Jaimie Murdock, Ph.D.

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EDUCATION

Doctor of Philosophy, Informatics and Cognitive Science   June 2019
Indiana University, Bloomington, IN
Dissertation: Topic Modeling the Reading and Writing Behavior of Information Foragers
Committee: Colin Allen (co-chair), Staša Milojević (co-chair), Michael Jones, Peter Todd
Concentration: Complex Networks and Systems

Bachelor of Science, Computer Science (with honors)   December 2010
Indiana University, Bloomington, IN
Concentrations: Artificial Intelligence and Programming Languages
Founder, Computer Science Club

Bachelor of Science, Cognitive Science   December 2010
Indiana University, Bloomington, IN
Co-chair, Midwest Undergratuate Cognitive Science Conference (MUCSC)
President, Student Organization for Cogntive Science (SOCS)

POSITIONS HELD

Sandia National Laboratory, Albuquerque, NM   October 2019 – present
Senior Member of Technical Staff   `https://ccr.sandia.gov/`

Cornell University, Ithaca, NY (remote)   January 2018 – October 2019
Web Applications Developer   `https://arXiv.org/`

Internet Archive, San Francisco, CA (remote)   March – December 2017
Web Crawl Engineer   `https://archive.org/`

Indiana University, Bloomington, IN   August 2011 – August 2013
Visiting Research Associate   `https://inphoproject.org/`

PUBLICATIONS

Journal Articles

[1]   Colin Allen, Hongliang Luo, Jaimie Murdock, Jianghuai Pu, Xiaohong Wang, Yanjie Zhai, and Zhao Kun. "Topic Modeling the Hàn diǎn Ancient Classics (汉典古籍)". *Journal of Cultural Analytics* (2017). DOI: 10.22148/16.016. arXiv: 1702.00860.

[2]   Jaimie Murdock, Colin Allen, Katy Börner, Robert Light, Simon McAlister, Robert Rose, Doori Rose, Jun Otsuka, David Bourget, John Lawrence, Andrew Ravenscroft, and Chris Reed. "Multi-level Computational Methods for Interdisciplinary Research in the HathiTrust Digital Library". *PLOS ONE* 12.9 (2017), e0184188. DOI: 10.1371/journal.pone.0184188. arXiv: 1702.01090.

[3]   Jaimie Murdock, Colin Allen, and Simon DeDeo. "Exploration and Exploitation of Victorian Science in Darwin's Reading Notebooks". *Cognition* 159 (2017), pp. 117–126. DOI: 10.1016/j.cognition.2016.11.012. arXiv: 1509.07175.

[4]   Jared Lorince, Sam Zorowitz, Jaimie Murdock, and Peter Todd. "Wisdom of the Few? "Supertaggers" in Collaborative Tagging Systems". *Journal of Web Science* 1.1 (2015). DOI: 10.1561/106.00000002. arXiv: 1502.02777.

Book Chapters

[6]   Jaimie Murdock, Cameron Buckner, and Colin Allen. "Evaluating Dynamic Ontologies". In: *Knowledge Discovery, Knowledge Engineering, and Knowledge Management: Second International Joint Conference, IC3K 2010, Valencia, Spain, October 25-28, 2010, Revised Selected Papers.* Ed. by Ana Fred, Jan L. G. Dietz, Kecheng Liu, and Joaquim Filipe. Vol. 272. Communications in Computer and Information Science. Springer-Verlag, 2013, pp. 258–275. DOI: 10.1007/978-3-642-29764-9_18.

[7]   Colin Allen and Jaimie Murdock. "LDA Topic Modeling: Contexts for the History & Philosophy of Science". In: *The Dynamics of Science: Computational Frontiers in History and Philosophy of Science.* Ed. by Grant Ramsay and Andreas De Block. Preprint: http://philsci-archive.pitt.edu/17261/. University of Pittsburgh Press, accepted.

Conference Papers

[8]   Jaimie Murdock, Colin Allen, and Simon DeDeo. "Quantitative and Qualitative Approaches to the Development of Darwin's Origin of Species". *Current Research in Digital History* 1 (2018). DOI: 10.31835/crdh.2018.14. arXiv: 1802.09944.

