

Summary of Accomplishments for Michael L. Nelson in CY 2004

Research Statement

My research is in the area of digital libraries, specifically concerning the representation, responsibilities and interfaces between repositories and stored objects and the implications of these relationships to digital preservation. I am currently investigating how digital objects can be self-preserving, building Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) capability into web servers, conveying rights expressions in OAI-PMH, and studying digital library usage indicators. These are specific examples of the more general questions that motivate me:

- How can we radically increase digital preservation capability beyond the current resource intensive, repository-centric, "command and control" modality?
- How can we bring a principled, modeled approach to information exchange?
- How can we ensure the integrity of intellectual property expressions once information is exchanged?
- How can we measure the impact of information system on people's work habits? (and not just measure the impact of people on information systems.)

Positions Held

- Assistant Professor, Old Dominion University, Department of Computer Science, Norfolk Virginia, July 2002 - present

Students Supervised

1. Sheffan Chan, MS, graduated December 2004
2. Thomas Lutkenhouse, MS, graduated December 2004
3. Aravind Elango, MS, expected graduation Spring 2005
4. Daniel Swaney, MS, expected graduation Spring 2005
5. Terry Harrison, MS, expected graduation Summer 2005

Classes Taught

1. CS 791/891, Digital Preservation Seminar, Spring 2004, 9 students. Overall rating 6.0/6.0
2. CS 695, Introduction to Digital Libraries, Fall 2004. 11 students. Overall rating 5.6/6.0
3. CS 695, Peer-to-Peer Information Systems, Fall 2004, 8 students. Overall rating 5.40/6.0

Current Funding

1. Distinguished Visiting Lecturers Program, 2004-2005 (PI, \$10000, ODU)
2. Self-Preserving Digital Objects, 2004-2005 (PI, with J. Bollen (ODU), \$109836, Library of Congress)
3. mod_oai: Getting OAI for Free, 2004-2005 (PI, \$47433, Andrew Mellon Foundation)
4. Digital Library Technology/Application Development, 2004 (Co-PI, with K. Maly (ODU), M. Zubair (ODU), and J. Bollen (ODU), \$240000, NASA Langley Research Center)

Journal Articles Published

1. H. Van de Sompel, M. L. Nelson, C. Lagoze, S. Warner, "Resource Harvesting within the OAI-PMH Framework", D-Lib Magazine 10(12), 2004.

Refereed Conference Papers Published

1. M. L. Nelson, J. Bollen, J. R. Calhoun, C. E. Mackey, User Evaluation of the NASA Technical Report Server Recommendation Service, Proceedings of WIDM 2004, Washington DC, pp. 144-151.
2. K. Maly, M. L. Nelson, M. Zubair, A. Amrou, S. Kothamasa, L. Wang, R. Luce, Kepler - A Communal Digital Library, Proceedings of ECDL 2004, Bath UK, pp. 317-238.
3. Kurt J. Maly, Michael L. Nelson, Mohammad Zubair, Ashraf Amrou, S. Kothasama, Lan Wang, Richard Luce, Light-weight communal digital libraries, Proceedings of JCDL 2004, Tucson AZ, June 7-11, 2004, pp. 237-238.
4. Xiaoming Liu, Johan Bollen, Michael L. Nelson, Herbert Van de Sompel, Jeremy Hussell, Rick Luce, Linn Marks, Toolkits for visualizing co-authorship graph, Proceedings of JCDL 2004, Tucson AZ, June 7-11, 2004, pp. 404. (**Winner of the Best Poster Award**).
5. Michael L. Nelson, JoAnne R. Calhoun, Calvin E. Mackey, The OAI-PMH NASA Technical Report Server, Proceedings of JCDL 2004, Tucson AZ, June 7-11, 2004, pp. 400.

Other Publications

1. Herbert Van de Sompel, Carl Lagoze, Michael L. Nelson, Simeon Warner (eds.), "Conveying rights expressions about metadata in the OAI-PMH framework", 2004. Available at:
<http://www.openarchives.org/OAI/2.0/guidelines-rights.htm>.
2. Aravind Elango, Johan Bollen, Michael Nelson, Dynamic Linking of Smart Digital Objects Based on User Navigation Patterns, arXiv Technical Report, cs.DL/0401029, January 2004.
3. Terry L. Harrison, Aravind Elango, Johan Bollen, Michael Nelson, "Initial Experiences Re-Exporting Duplicate and Similarity Computation with an OAI-PMH aggregator", arXiv Technical Report, cs.DL/0401001, January 2004.

Invited Presentations & Tutorials

1. "An Update from the OAI", CNI Fall 2004 Task Force Meeting, Portland Oregon, (12/7/04)
2. "mod_oai: Metadata Harvesting for Everyone", DLF Forum 2004, Baltimore Maryland (10/27/04)
3. "OAI-PMH Tutorial", University of Southern California (6/15/04) (Invited)
4. "Implementation of Digital Libraries", International Congress of Health Information, Lima Peru (05/28/04) (Invited)
5. "A Review of Institutional Repository Projects and Technologies", Texas A&M (05/06/04) (Invited)

Service

1. Co-Editor, International Journal of Digital Libraries Special Issue on Digital Objects, to be published in 2005
2. Member, Program Committee, ACM/IEEE Joint Conference on Digital Libraries (JCDL 2004)
3. Member, Program Committee, Healthcare Digital Libraries Workshop, 2004
4. Co-Editor, Open Archives Initiative
5. Reviewer, Communications of the ACM, IEEE Systems, Man and Cybernetics Part A
6. Library Representative, Old Dominion University Computer Science Department