CURRICULUM VITAE
Clayton T. Morrison

School of Information
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Education

2004 M.Sc. Computer Science, UNIVERSITY OF MASSACHUSETTS, AMHERST
1998 Ph.D. Philosophy, BINGHAMTON UNIVERSITY
Dissertation: Situated Representation
Advisor: Eric Dietrich
1995 M.A. Philosophy, BINGHAMTON UNIVERSITY
1992 B.A. Cognitive Science, OCCIDENTAL COLLEGE

Professional Experience

2019 – present Associate Professor (tenured)
School of Information (iSchool), UNIVERSITY OF ARIZONA
2018 – present Regular Faculty Member
Cognitive Science Graduate Interdisciplinary Program, UNIVERSITY OF ARIZONA
2015 – present Regular Faculty Member
Statistics Graduate Interdisciplinary Program, UNIVERSITY OF ARIZONA
2014 – 2019 Associate Professor (non-tenured, tenure track)
School of Information (iSchool), UNIVERSITY OF ARIZONA
2011 – 2014 Associate Director
School of Information: Science, Technology and Arts, UNIVERSITY OF ARIZONA
2011 – 2014 Associate Research Professor
School of Information: Science, Technology and Arts, UNIVERSITY OF ARIZONA
2008 – 2011 Assistant Research Professor
Computer Science, UNIVERSITY OF ARIZONA
2006 – 2008 Research Computer Scientist
INFORMATION SCIENCES INSTITUTE, UNIVERSITY OF SOUTHERN CALIFORNIA
2003 – 2006 Postdoctoral Fellow
INFORMATION SCIENCES INSTITUTE, UNIVERSITY OF SOUTHERN CALIFORNIA
2001 – 2003 Senior Research Fellow
Computer Science, UNIVERSITY OF MASSACHUSETTS, AMHERST
1999 – 2001 Research Fellow
Computer Science, UNIVERSITY OF MASSACHUSETTS, AMHERST
1998 – 1999 Graduate Research Assistant
Computer Science, BINGHAMTON UNIVERSITY

Honors, Awards, and Memberships

DCI Postdoctoral Research Fellowship, 2003-2005
Dissertation Year Fellowship, 1997-1998
Graduate Student Award for Excellence in Teaching, 1997
Ringle Award for Academic Excellence, 1995
BA Senior Comprehensives Project Honors, 1992
Ford Fellowship, 1991

Service / Outreach (limited to time in rank)

Department Committee Service

Faculty Third Year Review Lila Bozgeyikli, Committee Chair, Spring 2019 – Fall 2019
Faculty Third Year Review Peter Jansen, Committee Member, Spring 2019 – Fall 2019
Faculty Peer Review Committee Member, Spring 2019
Faculty Recruiting Committee: Data Scientist, School of Information, Fall 2018
Department IRB Review Committee, School of Information, Fall 2016 – present
Department Honors College Representative, School of Information, Fall 2015 – present
Faculty Recruiting Committee: Human-Computer Interaction (2), School of Information, Fall 2016 – Spring 2017
Faculty Recruiting Committee: Human-Computer Interaction, School of Information, Spring 2016 – Summer 2016
Faculty Recruiting Committee: Data Science, School of Information, Fall 2016 – Summer 2016
Faculty Recruiting Committee: Computational Social Science, Department of Sociology, Summer 2015 – Spring 2016

University Committee Service

HPC Refresh 2020 RCGC Committee, Spring 2019
Strategic Planning Committee on Data Science, Spring 2018

National/International Conference Committee Service

Finance Chair, IEEE[1] International Conference on Development and Learning and Epigenetic Robotics, 2015

National/International Program Committee Service

PC member, Modeling the World's Systems, 2019
PC member, Neural Information Processing Systems (NIPS), 2016
PC member, International Joint Conference on Artificial Intelligence (IJCAI), 2016
PC member, International Conference on Development and Learning (ICDL), 2014
PC member, NSF Computational Social Interaction Workshop, 2014

Journal Reviews

IEEE[1] Transaction of Autonomous Mental Development

[1] Institute of Electrical and Electronics Engineers: https://www.ieee.org/

Publications

Book Chapters

1. Carole R. Beal, Clayton T. Morrison and Juan C. Villegas. Human computation as an educational opportunity, in *Handbook of Human Computation*, edited by Pietro Michelucci. Publisher: Springer, pp. 163-170, ISBN 978-1461488057 (Print) and 978-1461488064 (Online), 2013.
2. Clayton T. Morrison and Tim Oates. Representation Changes in Learning, in *The Encyclopedia of the Sciences of Learning*, edited by Norbet M. Seel. Publisher: Springer, ISBN 978-1441914279 (Print) 978- 978-1441914286 (Online), (ESL 2012), 2012.

