

Mat Kelly

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RESEARCH INTERESTS

- Digital Preservation, Personal Web Archiving, Information Visualization.

Education

2012–2019	Doctor of Philosophy in Computer Science Old Dominion University, Norfolk, VA. Dissertation: Aggregating Private and Public Web Archives Using the Mementity Framework
2010–2012	Master of Science in Computer Science Old Dominion University, Norfolk, VA. Thesis: An Extensible Framework for Creating Personal Archives of Web Resources Requiring Authentication
2001–2006	Bachelor of Science in Computer Science University of Florida, Gainesville, FL.

Professional Experience

2019–present	DREXEL UNIVERSITY, COLLEGE OF COMPUTING & INFORMATICS Assistant Professor, Tenure Track Philadelphia, PA.
2015	OLD DOMINION UNIVERSITY Instructor, CS418 - Web Programming Norfolk, VA.
2011–2019	OLD DOMINION UNIVERSITY DEPARTMENT OF COMPUTER SCIENCE Graduate Research Assistant Norfolk, VA.
2011–2019	NASA LANGLEY RESEARCH CENTER Mobile Applications Developer Hampton, VA.
2009	BMW GROUP INFORMATION TECHNOLOGY RESEARCH CENTER Research Intern Greenville, SC.
2006–present	BLADE SOFTWARE / BLADE AGENCY Web Programmer Gainesville, FL.
2006–2007	SUMTOTAL SYSTEMS, INC. / MINDSOLVE TECHNOLOGIES, INC. Web Programmer Gainesville, FL.
2005–2006	CENTER FOR INSTRUCTIONAL TECHNOLOGY AND TRAINING AT UNIVERSITY OF FLORIDA Web Designer Gainesville, FL.

2003–2006	THE INDEPENDENT FLORIDA ALLIGATOR Managing Editor, New Media Gainesville, FL.
2004–2005	OFFICE OF STUDENT ACTIVITIES AT UNIVERSITY OF FLORIDA Web/Graphics Designer Gainesville, FL.

Publications

JOURNAL PUBLICATIONS

- [J4] Mat Kelly, Christopher B. Rauch, Jane Greenberg, Sam Grabus, Joan Boone, John Kunze, and Peter M. Logan, “Advancing ARKs in the Historical Ontology Space,” *Code4Lib Journal*, Issue 50, 2021.
- [J3] Michal Monselise, Jane Greenberg, Ou Stella Liang, Sonia Pascua, Heejun Kim, Mat Kelly, Joan P. Boone, and Christopher C. Yang, “Toward Best Practice for Extending the Consumer Health Vocabulary,” *Journal of Data and Information Science (JDIS)*, 6(1), 2021.
- [J2] Justin F. Brunelle, Mat Kelly, Michele C. Weigle, and Michael L. Nelson, “The Impact of JavaScript on Archivability,” *International Journal on Digital Libraries (IJDL)*, 17(2), pp. 95-117, 2015.
- [J1] Justin F. Brunelle, Mat Kelly, Hany SalahEldeen, Michele C. Weigle and Michael L. Nelson, “Not All Mementos Are Created Equal: Measuring the Impact of Missing Resources,” *International Journal on Digital Libraries (IJDL)*, 16(3), pp. 283-301, 2015.

CONFERENCE PUBLICATIONS (PEER-REVIEWED)

