun, and Michael L. Nelson. Brass: A queueing manager for Warrick. In *IWAW '07: Proceedings of the 7th International Web Archiving Workshop*, June 2007.
- [32] Martin Klein and Michael L. Nelson. OAI-PMH Repository Enhancement for the NASA Langley Research Center Atmospheric Sciences Data Center. In *IWAW '07: Proceedings of the 7th International Web Archiving Workshop*, 2007.
- [33] Joan A. Smith and Michael L. Nelson. CRATE: A Simple Model for Self-Describing Web Resources. In *IWAW '07: Proceedings of the 7th International Web Archiving Workshop*, 2007.
- [34] Catherine Marshall, Frank McCown, and Michael L. Nelson. Evaluating personal archiving strategies for Internet-based information. In *Proceedings of IS&T Archiving 2007*, pages 151–156, May 2007. (Also available as arXiv:0704.3647v1).
- [35] Frank McCown and Michael L. Nelson. Characterization of search engine caches. In *Proceedings of IS&T Archiving 2007*, pages 48–52, May 2007. (Also available as arXiv:cs/0703083v2).
- [36] Frank McCown, Joan A. Smith, Michael L. Nelson, and Johan Bollen. Lazy preservation: Reconstructing websites by crawling the crawlers. In *WIDM '06: Proceedings of the 8th annual ACM international workshop on Web information and data management*, pages 67 – 74, 2006.
- [37] Michael L. Nelson, Joan A. Smith, Ignacio Garcia del Campo, Herbert Van de Sompel, and Xiaoming Liu. Efficient, automatic web resource harvesting. In *WIDM '06: Proceedings of the 8th annual ACM international workshop on Web information and data management*, pages 43 – 50, 2006.
- [38] Terry L. Harrison and Michael L. Nelson. Just-in-time recovery of missing web pages. In *HYPertext '06: Proceedings of the Seventeenth ACM Conference on Hypertext and Hypermedia*, pages 157–168, 2006.
- [39] Frank McCown and Michael L. Nelson. Evaluation of crawler policies for a web-repository crawler. In *HYPertext '06: Proceedings of the Seventeenth ACM conference on Hypertext and Hypermedia*, pages 145–156, 2006.
- [40] Joan A. Smith, Martin Klein, and Michael L. Nelson. Repository replication using NNTP and SMTP. In *ECDL '06: Proceedings of the 10th European Conference on Research and Advanced Technology for Digital Libraries*, pages 51 – 62, 2006. (Longer version available as arXiv cs.DL/0606008).
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- [44] Michael L. Nelson, Herbert Van de Sompel, Xiaoming Liu, Terry L. Harrison, and Nathan McFarland. mod_oai: An Apache module for metadata harvesting. In *ECDL '05: Proceedings of the 9th European Conference on Research and Advanced Technology for Digital Libraries*, pages 509–510, 2005. (Longer version available as arXiv cs.DL/0503069).
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- [47] Daniel S. Swaney, Frank McCown, and Michael L. Nelson. Dynamic web file format transformations with grace. In *5th International Web Archiving Workshop (IWAW'05)*, September 2005.
- [48] Michael L. Nelson and Johan Bollen. If you harvest arxiv.org, will they come? In *JCDL '05: Proceedings of the 5th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 393–393, 2005.
- [49] Johan Bollen, Michael L. Nelson, Raquel Araujo, and Gary Geisler. Video recommendations for the open video project. In *JCDL '05: Proceedings of the 5th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 369–369, 2005.
- [50] Kurt Maly, Michael L. Nelson, Mohammad Zubair, Ashraf Amrou, Sathish Kothamasa, Lan Wang, and Richard Luce. Enhancing Kepler usability and performance. In *ECDL '04: Proceedings of the 8th European Conference on Research and Advanced Technology for Digital Libraries*, pages 317–328, 2004.
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Magazines, Reports and Other Publications