[9]   Jaimie Murdock, Jacob Jett, Tim Cole, Yu Ma, J. Stephen Downie, and Beth Plale. "Towards Publishing Secure Capsule-Based Analysis". *2017 ACM/IEEE Joint Conference on Digital Libraries (JCDL).* Toronto, Ontario, Canada, June 2017. DOI: 10.1109/JCDL.2017.7991585.

[10] Jared Lorince, Sam Zorowitz, Jaimie Murdock, and Peter Todd. ""Supertagger" behavior in building folksonomies". *WebSci '14: Proceedings of the 2014 ACM Conference on Web Science.* Bloomington, Indiana, USA, June 2014, pp. 129–138. DOI: 10.1145/2615569.2615686.

[11] Jaimie Murdock, Cameron Buckner, and Colin Allen. "Containing the Semantic Explosion". *Proceedings of the WWW2012 conference workshop PhiloWeb 2012: "Web and Philosophy, Why and What For?"* Ed. by Alexandre Monnin, Harry Halpin, and Leslie Carr. Vol. 859. CEUR Workshop Proceedings. Apr. 2012.

[12] Jaimie Murdock and Colin Allen. "InPhO for All: Why APIs Matter". *Journal of the Chicago Colloquium on Digital Humanities and Computer Science* 1.3 (Nov. 2011).

[13] Jaimie Murdock and Larry S. Yaeger. "Identifying Species by Genetic Clustering". *Advances in Artificial Life: 20th Anniversary Edition - Back to the Origins of Alife, ECAL 2011*. Paris, France: MIT Press, Aug. 2011, pp. 564–572.

[14] Jaimie Murdock, Cameron Buckner, and Colin Allen. "Two Methods for Evaluating Dynamic Ontologies". *Proceedings of the 2nd International Conference on Knowledge Engineering and Ontology Development (KEOD)*. Ed. by Ana Fred and Joaquim Filipe. Vol. 272. Revised and expanded in [6]. Valencia, Spain: Springer-Verlag, Oct. 2010, pp. 110–122. DOI: `10.5220/0003101601100122`.

Conference Abstracts

[15] James Pustejovsky, Marc Verhagen, Keongmin Rim, Yu Ma, Liang Ran, Samitha Liyanage, Jaimie Murdock, Robert H. McDonald, and Beth Plale. "Enhancing Access to Digital Media: The Language Application Grid in the HTRC Data Capsule". *PEARC '17: Proceedings of the Practice and Experience in Advanced Research Computing 2017 on Sustainability, Success and Impact*. Poster. New Orleans, Louisiana, USA, July 2017, 60:1–60:3. DOI: `10.1145/3093338.3104171`.

[16] Jaimie Murdock and Colin Allen. "Visualization Techniques for Topic Model Checking". *AAAI-15: Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence*. Demo of `https://hypershelf.org`. Austin, Texas, USA, Jan. 2015, pp. 4284–4285.

[17] Jaimie Murdock, Jiaan Zeng, and Robert H. McDonald. "Topic Exploration with the HTRC Data Capsule for Non-Consumptive Research". *JCDL '15: Proceedings of the 15th ACM/IEEE-CS Joint Conference on Digital Libraries*. Tutorial. Knoxville, Tennessee, USA, June 2015, p. 295. DOI: `10.1145/2756406.2756929`.

[18] Timo Sztyler, Jakob Huber, Jan Noessner, Jaimie Murdock, Colin Allen, and Mathias Niepert. "LODE: Linking Digital Humanities Content to the Web of Data". *JCDL '14: Proceedings of the 14th ACM/IEEE-CS Joint Conference on Digital Libraries*. Demo. London, United Kingdom, Sept. 2014, pp. 423–424.

[19] Jaimie Murdock, Robert Light, Colin Allen, and Katy Börner. "Mapping the Intersection of Science and Philosophy". *JCDL '13, Proceedings of the 13th ACM/IEEE-CS Joint Conference on Digital Libraries*. Poster. Indianapolis, Indiana, USA, July 2013, pp. 405–406. DOI: `10.1145/2467696.2467777`.

