

# FRANK McCOWN

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Department of Computer Science  
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## Degrees

Ph.D. in Computer Science - Old Dominion University (2007)  
M.S. in Computer Science - University of Arkansas at Little Rock (2002)  
B.S. in Computer Science - Harding University (1996)

## Appointments

5/19 to Present – Content Developer for zyBooks (Los Gatos, CA)  
8/13 to Present – Associate Professor of Computer Science at Harding University (Searcy, AR)  
8/07 to 7/13 – Assistant Professor of Computer Science at Harding University (Searcy, AR)  
8/97 to 8/07 – Instructor of Computer Science at Harding University (Searcy, AR)  
6/96 to 8/97 – Software Engineer for Lockheed Martin Astronautics (Denver, CO)  
6/95 to 8/95 – Software Engineer Intern for Auto-trol Technology (Denver, CO)

## Consulting

### Legal Consultation

Since 2007 I have provided expert opinions for numerous law firms on archived web pages from the Internet Archive and other sources. In some cases I have recovered entire websites or looked for specific content in archived web pages.

### Education & Research

2015 – Jones & Bartlett Learning: Content contributor for *Android Programming Concepts* by Cornez and Cornez  
2013 – Addison-Wesley: Technical Reviewer for *Learning Mobile App Development* by Eierman and Iversen  
2012 – Pearson Education: Technical Reviewer for *Internet & World Wide Web How to Program, 5th Edition* by Paul Deitel and Harvey Deitel  
2009 – Pearson Education: Produced instructional videos for *Introduction to Programming in C++* by Y. Daniel Liang  
2008 – Los Alamos National Laboratory (Los Alamos, NM), Digital Library and Prototyping Team: Research investigating preservation of OAI-ORE resource maps

### Software Development

2017 – Faithlife (Bellingham, WA): Visiting developer working on Faithlife Bible app for Android  
2015 – HUB-CAPS (Searcy, AR): Web app for MS Highway Patrol, ASP.NET MVC and AngularJS  
2014 – Flatirons Solutions (Boulder, CO): Multiple web applications using Spring and AngularJS  
2011 – Memento Browser: Android web browser for viewing archived web pages  
2007 – Warrick: Reconstruct dead websites from various web archives and caches  
2004 – Down Under Exotic Timbers (Searcy, AR): Dynamic e-commerce website  
2004 – College Church of Christ (Searcy, AR): Designed online membership directory  
2003 – TV3 (Searcy, AR): Software for televising weather information  
2003 – Anderson Lawn (Searcy, AR): Dynamic website for managing customers

## Professional Societies

Association for Computing Machinery (ACM)  
ACM Special Interest Group on Computer Science Education (SIGCSE)

## Grants

2010-2014 – H. Garcia-Molina (PI), M. L. Nelson, F. McCown, “III: Large: Collaborative Research: Web Archive Cooperative”, NSF, \$2,858,601 (Harding portion is \$108K)

## Service

### Program Committees

- Web Archiving and Digital Libraries Workshop (WADL 2013-2020)
- Temporal Web Analytics Workshop (TAWW 2011-2019)
- Workshop Organizer: Exploring the WAC: Challenges in Providing Access to the World's Web Archives (Stanford University 2012)
- SMARTphones in the Curriculum workShop (SMACK 2011)
- HICSS 2011 MiniTrack: Web Information Credibility Analysis
- Workshop on Information Credibility on the Web (WICOW 2010)
- Program co-chair: International Workshop on Innovation in Digital Preservation (2009)
- ACM IEEE Joint Conference on Digital Libraries – JCDL (2008-present)
- WWW2009 track : User Interfaces and Mobile Web

### Reviewer

- NSF and other grant-giving institutions
- SIGCSE Symposium
- Consortium for Computing Sciences in Colleges
- International Journal on Digital Libraries
- Journal of Educational Resources in Computing

## Teaching

Capstone Software Development Project	Web Development I & II
Computing Seminar	Introduction to Programming
Computer Graphics	Introduction to Web Science
Data Communications and Networking	Mobile Application Development (Android)
Data Structures	Object-Oriented Programming
Game Programming	Search Engine Development
GUI Programming	