- [1] Charles L. Cartledge and Michael L. Nelson. Connectivity Damage to a Graph by the Removal of an Edge or a Vertex. Technical Report arXiv:1103.3075, 2011.
- [2] Jeb Ware, Martin Klein, and Michael L. Nelson. An Evaluation of Link Neighborhood Lexical Signatures to Rediscover Missing Web Pages. Technical Report arXiv:1102.0930, 2011.
- [3] Jeffery L. Shipman, Martin Klein, and Michael L. Nelson. Using Web Page Titles to Rediscover Lost Web Pages. Technical Report arXiv:1002.2439, 2010.
- [4] Herbert Van de Sompel, Michael L. Nelson, Robert Sanderson, Lyudmila L. Balakireva, Scott Ainsworth, and Harihar Shankar. Memento: Time Travel for the Web. Technical Report arXiv:0911.1112, 2009.
- [5] Michael L. Nelson. Report on the 2009 ACM/IEEE Joint Conference on Digital Libraries. *D-Lib Magazine*, 15(7/8), 2009.
- [6] Michael L. Nelson. Data-driven science: A new paradigm? *EDUCAUSE Review*, 44(4):6–7, 2009.
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- [8] Michael L. Nelson, Martin Klein, and Manoranjan Magudamudi. Correlation of expert and search engine rankings. Technical Report arXiv:0809.2851, Old Dominion University Department of Computer Science, 2008.
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- [18] Herbert Van de Sompel, Michael L. Nelson, Carl Lagoze, and Simeon Warner. Resource harvesting within the OAI-PMH framework. *D-Lib Magazine*, 10(12), 2004.
- [19] Aravind Elango, Johan Bollen, and Michael L. Nelson. Dynamic linking of smart digital objects based on user navigation patterns. Technical Report arXiv cs.DL/0401029, Old Dominion University Department of Computer Science, 2004.
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- [21] Simeon Warner and Michael L. Nelson. Report on the metadata harvesting workshop at JCDL 2003. *ACM SIGIR Forum*, 37(2):73–78, 2003.
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- [26] Michael L. Nelson and B. Danette Allen. Object persistence and availability in digital libraries. *D-Lib Magazine*, 8(1), 2002.
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- [49] Michael L. Nelson and Gretchen L. Gottlich. Electronic document distribution: Design of the anonymous FTP Langley Technical Report Server. Technical Report NASA TM-4567, NASA Langley Research Center, 1994.
- [50] Trey Arthur and Michael L. Nelson. Intel NX to PVM3.2 Message Passing Conversion Library. Technical Report NASA TM-109038, NASA Langley Research Center, 1993.
- [51] Joseph A. Kaplan and Michael L. Nelson. A comparison of queueing, cluster and distributed computing systems. Technical Report NASA TM-109025, NASA Langley Research Center, 1993.

Tutorials

- 2008-06-16 "Object Reuse and Exchange: The OAI-ORE Framework" (with Carl Lagoze, Herbert Van de Sompel and Simeon Warner), ACM/IEEE JCDL 2008 Tutorial, Pittsburgh PA
- 2006-06-(14-16) OAI-PMH Tutorial and Consultation, University of Southern California Libraries
- 2003-05-27 "Advanced Tutorial on Open Archives Initiative" (with Herbert Van de Sompel and Simeon Warner), ACM/IEEE JCDL 2003 Tutorial, Houston TX
- 2002-07-14 "Advanced Overview of Version 2.0 of the Open Archives Initiative Protocol for Metadata Harvesting" (with Herbert Van de Sompel and Simeon Warner), ACM/IEEE JCDL 2002 Tutorial, Portland OR