[20] Jaimie Murdock and Larry S. Yaeger. "Genetic Clustering for the Identification of Species". *GECCO '11. Proceedings of the 13th Annual Conference Companion on Genetic and Evolutionary Computation*. Poster. Expanded in [13]. Dublin, Ireland, July 2011, pp. 29–30. DOI: `10.1145/2001858.2001875`.

[21] Mathias Niepert, Cameron Buckner, Jaimie Murdock, and Colin Allen. "InPhO: A System for Collaboratively Populating and Extending a Dynamic Ontology". *JCDL '08: Proceedings of the 8th ACM/IEEE-CS Joint Conference on Digital Libraries*. Poster. Pittsburgh, Pennsylvania, USA, June 2008, p. 429. DOI: `10.1145/1378889.1378976`.

Miscellaneous

[22] Jaimie Murdock. "Topic Modeling the Reading and Writing Behavior of Information Foragers". Chapters 4 and 5 published as [3, 8]. PhD thesis. Indiana University, June 2019. arXiv: 1907.00488.

[23] Jaimie Murdock, Jiaan Zeng, and Colin Allen. *Towards Evaluation of Cultural-scale Claims in Light of Topic Model Sampling Effects.* Advanced Collaborative Support Technical Report. HathiTrust Research Center, June 2016. arXiv: 1512.05004.

[24] Jakob Huber, Timo Sztyler, Jan Noessner, Jaimie Murdock, Colin Allen, and Mathias Niepert. *LODE: Linking Digital Humanities Conetnt to the Web of Data.* Expanded pre-print of abstract published in [18]. 2014. arXiv: 1406.0216.

[25] Colin Allen, Jaimie Murdock, Cameron Buckner, and Robert Rose. "Computational Philosophy and the Examined Text: A Tale of Two Encyclopedias". *American Philosophical Association Newsletter on Philosophy and Computers* 12.2 (2013), pp. 28–30.

[26] Colin Allen and the InPhO Group. "Cross-Cutting Categorization Schemes in the Digital Humanities". *Isis* 104.3 (2013), pp. 573–583. DOI: 10.1086/673276.

TEACHING

Indiana University, Bloomington, IN

Foundations in Science and Mathematics

Introduction to Computer Science	June 2016
Introduction to Computer Science	June 2015

Department of History and Philosophy of Science and Medicine

HPSC-X420/X521 Computational Methods for HPS	January - May 2016

Cognitive Science Program

COGS-Q260 Programming for the Cognitive and Info. Sciences	January - March 2016
COGS-Q320 Computation in the Cognitive and Info. Sciences	March - May 2016
COGS-Q260 Programming for the Cognitive and Info. Sciences	January - March 2015
COGS-Q320 Computation in the Cognitive and Info. Sciences	March - May 2015

School of Informatics, Computing, and Engineering

INFO-I399 Research Methods	August - December 2013
CSCI-Y390 Independent Study	January - May 2013
CSCI-C343 Data Structures	August - December 2012
CSCI-C343 Data Structures	August - December 2010

PRESENTATIONS

Current Research in Digital History 2018	March 17, 2018
The Development of Darwin's Origin of Species	

Joint Conference on Digital Libraries 2017   June 20, 2017
Towards Publishing Secure Capsule-based Analysis

HTRC User Group Meeting   March 2, 2017
HTRC Data Capsule - faster, bigger, better

Philosophy of Science Association 2016 Meeting   November 4, 2016
Darwin's Semantic Voyage

Guest lecture in ILS-Z657 Digital Humanities   November 3, 2016
From Texts to InPhO (and back!)

International Conference on Thinking 2016   August 4, 2016
The Cognitive Science of Darwin's Delay

HASTAC 2016 Workshop   May 13, 2016
From Texts to InPhO (and back!)

HASTAC 2016   May 12, 2016
Darwin's Semantic Voyage

Maryland Insitute for Technology in the Humanities (MITH) Staff Talk   Apirl 19, 2016
Darwin's Semantic Voyage

IU CCCP Lab Meeting   April 13, 2016
From Texts to InPhO (and back!)