## Awards

Distinguished Teaching Award – Harding University (2011 and 2019)  
Outstanding Graduate Research Assistant – Old Dominion University (2007)  
College of Sciences Dissertation Fellowship – Old Dominion University (2006)  
Outstanding Graduate Assistant – Old Dominion University (2005)  
Dominion Graduate Scholar – Old Dominion University (2004)

## Publications

### Conference and Workshop Proceedings

1. Richard Schneider and Frank McCown, First Steps in Archiving the Mobile Web: Automated Discovery of Mobile Websites, In *Proceedings of the ACM IEEE Joint Conference on Digital Libraries (JCDL 2013)*, July 2013, Indianapolis, IN.
2. Heather Tweedy, Frank McCown, and Michael L. Nelson, A Memento Web Browser for iOS, In *Proceedings of the ACM IEEE Joint Conference on Digital Libraries (JCDL 2013)*, July 2013, Indianapolis, IN.
3. Daniel Sebastian, Frank McCown, and Michael L. Nelson, Semi-Automated Rediscovery of Lost YouTube Music Videos, In *Proceedings of the ACM IEEE Joint Conference on Digital Libraries (JCDL 2013)*, July 2013, Indianapolis, IN.
4. Frank McCown, Teaching Web Information Retrieval to Undergraduates, In *Proceedings of the 41st ACM technical symposium on Computer science education (SIGCSE 2010)*, Mar 2010, Milwaukee, WI.
5. Frank McCown and Michael L. Nelson, What Happens When Facebook is Gone?, In *Proceedings of the ACM IEEE Joint Conference on Digital Libraries (JCDL 2009)*, June 2009, Austin, TX.
6. Frank McCown and Michael L. Nelson, A Framework for Describing Web Repositories, In *Proceedings of the ACM IEEE Joint Conference on Digital Libraries (JCDL 2009)*, June 2009, Austin, TX.
7. Frank McCown, Michael L. Nelson, and Herbert Van de Sompel, Everyone is a Curator: Human-Assisted Preservation for ORE Aggregations. *Proceedings of DigCCurr 2009*, Apr 2009, Chapel Hill, NC.
8. Frank McCown and Michael L. Nelson , Recovering a Website's Server Components from the Web Infrastructure, In *Proceedings of the ACM IEEE Joint Conference on Digital Libraries (JCDL 2008)*, June 2008, Pittsburgh, PA.
9. Frank McCown and Michael L. Nelson , Usage Analysis of a Public Website Reconstruction Tool, In *Proceedings of the ACM IEEE Joint Conference on Digital Libraries (JCDL 2008)*, June 2008, Pittsburgh, PA.
10. Frank McCown, Amine Benjelloun, and Michael L. Nelson, Brass: A Queueing Manager for Warrick, In *Proceedings of the 7th International Web Archiving Workshop (IWA 2007)*, June 2007, Vancouver, British Columbia, Canada.
11. Frank McCown and Michael L. Nelson, Agreeing to Disagree: Search Engines and their Public Interfaces, In *Proceedings of the ACM IEEE Joint Conference on Digital Libraries (JCDL 2007)*, June 2007, Vancouver, British Columbia, Canada, p. 309-318.
12. Frank McCown, Norou Diawara, and Michael L. Nelson, Factors Affecting Website Reconstruction from the Web Infrastructure, In *Proceedings of the ACM IEEE Joint Conference on Digital Libraries (JCDL 2007)*, June 2007, Vancouver, British Columbia, Canada, p. 39-48.
13. Catherine C. Marshall, Frank McCown, and Michael L. Nelson, Evaluating Personal Archiving Strategies for Internet-based Information, In *Proceedings of IS&T Archiving 2007*, May 2007, Arlington, Virginia, USA, p. 151-156.
14. Frank McCown and Michael L. Nelson, Characterization of Search Engine Caches, In *Proceedings of IS&T Archiving 2007*, May 2007, Arlington, VA, p. 48-52.
15. Frank McCown and Michael L. Nelson, Search Engines and Their Public Interfaces: Which APIs are the Most Synchronized? In *Special interest tracks and posters of the 16th International World Wide Web Conference (WWW 2007)*, May 2007, Banff, Alberta, Canada, p. 1197-1198.
16. Frank McCown, Joan A. Smith, Michael L. Nelson, and Johan Bollen, Lazy Preservation: Reconstructing Websites by Crawling the Crawlers, In *Proceedings of the 8th ACM International Workshop on Web Information and Data Management (WIDM 2006)*, November 2006, Arlington, VA.
17. Frank McCown and Michael L. Nelson, Evaluation of Crawling Policies for a Web-Repository Crawler, In *Proceedings of the 17th ACM Conference on Hypertext and Hypermedia (HYPERTEXT 2006)*, August 2006. Odense, Denmark, p. 157-168.