Peer-Reviewed Journal Publications

(Publications preceded by * are substantively based on work done as a graduate student.)

3. Enrique Noriega-Atala, Paul D. Hein, Shraddha S. Thumsi, Zechy Wong, Xia Wang, Sean Hendrix and Clayton T. Morrison. Inter-sentence Relation Extraction for Associating Biological Context with Events in Biomedical Texts, *IEEE/ACM Transactions of Computational Biology and Bioinformatics*, 2019, DOI: 10.1109/TCBB.2019.2904231 (Print ISSN: 1545-5963, Online ISSN: 1557-9964).
4. Marco A. Valenzuela-Escárcega, Özgün Babur, Gus Hahn-Powell, Dane Bell, Thomas Hicks, Enrique Noriega-Atala, Xia Wang, Mihai Surdeanu, Emek Demir, Clayton T. Morrison. Large-scale Automated Reading with Reach Discovers New Cancer Driving Mechanisms, *Database: The Journal of Biological Databases and Curation*, 2018. `https://doi.org/10.1093/database/bay098`
5. Rodrigo Savage, Leon F. Palafox, Clayton T. Morrison, Jeffrey J. Rodriguez, Kobus Barnard, Shane Byrne, and Christopher W. Hamilton. A Bayesian approach to sub-kilometer crater analysis using individual HiRISE images, *IEEE Transactions on Geoscience and Remote Sensing*, Volume 56, Issue 10, October 2018, DOI: 10.1109/TGRS.2018.2825608 (Print ISSN: 0196-2892, Online ISSN: 1558-0644). `https://ieeexplore.ieee.org/document/8358063/`
6. Juan C. Villegas, Javier E. Espeleta, Clayton T. Morrison, David D. Breshears, and Travis E. Huxman. Factoring in canopy cover heterogeneity on evapotranspiration partitioning: Beyond big-leaf surface homogeneity assumptions. *Journal of Soil and Water Conservation* 69(3), pp.78A-83A, 2014.
7. Clayton T. Morrison and Richard T. Snodgrass. Computer Science Can Use More Science. *Communications of the ACM Viewpoints* 54(6), pp.36-38, June 2011.
8. Juan Camilo Villegas, Clayton T. Morrison, Katherine L. Gerst, Carole R. Beal, Javier E. Espeleta and Matt Adamson. Impact of an Ecohydrology Classroom Activity on Middle School Students' Understanding of Evapotranspiration, *Journal of Natural Resources & Life Sciences Education* 39, pp.150-156, 2010.
9. * Lewis A. Loren, Eric Dietrich, Clayton T. Morrison and Jonathan Beskin. What it means to be "Situated". *Cybernetics and Systems*, 29(8), pp.751-777, 1998.
10. * Clayton T. Morrison. Are we wrong about representation? An essay Review of Bickhard & Terveen. *Journal of Experimental and Theoretical Artificial Intelligence*, 9, pp. 441–470, 1997.

Competitive Peer-Reviewed Conference Publications

(Publications preceded by * are substantively based on work done as a graduate student.)

11. Rebecca Sharp, Adarsh Pyarelal, Benjamin M. Gyori, Keith Alcock, Egoitz Laparra, Marco A. Valenzuela-Escárcega, Ajay Nagesh, Vikas Yadav, John A. Bachman, Zheng Tang, Heather Lent,

Fan Luo, Mithun Paul, Steven Bethard, Kobus Barnard, Clayton Morrison, Mihai Surdeanu. Eidos & Delphi: From Free Text to Executable Causal Models. Accepted to the *Systems Demonstration Track* at the *Annual Conference of the North American Chapter of the Association for Computational Linguistics* (NAACL), 2019.

