# Mat Kelly

Drexel University
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Research Interests

- Digital Preservation, Personal Web Archiving, Information Retrieval, Metadata, Semantics, Persistent Identifiers, Distributed Systems, Information Visualization.

## Education

2012–2019 Doctor of Philosophy (PhD) in Computer Science
Old Dominion University, Norfolk, VA.
Dissertation: Aggregating Private and Public Web Archives Using the Memento Framework

2010–2012 Master of Science (MS) 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 (BS) in Computer Science
University of Florida, Gainesville, FL.

## Professional Experience

2019–present Drexel University, College of Engineering and Computing
Assistant Professor, Department of Information Science, Tenure-Track
Philadelphia, PA.

2015 Old Dominion University
Instructor, CS418 - Web Programming
Norfolk, VA.

2011–2019 Old Dominion University, College of Sciences
Graduate Research Assistant, Department of Computer Science
Norfolk, VA.

2011–2019 NASA Langley Research Center via Science Systems and Applications (SSAI), Inc.
Mobile Applications Developer
Hampton, VA.

2009 BMW Group Information Technology Research Center (ITRC)
Research Intern
Greenville, SC.

2006–2019 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 (CITT) 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 (OSA) at University of Florida
Web/Graphics Designer
Gainesville, FL.

## Publications

### Journal Publications

[J13] Scott McClellan, Addison Ireland, Colton Gerber, Joel Pepper, Christopher B. Rauch, Mat Kelly, John Kunze, and Jane Greenberg, "MatSci-YAMZ: Integrating Human and Artificial Intelligence Vocabulary," Data Science Journal, 25:23, pp. 1–11, 2026.

[J12] Robert T. Palmer, Erjia Yan, Mat Kelly, and Nicole Johnson, "A Deeper Look Into the Experiences of Faculty at Historically Black Colleges and Universities: Understanding Factors Germane to Their Retention and Attrition," Journal of Diversity in Higher Education, In Press, 2026.

[J11] Travis Reid, Alex H. Poole, Hyung Wook Choi, Christopher Rauch, Mat Kelly, Michael L. Nelson, and Michele C. Weigle, "Problems With Archiving and Replaying Current Web Advertisements," Journal of the Association for Information Science and Technology (JASIST), 76(13), pp. 1803–1830, 2025.

[J10] Hyung Wook Choi, Jonathan Wheeler, Weimao Ke, Lei Wang, Jane Greenberg, and Mat Kelly, "Liberation of LMS-siloed Instructional Data," Code4Lib Journal, Issue 61, 2025.

[J9] Erjia Yan, Robert T. Palmer, Jiangen He, Chaoqun Ni, and Mat Kelly, "Diversity of HBCUs' Institutional Human Capital: A Cross-Discipline, Longitudinal Analysis of Faculty Hiring and Placement at HBCUs," Innovative Higher Education, 50, pp. 1021–1039, 2025.

[J8] Deanna Zarrillo, Mat Kelly, Erjia Yan, and Chaoqun Ni, "Web Archives for Data Collection: An Ethics Case Study," Accountability in Research: Ethics, Integrity and Policy, 32(8), pp. 1-18, 2024.

[J7] Mat Kelly, "Exploiting the Untapped Functional Potential of Memento Aggregators Beyond Aggregation," International Journal on Digital Libraries (IJDL), 25(1), pp. 93–104, 2024.

[J6] John Berlin, Mat Kelly, Michael L. Nelson, and Michele C. Weigle, "To Re-experience the Web: A Framework for the Transformation and Replay of Archived Web Pages," ACM Transactions on the Web (TWEB), 17(4), pp. 1–49, 2023.

[J5] Jane Greenberg, Scott McClellan, Christopher Rauch, Xintong Zhao, Mat Kelly, Yuan An, John Kunze, Rachel Orenstein, Claire Porter, Vanessa Meschke, and Eric Toberer, "Building Community Consensus for Scientific Metadata with YAMZ," Data Intelligence, 5(1), pp. 242-260, 2023.

[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, "An Automatic Approach to Extending the Consumer Health Vocabulary," Journal of Data and Information Science (JDIS), 6(1), 2021.

DREXEL ↑
PRE-DREXEL ↓

[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)

[C34] Mat Kelly and Brenda Reyes Ayala, "Web Archiving and Digital Libraries (WADL) Workshop 2026," To appear in the Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL), 2026.