18. Frank McCown, Johan Bollen, and Michael L. Nelson, Evaluation of the NSDL and Google Search Engines for Obtaining Pedagogical Resources, In *Proceedings of the 9th European Conference on Research and Advanced Technology for Digital Libraries (ECDL 2005)*, September 2005, Vienna, Austria. p. 344-355.
19. Frank McCown, Sheffan Chan, Michael L. Nelson, and Johan Bollen, The Availability and Persistence of Web References in D-Lib Magazine, In *Proceedings of the 5th International Web Archiving Workshop (IWA 2005)*, September 2005, Vienna, Austria.
20. Daniel S. Swaney, Frank McCown, and Michael L. Nelson, Dynamic Web File Format Transformations with Grace, In *Proceedings of the 5th International Web Archiving Workshop (IWA 2005)*, September 2005, Vienna, Austria.
21. Kailash Bhoopalram, Kurt Maly, Frank McCown, Ravi Mukkamala, and Mohammed Zubair, A Flexible Framework for Content-Based Access Management for Federated Digital Libraries, In *Proceedings of the 9th European Conference on Research and Advanced Technology for Digital Libraries (ECDL 2005)*, September 2005, Vienna, Austria, p. 489-490.
22. Kailash Bhoopalram, Kurt Maly, Frank McCown, Ravi Mukkamala, and Mohammed Zubair, A Standards-Based Approach for Supporting Dynamic Access Policies for a Federated Digital Library, In *Proceedings of the 8th International Conference on Asian Digital Libraries (ICADL 2005)*, December 2005, Bangkok, Thailand.

### Journal and Magazine Articles

1. Frank McCown, Monica Yarbrough, and Keith Enlow, Tools for Discovering and Archiving the Mobile Web, *D-Lib Magazine*, March/April 2015, Vol. 21, No. 3/4.
2. Frank McCown and Stacy Gibson, Using Interdisciplinary Teams in a Mobile Application Development Course, *Journal of Computing Sciences in Colleges*, May 2013.
3. Robert Sanderson, Harihar Shankar, Scott Ainsworth, Frank McCown, and Sam Adams, Implementing Time Travel for the Web, *Code4Lib Journal*, Issue 13, Apr 2011.
4. Frank McCown, Catherine C. Marshall, and Michael L. Nelson, Why Websites Are Lost (and How They're Sometimes Found), *Communications of the ACM*, Nov 2009, Vol. 52, No. 11, p. 141-145.
5. Frank McCown, Hannes Kulovits, and Andreas Rauber, Report on the First International Workshop on Innovation in Digital Preservation (InDP 2009), *D-Lib Magazine*, July/August 2009, Vol. 15, No. 7/8.
6. Michael L. Nelson, Frank McCown, Joan A. Smith, and Martin Klein, Using the Web Infrastructure to Preserve Web Pages, *International Journal on Digital Libraries*, July 2007, Vol. 6, No. 4, p. 327-349.
7. Joan A. Smith, Frank McCown, and Michael L. Nelson, Observed Web Robot Behavior on Decaying Web Subsites, *D-Lib Magazine*, February 2006, Vol. 12, No. 2.
8. Frank McCown, Xiaoming Liu, Michael L. Nelson, and Mohammed Zubair, Search Engine Coverage of the OAI-PMH Corpus, *IEEE Internet Computing*, March/April 2006, Vol. 10, No. 2, pp. 66-73.