12. Peter A. Jansen, Elizabeth Wainwright, Steven Marmorstein, and Clayton T. Morrison. WorldTree: A corpus of explanation graphs for elementary science questions. In *Proceedings of the Eleventh Edition of the Language Resources and Evaluation Conference* (LREC), 2018. https://arxiv.org/abs/1802.03052

13. Colin R. Dawson, Chaofan Huang, and Clayton T. Morrison. An Infinite Hidden Markov Model with Similarity-biased Transitions. In *Proceedings of the Thirty-Fourth International Conference on Machine Learning* (ICML), 2017. https://arxiv.org/abs/1707.06756

14. Enrique Noriega-Atala, Marco A. Valenzuela-Escárcega, Clayton T. Morrison and Mihai Surdeanu. Learning what to read: Focused machine reading. In *Proceedings of the Conference on Empirical Methods in Natural Language Processing* (EMNLP), 2017. https://arxiv.org/abs/1709.00149

15. Donya Quick and Clayton T. Morrison. Composition by Conversation. In *Proceedings of the 43rd International Computer Music Conference* (ICMC), 2017. https://arxiv.org/abs/1709.02076

16. Ernesto Brau, Colin R. Dawson, Alfredo Carillo, David Sidi and Clayton T. Morrison. Bayesian Inference of Recursive Sequences of Group Activities from Tracks, In *Proceedings of the Thirtieth AAAI Conference on Artificial Intelligence* (AAAI), 2016. https://arxiv.org/abs/1604.06970

17. Jinyan Guan, Kyle Simek, Ernesto Brau, Clayton T. Morrison, Emily A. Butler and Kobus Barnard. Moderated and Drifting Linear Dynamical Systems. In *Proceedings of the Thirty-second International Conference on Machine Learning* (ICML), 2015.

18. Nathaniel J. Dykhuis, Filippo Rossi and Clayton T. Morrison. Contributions to Teams Formed in Dynamic Networks. In *Proceedings of the Multi-disciplinary Conference on Reinforcement Learning and Decision Making* (RLDM), 2015.

19. Thomas J. Walsh, Daniel Hewlett and Clayton T. Morrison. Blending Autonomous Exploration and Apprenticeship Learning. In *Proceedings of the Twenty-Fifth Annual Conference on Neural Information Processing Systems* (NIPS), 2011.

20. Tasneem Kaochar, Raquel Torres Peralta, Clayton T. Morrison, Ian R. Fasel, Thomas J. Walsh and Paul R. Cohen. Towards Understanding How Humans Teach Robots. In *Proceedings of 19th Conference on User Modeling, Adaptation and Personalization* (UMAP), 2011.

21. Raquel Torres Peralta, Tasneem Kaochar, Ian R. Fasel, Clayton T. Morrison, Thomas J. Walsh and Paul R. Cohen. Challenges to Decoding the Intention Behind Natural Instruction. In *Proceedings of the 20th IEEE International Symposium on Robot and Human Interactive Communication* (Ro-Man), 2011.

22. Ian R. Fasel, Andrew Wilt, Nassim Mafi, Clayton T. Morrison. Intrinsically Motivated Information Foraging. *International Conference on Development and Learning* (ICDL), 2010.

23. Paul R. Cohen, Yu-Han Chang, Clayton T. Morrison. Learning and Transferring Action Schemas. In *Proceedings of Twentieth International Joint Conference on Artificial Intelligence* (IJCAI), 2007.

24. Yu-Han Chang, Paul R. Cohen, Clayton T. Morrison, Robert St. Amant, and Carole R. Beal. Piagetian Adaptation Meets Image Schemas: The Jean System. In *From Animals to Animats* 9 (FAA), 2006.

25. Clayton T. Morrison and Paul R. Cohen. The Colab Mixed-Initiative Analysis Environment. In *Proceedings of the 9th International Conference on Information Fusion* (FUSION-06), 2006.

26. Clayton T. Morrison and Paul R. Cohen. The Hats Information Fusion Challenge Problem. In *Proceedings of the 9th International Conference on Information Fusion* (FUSION-06), 2006.

27. Yu-Han Chang, Clayton T. Morrison, Wesley Kerr, Aram Galstyan, Paul R. Cohen, Carole Beal, Robert St. Amant and Tim Oates. The Jean System. In *Proceedings of the 5th International Conference on Development and Learning* (ICDL), 2006.

28. Clayton T. Morrison and Paul R. Cohen. The Hats Simulator and Colab: An Integrated Information Fusion Challenge Problem and Collaborative Analysis Environment. Invited paper. In *Proceedings of the IEEE International Conference on Intelligence and Security Informatics* (ISI 2006), published in the *Springer Lecture Notes in Computer Sciences* (LNCS), number 3975.

29. Robert St. Amant, Clayton T. Morrison, Yu-Han Chang, Wei Mu, Paul R. Cohen and Carole Beal. An Image Schema Language. In *Proceedings of the International Conference on Cognitive Modeling* (ICCM), 2006.

30. Paul R. Cohen, Clayton T. Morrison and Erin N. Cannon. The Relationship Between Interaction Dynamics and Verb Use. In *Proceedings of the Nineteenth International Conference on Artificial Intelligence* (IJCAI), 2005.