[C33] Hyung Wook Choi and Mat Kelly, "From Detection to Documentation: A Provenance-Aware Framework for Semantic Evolution," To appear in the Proceedings of the International Conference on Dublin Core and Metadata Applications (DCMI), 2026.

[C32] Jane Greenberg, Scott McClellan, Addy Ireland, Colton Gerber, Christopher B. Rauch, Mat Kelly, John Kunze, Yuan An, and Eric Toberer, "Human-in-the-Loop and AI: Crowdsourcing Metadata Vocabulary for Materials Science," To appear in the Proceedings of the 19th International Conference on Metadata and Semantics Research (MTSR), 2025.

[C31] Christopher Rauch, Hyung Wook Choi, and Mat Kelly, "OntExtract: PROV-O Provenance Tracking for Document Analysis Workflows," In Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL), pp. 249–252, 2025.

[C30] Patrick Le, Quang Bui, Alexander Grigorian, Alexey Kuraev, Thiyazan Salman, Tu Nguyen, Mat Kelly, and Sawood Alam, "Linking Policies for the Permanent Web," In Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL), pp. 217–226, 2025.

[C29] Mat Kelly and Brenda Reyes Ayala, "Web Archiving and Digital Libraries (WADL) Workshop 2025," In Adjunct Proceedings of the 36th ACM Conference on Hypertext and Social Media (HT Adjunct '25), pp. 51–53, 2025.

[C28] Christopher B. Rauch, Hyung Wook Choi, and Mat Kelly, "Beyond the 'Idols of the Marketplace': Managing Semantic Change in Research," In Proceedings from the 2024 Annual Meeting of the Document Academy, Vol. 11, Issue 2, Article 3, 2024.

[C27] Christopher Rauch, Alex H. Poole, Travis Reid, Michele C. Weigle, Michael L. Nelson, Faryaneh Poursardar, and Mat Kelly, "Archiving Digital Marketing: Examining Preservation of Dynamic Content on the Web Through the Lens of Online Advertisements," In Proceedings of the 20th International Conference on Digital Preservation (iPRES), 9 pp., 2024.

[C26] Erjia Yan, Mat Kelly, Deanna Zarrillo, Jiangen He, Chaoqun Ni, and Robert Palmer, "Examining the academic mobility at Historically Black Colleges and Universities in the U.S.," In Proceedings of the 19th International Conference of the International Society for Scientometrics and Informetrics (ISSI), pp. 507–513, 2023.

[C25] Mat Kelly, Brenda Reyes Ayala, Zhiwu Xie, and Edward A. Fox, "Web Archiving and Digital Libraries (WADL) 2023," In Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL), pp. 314–315, 2023.

[C24] Mat Kelly, "Aggregator Reuse and Extension for Richer Web Archive Interaction," In Proceedings of the 24th International Conference on Asia-Pacific Digital Libraries (ICADL), pp. 313–328, 2022.

[C23] Deanna Zarrillo, Mat Kelly, Christopher Jackson, and Erjia Yan, "Collecting Diachronic Affiliation Data for Faculty at HBCUs Using Memento," In Proceedings of the Association for Information Science and Technology (ASIS&T) Annual Meeting, pp. 528–532, 2022. Short Paper.

[C22] Hyung Wook Choi and Mat Kelly, "Examining Existing Approaches Toward Semantic Disambiguation," In Proceedings of the Seventeenth International Society for Knowledge Organization (ISKO) Conference 2022, pp. 349–352, 2022.

[C21] Martin Klein, Mat Kelly, Zhiwu Xie, and Edward A. Fox, "Web Archiving and Digital Libraries (WADL) 2022," In Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL), pp. 1–2, 2022.

[C20] Christopher B. Rauch, Mat Kelly, John A. Kunze, and Jane Greenberg, "FAIR Metadata: A Community-driven Vocabulary Application," In Metadata and Semantic Research: 15th International Conference, MTSR 2021, pp. 187–198, 2022.

[C19] Jane Greenberg, Christopher B. Rauch, and Mat Kelly, "Project Pipeline: Preservation, Persistence, and Performance," In Proceedings of the International Conference on Digital Preservation (iPRES), 2021.

[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.

DREXEL ↑

PRE-DREXEL ↓

[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. Short Paper. Acceptance Rate: 37% (35/93)

[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. Acceptance Rate: 28% (30/107)

[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. Short Paper. Acceptance Rate: 32% (24/75)

[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. Acceptance Rate: 24% (24/100)

[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. Spangenberg, and 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

[P38] Addy Ireland, Scott McClellan, John Kunze, Christopher Rauch, Joel Pepper, Colton Gerber, Mat Kelly, and Jane Greenberg, "MatSci YAMZ: Integrating AI into Metadata Dictionaries," Poster presented at the ID4-Affiliated Summer Research Experience Symposium, Northwestern University, 2025.