### Books and Chapters

1. Paul Winsberg and Frank McCown, *Databases*, zyBooks, (in progress).
2. Frank McCown, *Mobile App Development*, zyBooks, ISBN: 978-1-5418-9636-9, 2018.
3. Frank McCown, Roman Lysecky, Stefan Brandle, Jonathan Denning, and Jonathan Geisler, *Web Programming*, online book, zyBooks, ISBN: 978-1-5418-0195-0, 2016.
4. 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. *Content Engineering: Konzepte, Technologien und Anwendungen in der Medienproduktion*, ISBN: 978-3-940019-08-0, 2007, p. 71-87.
5. Frank McCown, Joan A. Smith, Michael L. Nelson, and Johan Bollen, Reconstructing Websites for the Lazy Webmaster. *Dynamics of Search Engines: An Introduction*, ISBN: 81-314-0679-2, 2007, p. 81-112.

## Popular Online Instructional Material

1. Frank McCown, *VB.NET and C# Comparison*, 2012-2016, [http://www.harding.edu/fmccown/vbnet\\_csharp\\_comparison.html](http://www.harding.edu/fmccown/vbnet_csharp_comparison.html)
2. Frank McCown, *Introduction to PHP*, 2012, [http://www.harding.edu/fmccown/PHP\\_Introduction.pdf](http://www.harding.edu/fmccown/PHP_Introduction.pdf)
3. Frank McCown, *Creating a Screen Saver with C#*, 2012, <http://www.harding.edu/fmccown/screensaver/screensaver.html>
4. Frank McCown, *Pong XNA Tutorial*, 2012, <http://www.harding.edu/fmccown/xna/pong/>
5. Frank McCown, *Producing Simple Graphs with R*, 2006, <http://www.harding.edu/fmccown/R/>
6. Frank McCown, *Remoting with GUIs*, The Code Project, May 2005.
7. Frank McCown and Tim Baird, *Perl Primer*, 2005, [http://www.harding.edu/fmccown/perl\\_primer.pdf](http://www.harding.edu/fmccown/perl_primer.pdf)

## Other

1. Frank McCown, *Lazy Preservation: Reconstructing Websites from the Web Infrastructure*, Dissertation, Old Dominion University, 2007.
2. Frank McCown, *Development of a Remote Object Webcam Controller (ROWC) with CORBA and JMF*, Masters Thesis, University of Arkansas at Little Rock, 2002.

## Presentations (Invited)

1. "Audacious Android Application Programming Workshop", Pre-conference workshop at CCSC-CP 2013, Kansas City, MO (4/12/13)
2. "Teaching an Introduction to Web Science Course to Computer Science Undergraduates", WS-Teach workshop at ACM Web Science 2012, Evanston, IL (5/10/12)
3. "Android Application Programming", Tutorial at CCSC-MS 2011, Conway, AR (4/1/11)
4. "Audacious Android Application Programming Workshop", Workshop at SIGCSE 2011, Dallas, TX (3/9/11)
5. "Teaching a Game Programming Class for the First Time", Tutorial at CCSC-MS 2010, Searcy, AR (3/27/10)
6. "Lazy Preservation, or Where Did My Website Go?", Computing Seminar, Harding University, Searcy, AR (11/29/07)
7. "Academic Research & the Internet Archive Web Archives. How to Mine Analyze Ten+ Years of Virtual Activity," with Kris Carpenter and Brad Tofel, Tutorial at JCDL 2007, Vancouver, B. C., Canada (6/19/07)
8. "Thinking Differently About Web Page Preservation," with Joan Smith and Michael L. Nelson, NDIIPP briefing at the Library of Congress, Washington, D.C. (6/29/06)
9. "Remoting with GUIs," WeProgram.NET meeting, Newport News, VA (10/11/05)
10. "Reconstructing Websites for the Lazy Webmaster," Computing Seminar, Harding University, Searcy, AR (9/29/05)
11. "Using CORBA for Surveillance and Medical Procedures," Johnson Space Center, Houston, TX (8/02)