Invited Presentations

- 2010-11-10 "Memento: Time Travel for the Web", UNC Scholarly Communications Working Group, Chapel-Hill, NC
- 2010-09-09 "My Point of View", Web Archiving Cooperative Kick-off Meeting, Menlo-Park, CA
- 2010-09-09 "Review of Web Archiving", Web Archiving Cooperative Kick-off Meeting, Menlo-Park, CA
- 2010-06-21 "Memento: Time Travel for the Web", NDIIPP Partners Meeting, Washington DC
- 2009-12-15 "Memento: Time Travel for the Web", CNI Fall 2009 Project Briefing, Washington DC
- 2009-11-16 "Memento: Time Travel for the Web", Library of Congress Brown Bag Seminar, Washington DC
- 2009-10-29 "The Open Archives Initiative Object Reuse and Exchange Project", Keynote at RIBDA 2009, Lima Peru
- 2009-10-15 "The Open Archives Initiative Object Reuse and Exchange Project", Keynote at WCI 2009, Berlin Germany
- 2009-10-02 "(Re-)Discovering Lost Web Pages", Emory University Computer Science Department Colloquium, Atlanta GA
- 2009-10-01 "The Open Archives Initiative Object Reuse and Exchange Project", Emory University Library Colloquium, Atlanta GA
- 2009-06-25 "Synchronicity: Just-In-Time Discovery of Lost Web Pages", NDIIPP Partners Meeting, Washington DC
- 2009-03-13 "Can't Find Your 404s?", Santa Fe Complex Colloquium, Santa Fe NM
- 2009-03-12 "(Re-)Discovering Lost Web Pages", LANL Research Library Colloquium, Los Alamos NM
- 2008-09-07 "Tools for a Preservation-Ready Web", NDIIPP Partners Meeting, Ballston VA
- 2008-07-20 "Recommendations for a NASA Digital Library", NASA LaRC Technical Library Branch, Hampton VA
- 2007-05-16 "The Open Archives Initiative", Digital data preservation, sharing, and discovery: Challenges for Small Science Communities in the Digital Era, Durham NC
- 2007-01-17 "Using OAI-PMH Resource Harvesting & MPEG-21 DIDL for Digital Preservation", NDIIPP Partners Meeting, San Diego CA

- 2006-12-06 "How much preservation do I get if I do absolutely nothing? Using the Web Infrastructure for Digital Preservation", Media Production 2006, Berlin Germany
- 2006-12-01 "Evaluating Ingest Success: Using the AIHT", DCC/LUCAS Workshop, Liverpool UK
- 2006-06-29 "Thinking Differently About Web Page Preservation", Library of Congress Seminar, Washington DC
- 2005-10-20 "What's new from the OAI", OAI-4, Geneva Switzerland
- 2005-10-20 "OAI-PMH for resource harvesting", OAI-4, Geneva Switzerland
- 2005-07-12 "ODU AIHT", NDIIPP Partners Meeting, Warrenton VA
- 2005-06-23 "A New Model for Web Resource Harvesting", NASA/Raytheon Technology Infusion Team Meeting, Hampton VA
- 2005-05-17 "Shared Infrastructure Preservation Models", DIGARCH PI Meeting, Atlanta GA
- 2005-05-05 "Harvesting Resources with OAI-PMH", SOLINET Annual Membership Meeting, Atlanta GA
- 2005-03-29 "A New Model for Web Resource Harvesting", University of Florida Department of Computer Science Colloquium
- 2004-05-28 "Implementation of Digital Libraries", International Congress of Health Information, Lima Peru
- 2004-05-06 "A Review of Institutional Repository Projects and Technologies", Texas A&M Department of Computer Science Colloquium
- 2003-11-03 "New Digital Library Possibilities Using the OAI-PMH", First Latin American Workshop on the Production and Diffusion of Electronic Theses, Santiago Chile
- 2003-09-16 "Self-Preserving Digital Objects", AISTI Mini Conference, Santa Fe New Mexico
- 2003-09-12 "Institutional Archives Technology Overview", FLICC Workshop: Institutional Archives and Repositories in Government, Washington DC
- 2003-06-24 "U.S. Government Use of the OAI-PMH", IndoUS Workshop on Open Digital Libraries and Interoperability, Arlington VA
- 2003-03-20 "U.S. Government Use of the OAI-PMH", ISTE / NSF Ibero-American Digital Library Joint Project Development Symposium, Campinas, Brazil
- 2003-02-05 "Service Providers: Future Perspectives", Professional Scholarly Publishing Annual Conference, Washington DC
- 2002-10-18 "Service Providers: Future Perspectives", OAI Workshop, CERN Switzerland
- 2002-10-02 "New Digital Library Possibilities Using the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH)", International Conference on Scientific Electronic Publishing in Developing Countries, Valparaiso, Chile
- 2002-05-13 "New Developments in OAI", Open Archives Forum, Pisa Italy
- 2002-04-03 "OAI: XML-Based Digital Library Interoperability", CENDI: Federal STI Managers Meeting, Beltsville MD
- 2001-08-16 "OAI : Past, Present and Future", Managing Digital Video Content Workshop, Atlanta GA
- 2001-07-11 "OAI : Past, Present and Future", Open Archives Meeting: Developing an Agenda for Institutional E-print Archives, London UK
- 2001-04-21 "Uses of OAI in NASA", NASA STI Managers Meeting, Greenbelt MD