- [C18] Mat Kelly, Jane Greenberg, Christopher B. Rauch, Sam Grabus, Joan P. Boone, John A. Kunze, and Peter Melville Logan, “A Computational Approach to Historical Ontologies,” In *Proceedings of the 2020 IEEE International Conference on Big Data (Big Data)*, pp. 1878-1883, 2020.
- [C17] Mat Kelly, Michael L. Nelson, and Michele C. Weigle, “A Framework for Aggregating Private and Public Web Archives,” In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL)*, pp. 273-282, 2018.
- [C16] Mohamed Aturban, Mat Kelly, Sawood Alam, John A. Berlin, Michael L. Nelson, and Michele C. Weigle, “ArchiveNow: Simplified, Extensible, Multi-Archive Preservation,” In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL)*, pp. 321-322, 2018.
- [C15] Sawood Alam, Mat Kelly, Michele C. Weigle and Michael L. Nelson, “Unobtrusive and Extensible Archival Replay Banners Using Custom Elements,” In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL)*, pp. 319-320, 2018.
- [C14] Mat Kelly, Lulwah M. Alkwai, Sawood Alam, Michael L. Nelson, Michele C. Weigle, and Herbert Van de Sompel, “Impact of URI Canonicalization on Memento Count,” In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL)*, pp. 303-304, 2017.
- [C13] Sawood Alam, Mat Kelly, Michele C. Weigle, and Michael L. Nelson, “Client-side Reconstruction of Composite Mementos Using ServiceWorker,” In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL)*, pp. 237-240, 2017.
- [C12] John A. Berlin, Mat Kelly, Michele C. Weigle, and Michael L. Nelson, “WAIL: Collection-Based Personal Web Archiving,” In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL)*, pp. 340-341, 2017.
- [C11] Mat Kelly, Sawood Alam, Michael L. Nelson, and Michele C. Weigle, “InterPlanetary Wayback: Peer-To-Peer Permanence of Web Archives,” In *Proceedings of the International Conference on Theory and Practice of Digital Libraries (TPDL)*, pp. 411-416, 2016.
- [C10] Sawood Alam, Mat Kelly, and Michael L. Nelson, “InterPlanetary Wayback: The Permanent Web Archive,” In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL)*, pp. 273-274, 2016.

- [C9] Wesley Jordan, Mat Kelly, Justin F. Brunelle, Laura Vobrak, Michele C. Weigle, and Michael L. Nelson, "Mobile Mink: Merging Mobile and Desktop Archived Webs," In Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL), pp. 243-244, 2015.
- [C8] Michael Ruffing, Yangyang He, Mat Kelly, Jason O. Hallstrom, Stephan Olariu, and Michele C. Weigle. "A Retasking Framework For Wireless Sensor Networks," In Proceedings of the IEEE Military Communications Conference (MILCOM), pp. 1066-1071, 2014.
- [C7] Justin F. Brunelle, Mat Kelly, Hany SalahEldeen, Michele C. Weigle, and Michael L. Nelson, "Not All Mementos Are Created Equal: Measuring The Impact Of Missing Resources," In Proceedings of the IEEE/ACM Joint Conference on Digital Libraries (JCDL), pp. 321-330, 2014.
- [C6] Mat Kelly, Michael L. Nelson, and Michele C. Weigle, "The Archival Acid Test: Evaluating Archive Performance on Advanced HTML and JavaScript," In Proceedings of the IEEE/ACM Joint Conference on Digital Libraries (JCDL), pp. 25-28, 2014.
- [C5] Mat Kelly, Michael L. Nelson, and Michele C. Weigle, "Mink: Integrating the Live and Archived Web Viewing Experience Using Web Browsers and Memento," In Proceedings of the IEEE/ACM Joint Conference on Digital Libraries (JCDL), pp. 469-470, 2014.
- [C4] Mat Kelly, Michael L. Nelson, and Michele C. Weigle. "Graph-Based Navigation of a Box Office Prediction System," In Proceedings of the IEEE VIS 2013, 2013.
- [C3] Mat Kelly, Justin F. Brunelle, Michele C. Weigle, and Michael L. Nelson. "On the Change in Archivability of Websites Over Time," In Proceedings of the International Conference on Theory and Practice of Digital Libraries (TPDL), pp. 35-47, 2013.
- [C2] Mat Kelly and Michele C. Weigle, "WARCreate - Create Wayback-Consumable WARC Files from Any Webpage," In Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL), pp. 437-438, 2012.
- [C1] Thad Chee, Matthew Kelly, Louis Nguyen, Patrick Minnis, Rabindra Palikonda, Douglas A. Spagengberg, J. Kirk Ayers. Access to Real-time and Historic Satellite Products from a Mobile Application. Poster Presented at: American Geophysical Union Fall Meeting, 2011.