[P37] Mat Kelly, "What You See No One Saw," Archive-It Partner Meeting, 2025.

[P36] Mat Kelly, Alexander H. Poole, Michele C. Weigle, Michael L. Nelson, Travis Reid, Christopher Rauch, and Hyung Wook Choi, "What You See No One Saw," Presented at the International Internet Preservation Consortium (IIPC) Web Archiving Conference (WAC), 2025.

[P35] John Berlin, Mat Kelly, Michael L. Nelson, and Michele C. Weigle, "To Re-experience the Web: A Framework for the Transformation and Replay of Archived Web Pages," Presented at the ACM International Conference on Information and Knowledge Management (CIKM), 2024.

[P34] Hyung Wook Choi and Mat Kelly, "Documenting Semantic Shifts Across Domains with Version Control," Presented at the Annual Meeting of the Document Academy (DOCAM), 2024.

[P33] Christopher Rauch, Mat Kelly, Alex H. Poole, Travis Reid, Faryaneh Poursardar, Michael L. Nelson, and Michele C. Weigle, "Contextual Archiving of Web Page Advertisements Using Persona-Based Tools," Presented at the Society of American Archivists (SAA) Research Forum, 2024.

[P32] Christopher Rauch, Mat Kelly, Alexander H. Poole, Travis Reid, Michele C. Weigle, and Michael L. Nelson, "Saving Ads: Assessing and Improving Web Archives' Holdings of Online Advertisements," Presented at the International Internet Preservation Consortium (IIPC) Web Archiving Conference (WAC) 2024.

[P31] Hyung Wook Choi and Mat Kelly, "On Identifying Points of Semantic Shift Across Domains," Presented at the 17th International Conference on Metadata and Semantic Research (MTSR 2023), Poster Session, 2023.

[P30] Mat Kelly, Deanna Zarrillo, and Erjia Yan, "Using Web Archives to Model Academic Migration and Identify Brain Drain," Presented at the International Internet Preservation Consortium (IIPC) Web Archiving Conference (WAC), 2023.

[P29] Mat Kelly, Deanna Zarrillo, Christopher Jackson, and Erjia Yan, "First steps in Identifying Academic Migration using Memento and Quasi-Canonicalization," Presented at the Web Archiving and Digital Libraries Workshop (WADL), 2022.

[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, John Kunze, Sam Grabus, Joan Boone, Peter M. Logan, and Jane Greenberg, "Archival Resource Keys for Collaborative Historical Ontology Publication," In Proceedings of 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.

[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 Ann DiMaria-Ghalili, Mat Kelly, Alexander 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.

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[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

[A7] Travis Reid, Alex H. Poole, Hyung Wook Choi, Christopher Rauch, Mat Kelly, Michael L. Nelson, and Michele C. Weigle, "Archiving and Replaying Current Web Advertisements: Challenges and Opportunities," Technical Report arXiv:2502.01525, 2025.

[A6] Deanna Zarrillo, Erjia Yan, Mat Kelly, Jiangen He, Chaoqun Ni, and Robert Palmer, "Longitudinal Academic Mobility Patterns at Howard University," Preprint, 2024.

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[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 Guttmann, Bill Carter, Enrique Castro-Leon, Thomas Kellerer, and Dror Shenkar, "Preserving Performance While Saving Power Using Intel Intelligent Power Node Manager and Intel Data Center Manager", 2009.

## Teaching

For Drexel University unless noted otherwise.