- 2000-12-12 “The Open Archives Initiative”, Exploration 2000: Workshop on Web-Based Language Documentation and Description, Philadelphia, PA
- 1999-11-09 “Smart Objects and Dumb Archives: Using Buckets in Digital Libraries”, ICASE Colloquium, Hampton, VA
- 1996-10-24 “Understanding the Internet’s Role in Technology Transfer and Organizational Strategy”, October Meeting of the Pittsburgh Large User Group (PLUG), Pittsburgh, PA
- 1996-10-09 “Using DCE/DFS in a Production Workstation Cluster”, ICASE/LaRC 2nd Industry Roundtable, Williamsburg, VA
- 1996-06-24 “WWW: An Overview of Technologies, Concepts, and Directions”, Army Training Support Center, Fort Eusits, VA
- 1994-10-22 “Changing the Way We do Business Through Use of the World Wide Web and NCSA Mosaic”, Virginia Society of Professional Engineers, Hampton, VA
- 1993-05-11 “PVM Use in Computational Aerosciences Projects”, First PVM Users Group Meeting, Knoxville, TN

Ph.D. Students

- 2007 **Frank McCown**, *Assistant Professor, Harding University*, Dissertation Title: Lazy Preservation: Reconstructing Websites from the Web Infrastructure.
- 2008 **Joan A. Smith**, *Chief Technology Strategist, Emory University Libraries*, Dissertation Title: Integrating Preservation Functions Into the Web Server.
- 2011 **Martin Klein**, *Post-doctoral Researcher, Los Alamos National Laboratory*, Dissertation Title: Using the Web Infrastructure for Real Time Recovery of Missing Web Pages.
- 2013* **Scott Ainsworth**, Dissertation Topic: Evaluation of Inter-Archive Access Policies.
- 2013* **Ahmed Alsum**, Dissertation Topic: Improving Memento Aggregators.
- 2013* **Charles Cartledge**, Dissertation Topic: Algorithms and Techniques for Self-Preserving Digital Objects.
- 2013* **Hany SalahEldeen**, Dissertation Topic: Inferring Archival Intent.
- 2014* **Justin Brunelle**, Dissertation Topic: Client-Side Archiving Techniques.
- 2014* **Louis Nguyen**, Dissertation Topic: Alternative Access Methods for Earth Science Data.
- TBD **Abdulla Alasaadi, Yasmin Anwar.**

M.S. Students

Thesis Option

- 2005 Terry L. Harrison, Thesis Title: Opal: In Vivo Based Preservation Framework for Locating Lost Web Pages
- 2008 Rabia Haq, Thesis Title: Using Timed-Release Cryptography to Mitigate the Preservation Risk of Embargo Periods
- 2012* Sawood Alam, Thesis Title: Implementing the Linda Communication Model Using the Web Infrastructure

- 2012* Gregory Szalkowski, Thesis Title: Evaluation of Machine Learning Techniques for the Prediction of NFL Game Results
- current Benjamin Pitts
- Project Option
- 2004 Sheffan Chan, Thomas Lutkenhouse
- 2005 Aravind Elango, Giridhar Manepalli, Suchitra Manepalli, Daniel Swaney
- 2006 Ignacio Garcia del Campo
- 2007 Amine Benjelloun, Manoranjan Magudam
- 2008 Olena Hunsicker, Venkata Sai Krishna Kamineni, Satish Lakkoju, Krishnan Ganesh Madras
- 2009 Sudhir Koneru, Venkata Potta
- 2010 Scott Ainsworth, Matthias Prellwitz, Jeffery Shipman, Jeb Ware
- 2011 Carlton Northern
- current Moustafa Aly