CONFERENCE PRESENTATIONS

- [P28] Scott McClellan, Mat Kelly, and Jane Greenberg, "Modeling Ephraim Chambers' Knowledge Structure From a Naïve Standpoint," Presented at The 8th North American Symposium on Knowledge Organization (NASKO) 2021, Online, 2021.
- [P27] Mat Kelly, Christopher B. Rauch, Jane Greenberg, John Kunze, Sam Grabus, Joan Boone, John Kunze, and Peter M. Logan, "Archival Resource Keys for Collaborative Historical Ontology Publication," Presented at the International Conference on ICT enhanced Social Sciences and Humanities (ICTeSSH) 2021, Online, 2021.
- [P26] Mat Kelly, "WASAPIfying Private Web Archiving Tools for Persistence and Collaboration," International Internet Preservation Consortium (IIPC) Web Archiving Conference (WAC) 2021, 2021.
- [P25] Mat Kelly, Jane Greenberg, Christopher B. Rauch, Joan P. Boone, John Kunze, and Peter Logan, "Of ARKs and Ontologies," Presented at PIDapalooza 2021, Online, 2021.
- [P24] Hyung Wook Choi, Rose DiMaria-Ghalili, Mat Kelly, Alex Poole, Erjia Yan, and Jina Huh-Yoo, "Older Adults and Technology Use: A Systematic Literature Review," Symposium presentation at the Gerontological Society of America 2020 Annual Scientific Meeting, Online Meeting, 2020.
- [P23] Abigail Mabe, Dhruv Patel, Maheedhar Gunnam, Surbhi Shankar, Mat Kelly, Sawood Alam, Michael L. Nelson, and Michele C. Weigle, "TMVis: Visualizing Webpage Changes Over Time," Presented at the Web Archiving and Digital Libraries Workshop (WADL), 2020.
- [P22] Mat Kelly, "Weaving in the Loose Ends of Novel Web Archiving Approaches," Presented at Save All the Internet: Web Archiving Tools and Tips, 2020.