[20] INFO202 - Data Curation, Spring 2026

[19] INFO624 - Intelligent Systems and Language Models, Winter 2026

[18] INFO152 - Web Systems and Services II, Winter 2026

[17] INFO202 - Data Curation, Spring 2025

[16] INFO655 - Intro to Web Programming, Winter 2025

[15] INFO101 - Introduction to Computing and Security Technology, Fall 2024

[14] INFO202 - Data Curation, Spring 2024

[13] INFO655 - Intro to Web Programming, Winter 2024

[12] INFO624 - Information Retrieval Systems, Fall 2023

[11] INFO202 - Data Curation, Spring 2023

[10] INFO102 - Introduction to Information Systems, Winter 2023

[9] INFO600 - Web Systems and Architecture, Fall 2022

[8] INFO624 - Information Retrieval Systems, Winter 2022

[7] INFO202 - Data Curation, Spring 2021

[6] INFO624 - Information Retrieval Systems, Winter 2021

[5] INFO600 - Web Systems and Architecture, Fall 2020

[4] INFO624 - Information Retrieval Systems, Summer 2020

[3] INFO202 - Data Curation, Spring 2020

[2] INFO600 - Web Systems and Architecture, Fall 2019

[1] CS418 - Web Programming, Spring 2015, Old Dominion University

## Student Advising, Supervision, and Committee Service

### Doctoral Graduates—Primary Advisor

Christopher Rauch, PhD, Drexel University, 2026 — Primary Advisor 2020–2026

Hyung Wook Choi, PhD, Drexel University, 2026 — Primary Advisor 2022–2026
Previously MS Student Project Supervisor, June 2021–March 2022.

### Doctoral Dissertation and Candidacy Committees

Current

Travis Reid, PhD, Old Dominion University — Dissertation Committee Member 2025–present
Danielle Boccelli, PhD, Drexel University — Candidacy Committee Member 2024–present
Deanna Zarrillo, PhD, Drexel University — Dissertation Committee Member 2023–present

Completed

Prateek Goel, PhD, Drexel University — Dissertation Committee Member 2025–2026
Sonia Pascua, PhD, Drexel University — Dissertation Committee Member 2023–2025
Hanieh Razzaghi, PhD, Drexel University — Dissertation Committee Member 2021–2023
Samantha Grabus, PhD, Drexel University — Dissertation Committee Member 2021–2023

### Master's Student Research and Independent Studies

Ananya Mhetras, MS, Drexel University — Independent Study Advisor January–March 2026
Modern Web Programming for VR

Vanshika Mohan Bongade, MS, Drexel University — Student Project and Co-op Supervisor March–December 2025
Mink as a Client-Side Aggregator

Hitendrasinh Jashvantsinh Chavda, MS, Drexel University — Student Project and Co-op Advisor March–December 2025
Distributed Indexing in InterPlanetary Wayback

Scott McClellan, MS, Drexel University — Independent Study Supervisor March–June 2020
Enterprise Content Management, the Knowledge Graph & Everything Else

### Undergraduate Research and Senior Projects

Zarin Tasnim, BS, Drexel University — Undergraduate Student Project Supervisor January–March 2026
Forks, Merges, and Meanings: Visualizing Language Evolution

Muhammad Moosa Hassan, BS, Drexel University — Undergraduate Student Project Supervisor September–December 2025
Exploring Secure Exchange Across Personal, Private, and Public Data

Haard Doshi, BS, Drexel University — STAR Program Mentor June–September 2025
Yet Another Metadata Zoo (YAMZ)

Addy Ireland — NSF Research Experiences for Undergraduates (REU) Mentor June–September 2025
Developing YAMZ (Yet Another Metadata Zoo) for Materials Science Terminology

Patrick Le, Benji Biu, Alexander Grigorian, Thiyazan Qaissi, and Alexey Kuraev, BS, Drexel University — Senior Project Group Supervisor September 2024–June 2025
IPARO Evaluation and Implementation

John Nguyen, BS, Drexel University — Student Project Supervisor June 2024–September 2025
IPARO Evaluation Framework

Robert Sammarco, BS, Drexel University — NSF Research Experiences for Undergraduates (REU) Mentor June–September 2024
Developing YAMZ (Yet Another Metadata Zoo) for Materials Science Terminology

## Sponsored Projects

External Funding Sources

- External award obligations associated with PI roles: $558,406
- External award obligations associated with Co-PI roles: $396,691

2026–2028 CAMP-250: Computational Archival Science and Metadata in Practice for America 250—A National Forum on Infrastructure, Methods, and Workforce Development for the Nation's Digital Record
Amount: $166,334
Sponsor/Program: Institute of Museum and Library Services, Laura Bush 21st Century Librarian Program
Role: Senior Personnel

2024–2027 Preserving Personalized Advertisements for More Accurate Web Archives
Amount: $398,927
Sponsor/Program: Institute of Museum and Library Services, National Leadership Grants
Role: PI

2022–2025 Saving Ads: Assessing and Improving Web Archives' Holdings of Online Advertisements
Amount: $149,479
Sponsor/Program: Institute of Museum and Library Services, National Leadership Grants
Role: PI