IU Intelligent and Interactive Systems Seminar   March 23, 2016
Darwin's Semantic Voyage

Pestilli Research Laboratory   March 4, 2016
Topic Modeling: A Practical Introduction

IU Speech and Hearing Science Graduate Seminar   February 26, 2016
Visualizing Scientific Data

Guest Lecture in HPSC-X521 Digital Methods for HPS   February 18, 2016
Topic Modeling: A Practical Introduction

IU CCCP Lab Meeting   February 10, 2016
Topic Modeling: A Practical Introduction

HathiTrust Research Center User Group   November 11, 2015
Charles Darwin, Information Foraging, and Non-consumptive Research

Student Organization for Cognitive Science   October 27, 2015
Darwin's Semantic Voyage

CLingDing: IU Computational Linguistics Discussion Group   October 23, 2015
Darwin's Semantic Voyage

2015 Conference on Complex Systems (CCS'15)   October 2, 2015
Darwin's Semantic Voyage

Guest Lecture in STAT-S675 Statistical Learning   September 11, 2015
Exploration and Exploitation of Darwin's Reading Notebooks

International Center for Jefferson Studies Fellows' Forum   June 4, 2015
Polymathic and Polygraphic: Thomas Jefferson's Mind

Interactive Cognitive Systems Open House   April 17, 2015
Visualization Techniques for LDA

Goldstone, Landy, Todd Lab	April 10, 2015
Topic-Driven Foraging	
IU SoIC Informatics PhD Un-poster Session	April 8, 2015
Darwin's Semantic Voyage	
APA Pacific Division Invited Symposia	April 4, 2015
Comparing Topic Models of Digital Philosophy Resources	
HathiTrust Research Center Uncamp	March 30, 2015
Topic Modeling with the HTRC Data Capsule	
Network Science Talks @ IU	March 9, 2015
Topics Over Time: Into Darwin's Mind	
IU Cognitive Computing Lab	November 5, 2014
Making Pretty Pictures w/Topic Models	
HathiTrust Research Center Uncamp	September 9, 2013
InPhO and HathiTrust: Digging for Philosophy in the Sciences	
International Association for Computing and Philosophy Annual Meeting	July 17, 2013
Simulating Expertise through Subcorpus Modeling	
Berkeley Institute of Design Lunch Series	August 7, 2012
A Tale of Two Encyclopedias	
WWW2012 Philoweb Workshop	April 17, 2012
Containing the Semantic Explosion	
IU Computer Science Club Tech Talk	November 17, 2011
Practical Parallelism	
IU Student Organization for Cognitive Science	November 15, 2011
Categorization	
Int. Conf. on Knowledge Engineering and Ontology Development	October 26, 2010
Two Methods for Evaluating Dynamic Ontologies	

AWARDS

Fellow, International Center for Jefferson Studies (ICJS)	May 2015
Provost's Award for Undergraduate Research and Creative Activity	April 2010
Cognitive Science Program Outstanding Contribution Award	April 2009
Hutton Honors College Arthur Metz Scholar	April 2007

CONSULTING

University of Pittsburgh	January 2019 - Present
The Internet Philosophy Ontology Project	`https://inphoproject.org`
University of Victoria	April 2015 - August 2017
Linked Modernisms	`http://linkedmods.uvic.ca`

Stanford University   June - August 2014
Stanford Encyclopedia of Philosophy   `https://plato.stanford.edu`

University of Alabama   October 2010 - August 2011
Syriac Reference Portal   `https://syriaca.org`

Logic Pedallers for McGraw-Hill   October 2008 - May 2009
Power of Logic Web Tutor   `http://www.poweroflogic.com`

MENTORING

Graduate: Aishwarya Iyer, Adithya Nagaraj Tirumale, Rohit Zawar

Undergraduate: Evan Boggs, Tim Downey, Hannah Eli, Alex Frost, Lauren Gaynor, Bradi Heaberlin, Ram Iyer, Ryan Penelton, Wesley Pettyjohn, Jessie Pusateri, Loran Saggu, Kirtan Sakariya, Jesse Squires, Justin Stamets, Aish Thamba, Samuel Waggoner, Catherine Xu, Sara Zhang, Sam Zorowitz