- [P21] Sawood Alam, Mat Kelly, Michele C. Weigle, and Michael L. Nelson, "InterPlanetary Wayback: The Next Step Towards Decentralized Web Archiving," Presented at the Decentralized Web Summit, 2018.
- [P20] Mat Kelly, Sawood Alam, Michael L. Nelson, and Michele C. Weigle, "Client-Assisted Memento Aggregation Using the Prefer Header," Presented at the Web Archiving and Digital Libraries Workshop (WADL), 2018.
- [P19] Sawood Alam, Mat Kelly, Michele C. Weigle, and Michael L. Nelson, "A Survey of Archival Replay Banners," Presented at the Web Archiving and Digital Libraries Workshop (WADL), 2018.
- [P18] Mat Kelly, Lulwah M. Alkwai, Sawood Alam, Michael L. Nelson, Michele C. Weigle, and Herbert Van de Sompel, "Impact of URI Canonicalization on Memento Count," Presented at the Web Archiving and Digital Libraries Workshop (WADL), 2017.
- [P17] Sawood Alam, Mat Kelly, Michele C. Weigle, and Michael L. Nelson, "Avoiding Zombies in Archival Replay Using ServiceWorker," Presented at the Web Archiving and Digital Libraries Workshop (WADL), 2017.
- [P16] Michele C. Weigle, Michael L. Nelson, Mat Kelly, and John Berlin, "Archive What I See Now - Personal Web Archiving with WARCS," Presented at the International Internet Preservation Consortium (IIPC) Web Archiving Conference (WAC), 2017.
- [P15] Mat Kelly and David Dias, "A Collaborative, Secure, and Private InterPlanetary Wayback Web Archiving System using IPFS," Presented at the International Internet Preservation Consortium (IIPC) Web Archiving Conference (WAC), 2017.
- [P14] Mat Kelly, "Tools for the Personal Web Archivist: WARCreate, WAIL, Mink, InterPlanetary Waybacks," Presented at Archives Unleashed 4.0: Web Archive Datathon, 2017.
- [P13] Mat Kelly, "Exploring Aggregation of Personal, Private, and Institutional Web Archives," Presented at Archives Unleashed 2.0: Web Archive Datathon, 2016.
- [P12] Mat Kelly, "InterPlanetary Wayback: The Permanent Web Archive," Presented at the Web Archiving and Digital Libraries Workshop (WADL), 2016.
- [P11] Mat Kelly, "A Framework for Aggregating Private and Public Web Archives," at the ACM/IEEE Joint Conference on Digital Libraries (JCDL), Doctoral Consortium, 2015.
- [P10] Mat Kelly, Michael L. Nelson, and Michele C. Weigle, "Visualizing Digital Collections of Web Archives," Web Archiving Collaboration: New Tools and Models Workshop, 2015.
- [P9] Mat Kelly, "Facilitation of the A Posteriori Replication of Web Published Satellite Imagery", Virginia Space Grant Consortium 2015 Student Research Conference, 2015.
- [P8] Mat Kelly, Michael L. Nelson, and Michele C. Weigle. "Efficient Thumbnail Summarization for Web Archives," Digital Preservation 2014, 2014.
- [P7] Mat Kelly. "Archive What I See Now," Archive-It Partner Meeting, 2013.
- [P6] Michael L. Nelson, Scott G. Ainsworth, Justin F. Brunelle, Mat Kelly, Hany SalahEldeen and Michele C. Weigle. "Who Will Archive the Archives? Thoughts About the Future of Web Archiving," Wolfram Data Summit 2013, 2013.
- [P5] Mat Kelly, Michael L. Nelson and Michele C. Weigle. "WARCreate and WAIL: WARC, Wayback and Heritrix Made Easy," Digital Preservation 2013, Workshops and Sessions: Web Archiving, 2013.
- [P4] Mat Kelly, Michele C. Weigle and Michael L. Nelson. "Making Enterprise-Level Archive Tools Accessible for Personal Web Archiving," Personal Digital Archiving 2013, Poster Session, 2013.
- [P3] Mat Kelly, Michele C. Weigle and Michael L. Nelson. "WARCreate - Create Wayback-Consumable WARC Files from Any Webpage," Digital Preservation 2012, Tools Demo Session: Web Archiving, 2012.

- [P2] Mat Kelly, Syed R. Rizvi, Liang Chen, Chinmay Lokesh, Stephan Olariu and Michele C. Weigle. ALERT: A Next-generation Emergency Response System for First Responders using Retasking of Wireless Sensor Networks, 13th Annual Tidewater Student Research Poster Session, 2011.
- [P1] Mat Kelly, Michele C. Weigle and Michael L. Nelson. Archiving Your Facebook Pages Using Archive Facebook. NDIIPP/NDSA Partners Meeting Special Interest Session: Web Archiving, 2011.

ARTICLES

- [A5] Sawood Alam, Mat Kelly, Michele C. Weigle, and Michael L. Nelson, "InterPlanetary Wayback: The Permanent Web Archive," Bulletin of the IEEE Technical Committee on Digital Libraries (TCDL), 13(1), 2017.
- [A4] Mat Kelly, Lulwah M. Alkwai, Michael L. Nelson, Michele C. Weigle, and Herbert Van de Sompel, "Impact of URI Canonicalization on Memento Count," Technical Report arXiv:1703.03302, 2017.
- [A3] Mat Kelly, "A Framework for Aggregating Private and Public Web Archives," Bulletin of the IEEE Technical Committee on Digital Libraries (TCDL), 11(3), 2015.
- [A2] Mat Kelly, Justin F. Brunelle, Michele C. Weigle, and Michael L. Nelson. "A Method for Identifying Personalized Representations in the Archives," D-Lib Magazine, 19(11/12), 2013.
- [A1] David Helman, Matthew Kelly, Martin Guttman, Bill Carter, Enrique Castro-Leon, Thomas Kellerer, Dror Shenkar. "Preserving Performance While Saving Power Using Intel Intelligent Power Node Manager and Intel Data Center Manager", 2009.