2022 Venom: Archiving the Dark Web
Amount: $10,000
Sponsor: MITRE Corporation
Role: PI

2021–2024 Examining the effects of academic mobility on individual professors' research activity and institutional human capital at HBCUs
Amount: $396,691
Sponsor/Program: National Science Foundation, Science of Science: Discovery, Communication, and Impact
Role: Co-PI

2021–2022 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

2020–2023 LIS Education And Data Science-Integrated Network Group (LEADING)
Amount: $1,308,400.00 ($887,154.00 Drexel portion)
Sponsor/Program: Institute of Museum and Library Services, Laura Bush 21st Century Librarian Program
Role: Senior Personnel

2021–2022 Mailbag: A Stable Package for Email with Multiple Masters
Amount: $63,890
Sponsor/Program: Andrew W. Mellon Foundation, University of Illinois program, Email Archives: Building Capacity and Community
Role: Senior Personnel (Advisory Board Member)

## 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.

## External Professional Service

- Program Committee (Referee), iConference, 2027, 2026, 2025, 2024, 2023, 2022.
- Program Committee (Referee), ACM/IEEE Joint Conference on Digital Libraries, 2026, 2024, 2022, 2021, 2020, 2019, 2018, 2012.
- Organizing Committee, Website Chair, ACM/IEEE Joint Conference on Digital Libraries, 2026.
- Reviewer, Journal of the Association for Information Science and Technology (JASIST), February 2026.
- Reviewer, Association for Information Science and Technology (ASIS&T), 2026.
- Program Committee (Referee), International Conference on Theory and Practice of Digital Libraries (TPDL), 2026, 2025.
- Program Committee (Referee), ACM Conference on Web Science (WebSci), 2026, 2025, 2024, 2023, 2022.
- Organizing Committee, General Chair, ACM/IEEE Joint Conference on Digital Libraries, 2025.
- Reviewer, Big Data & Society, January 2025.
- Organizing Committee, Web Presence, ACM/IEEE Joint Conference on Digital Libraries, 2024.
- Referee, ACM International Conference on Information and Knowledge Management (CIKM), 2024.

- Organizing Committee, Publicity Chair, ACM Conference on Information and Knowledge Management (CIKM), 2023.
- Program Committee (Referee), International Conference on Asia-Pacific Digital Libraries (ICADL), 2023.
- Reviewer, SoftwareX, May 2023.
- Reviewer, Internet Histories, May 2023.
- Program Committee (Referee), International Conference on Digital Preservation, 2023.
- Funding Reviewer, the Dutch Research Council (NWO), 2023.
- Reviewer, Journal of the Association for Information Science and Technology (JASIST), November 2022.
- Conference Program Chair, ACM/IEEE Joint Conference on Digital Libraries, 2023.
- Senior Program Committee, ACM/IEEE Joint Conference on Digital Libraries, 2022.
- Conference Session Chair, ACM/IEEE Joint Conference on Digital Libraries, 2021.
- Reviewer, Journal of Computer Security, 2021.
- Managing Editor, International Journal on Digital Libraries, 2021–present.
- Reviewer, Journal of the Association for Information Science and Technology (JASIST), October 2021.
- Organizing Committee, Virtual Meeting Support Chair, ACM/IEEE Joint Conference on Digital Libraries, 2021.
- Program Committee (Referee), European Conference on Information Retrieval, 2020.
- Reviewer, International Journal on Digital Libraries, 2018.
- Organizing Committee, Publicity Chair, ACM/IEEE Joint Conference on Digital Libraries, 2018.
- Program Committee (Referee), Access 2017 Conference, 2017.

## University Service

- Appointed member, Drexel University Faculty Senate Ad Hoc Communications Committee; term begins Fall 2026.
- Drexel University New i-Program Working Group, 2025–present.
- Reviewer, Faculty Summer Research Awards, Drexel University Office of Faculty Affairs, 2024.
- Drexel University MSIS Curriculum Committee, 2022–2025.
- Archives Update Task Force (MSI LIS Working Group), 2021–2022.
- Drexel University Senate Student Life Committee (SCSL), 2021–2023.
- IS Tenure Track faculty Search Committee, 2020–2021.
- Drexel COVID Return to Campus Committee, 2020.

## Software

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

- InterPlanetary Wayback (ipwb) (655 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) (400 stars on GitHub)
  Desktop application to allow non-technical users to easily leverage institutional grade web archiving tools.
  https://github.com/machawk1/wail
- WARCreate (231 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 (58 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