Teaching

Old Dominion University

- CS 895 Web-Based Information Retrieval - F11
- CS 895 Time on the Web - F10
- CS 795/895 Collective Intelligence - S09
- CS 791/891 Web Syndication Formats - S08
- CS 791/891 Technologies of Google Seminar - S07
- CS 791/891 Economics of Information Seminar - S06
- CS 791/891 Digital Preservation Seminar - S05, S04
- CS 751/851 Introduction to Digital Libraries - S11, S10, F06
- CS 695 Introduction to Digital Libraries - F05, F04, F03, F02
- CS 495/595 Peer-to-Peer Information Systems - F04, F03
- CS 495/595 Web Server Design - S09, S07, S06
- CS 418/518 Web Programming - F08, F07, F06
- CS 410 Computer Based Productivity I - S03

Unviersity of North Carolina

- INLS 110 Introduction to Digital Libraries - S01
- INLS 210 Complex Objects for Digital Libraries - S01

Old Dominion University (While at NASA LaRC)

- CS 495/595 Introduction to Digital Libraries - F99
- CS 745/845 Introduction to Digital Libraries - F98

Service

Editorial Boards

- 2005-present International Journal of Digital Libraries (IJDL)
2005-2006 ACM Journal on Education Resources in Computing (JERIC)

Organizing Committees

- 2011, 2009, 2008 Doctoral Consortium Co-Chair, ACM/IEEE Joint Conference on Digital Libraries
2011, 2007 Workshop Chair, ACM/IEEE Joint Conference on Digital Libraries
2006 Program Co-Chair, ACM/IEEE Joint Conference on Digital Libraries
2005 Tutorial Co-Chair, ACM/IEEE Joint Conference on Digital Libraries
2002 Co-Chair, Workshop on Distributed Computing Architectures for Digital Libraries (joint with ICPP 2002)
2001 Sponsoring and Exhibiting Chair, ACM/IEEE Joint Conference on Digital Libraries
2001 Co-Chair, Workshop on Experimental OAI-Based Digital Library Systems (joint with ECDL 2001)

Program Committees

- 2011–2007, 2005–2002 ACM/IEEE Joint Conference on Digital Libraries (JCDL)
2011, 2010 ACM Special Interest Group on Information Retrieval (SIGIR)
2012 ACM International Conference on Web Search and Data Mining (WSDM)
2009, 2007, 2005 ACM Workshop on Web Information and Data Management (WIDM)
2010, 2009 European Conference on Digital Libraries (ECDL)
2005-2003 Healthcare Digital Libraries Workshop (HDL)
2011, 2008, 2007 International Conference on Asian Digital Libraries (ICADL)
2009 International Workshop on Innovation in Digital Preservation (InDP)
2010, 2009 International Web Archiving Workshop (IWAW)
2009 International World Wide Web Conference (WWW)
2011 Temporal Web Analytics Workshop (TAWW)

Reviewer

- ACM Journal on Educational Resources in Computing
- ACM Transactions on Internet Technology
- ACM Transactions on the Web
- Communications of the ACM
- Data & Knowledge Engineering
- IEEE Internet Computing
- IEEE Intelligent Systems
- IEEE Systems, Man and Cybernetics Part A

- IEEE Transactions on Computers
- IEEE Transactions on Parallel and Distributed Systems
- Information Sciences
- International Journal of Digital Libraries
- Health Informatics Journal

Advisory Boards

- 2001-present Open Language Archive Community (OLAC)
- 2006-present University of Arizona, Graduate Certificate in Digital Information Management
- 2008-2010 H-Net Archivist Advisory Board

Professional Society Memberships

- Member, Association of Computing Machinery (ACM)
- Member, Institute of Electrical and Electronics Engineers (IEEE) Computer Society
- Member, American Society for Information Science & Technology (ASIS&T)

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