Teaching

- [1] INFO202 - Data Curation, Spring 2021, Drexel University
- [2] INFO624 - Information Retrieval Systems, Winter 2021, Drexel University
- [3] INFO600 - Web Systems and Architecture, Fall 2020, Drexel University
- [4] INFO624 - Information Retrieval Systems, Summer 2020, Drexel University
- [5] INFO202 - Data Curation, Spring 2020, Drexel University
- [6] INFO600 - Web Systems and Architecture, Fall 2019, Drexel University
- [7] CS418 - Web Programming, Spring 2015, Old Dominion University

Sponsored Projects

2021-2024	Examining the effects of academic mobility on individual professors' research activity and institutional human capital at HBCUs Amount: \$396,691.00 Sponsor/Program: National Science Foundation, Science of Science: Discovery, Communication, and Impact Role: Co-PI
2021	Advancing Access Regulation to Private Content Preserved from the Web Amount: \$7,000.00 Sponsor/Program: Drexel University Office of Research, 2021 Faculty Summer Research Awards for Tenure/Tenure-Track Faculty Role: PI
2021-2023	LIS Education And Data Science-Integrated Network Group (LEADING) Amount: \$887,154.00 Sponsor/Program: Institute of Museum and Library Services, Laura Bush 21st Century Librarian Program Role: Senior Personnel
2020-2021	Mailbag: A Stable Package for Email in Multiple Formats

Amount: \$63,890.00

Sponsor/Program: Andrew W. Mellon Foundation, University of Illinois program, Email Archives: Building Capacity and Community

Role: Advisory Board

Awards and Recognition

[A10] Best Paper Award Finalist, ACM/IEEE JCDL 2018.

[A9] Best Poster Award, ACM/IEEE JCDL 2018.

[A8] Best Poster Award, ACM/IEEE JCDL 2017.

[A7] Donald W. Reynolds Journalism Institute Scholar, 2016.

[A6] Best Poster Award, ACM/IEEE JCDL 2015.

[A5] Best Student Paper Award, ACM/IEEE JCDL 2014.

[A4] NASA Virginia Space Grant Consortium Graduate Fellow, 2014.

[A3] Acknowledged Contributor, RFC7089: HTTP Framework for Time-Based Access to Resource States – Memento, 2013.

[A2] Future Steward Innovation Award Recipient, National Digital Stewardship Alliance (NDSA) / Library of Congress, 2012.

[A1] Featured Graduate Student, Old Dominion University Department of Computer Science, 2012.

Software

Through my academic career I have both created and publicly released open source software:

- InterPlanetary Wayback (ipwb) (382 stars on GitHub)
Archival index and replay suite to integrate WARC files and the InterPlanetary File System (ipfs)
<https://github.com/oduwsdl/ipwb>
- Web Archiving Integration Layer (WAIL) (252 stars on GitHub)
Desktop application to allow non-technical users to easily leverage institutional grade web archiving tools
<https://github.com/machawk1/wail>
- WARCreate (150 stars on GitHub)
Google Chrome extension to allow users to create web archive (WARC) files from any web page.
<https://github.com/machawk1/warcreate>
- Mink (30 stars on GitHub)
Google Chrome extension to integrate the live and archive web while a user browses and encourage one-click submission to web archives.
<https://github.com/machawk1/mink>

Service

- Reviewer, Journal of Computer Security, 2021
- Managing Editor, International Journal on Digital Libraries, 2021
- Organizing Committee, Virtual Meeting Support Chair, Joint Conference on Digital Libraries, 2021
- Reviewer, European Conference on Information Retrieval, 2020.

- Reviewer, International Journal on Digital Libraries, 2018.
- Organizing Committee, Publicity Chair, Joint Conference on Digital Libraries, 2018-2019.
- Reviewer, Joint Conference on Digital Libraries, 2012, 2018-2021.
- Reviewer, Access 2017 Conference, 2017.