31. Clayton T. Morrison, Paul R. Cohen, Gary W. King, Joshua Moody and Andrew Hannon. Simulating Terrorist Threat in the Hats Simulator. In *Proceedings of the First International Conference on Intelligence Analysis* (IA), 2005.

32. Clayton T. Morrison and Paul R. Cohen. COLAB: A Laboratory Environment for Studying Analyst Sensemaking and Collaboration. In *Proceedings of the Tenth International Command and Control Research and Technology Symposium* (10th ICCRTS), 2005.

33. Erin N. Cannon, Clayton T. Morrison and Paul R. Cohen. "Bonk!" Children's Spontaneous Production of Verbs for Object Interactions. In *Proceedings of the Biennial Meeting of the Society for Research in Child Development* (SRCD), 2005.

34. Andrew C. Hannon, Gary W. King, Clayton T. Morrison, Aram Galstyan and Paul R. Cohen. Population Generation in Large-Scale Simulation. In *Proceedings of AeroSense*, 2005.

35. Jafar Adibi, Paul R. Cohen and Clayton T. Morrison. Measuring Confidence Intervals in Link Discovery: A Bootstrap Approach. In *Proceedings of the ACM Special Interest Group on Knowledge Discovery and Data Mining* (SIGKDD), 2004.

36. Paul R. Cohen and Clayton T. Morrison. The Hats Simulator. In *Proceedings of the Winter Simulation Conference* (WSC-04), 2004.

37. Charles Sutton, Clayton T. Morrison, Paul R. Cohen, Joshua Moody and Jafar Adibi. A Bayesian Blackboard for Information Fusion. In *Proceedings of the 7th International Conference on Information Fusion* (FUSION-04), 2004.

38. Charles Sutton, Brendan Burns, Clayton T. Morrison and Paul R. Cohen. Guided Incremental Construction of Belief Networks. In *Proceedings of the Fifth International Symposium on Intelligent Data Analysis* (IDA), 2003.

39. Brendan Burns, Charles Sutton, Clayton T. Morrison and Paul R. Cohen. Information Theory and Representation in Associative Word Learning. In the *Proceedings of the Third International Workshop on Epigenetic Robotics* (EpiRob), 2003.

40. Gary W. King, Clayton T. Morrison, David L. Westbrook and Paul R. Cohen. Bridging the gap: simulations meet knowledge bases. In *Enabling Technologies for Simulation Science VII*, 2003.

41. Gary W. King, Clayton T. Morrison and Paul R. Cohen. Action Models. In *Proceedings of the Winter Simulation Conference* (WSC), 2003.

42. Kim Barker, Jim Blythe, Gary C. Borchardt, Vinay K. Chaudhri, Peter Clark, Paul R. Cohen, Julie Fitzgerald, Kenneth D. Forbus, Yolanda Gil, Boris Katz, Jihie Kim, Gary W. King, Sunil Mishra, Clayton T. Morrison, Kenneth S. Murray, Charley Otstott, Bruce W. Porter, Robert Schrag, Tomás

E. Uribe, Jeffrey M. Usher, and Peter Z. Yeh. A Knowledge Acquisition Tool for Course of Action Analysis. In *Proceedings of Innovative Applications of Artificial Intelligence* (IAAI), 2003.

43. Clayton T. Morrison, Paul R. Cohen and Paola Sebastiani. On the Development of Visual Object Memory: The Stay/Go Decision Problem. In *Proceedings of the 2nd International Conference on Development and Learning* (ICDL), 2002.

44. * Joseph Y. Lo, Walker H. Land and Clayton T. Morrison. Application of Evolutionary Programming and Probabilistic Neural Networks to breast cancer diagnosis. In *Proceedings of International Joint Conference on Neural Networks* (IJCNN), 1999.

45. * Clayton T. Morrison and Eric Dietrich. Structure-mapping vs. high-level perception: The mistaken fight over analogy making. In *Proceedings of the Seventeenth Annual Conference of the Cognitive Science Society* (CogSci), 1995.

Less Competitive Peer-Reviewed Conference and Workshop Publications
(Publications preceded by * are substantively based on work done as a graduate student.)

46. Enrique Noriega-Atala, Zhengzhong Liang, John Bachman, Clayton T. Morrison and Mihai Surdeanu. Understanding the Polarity of Events in the Biomedical Literature: Deep Learning vs. Linguistically-informed Methods. *Accepted* to the *Workshop on Extracting Structured Knowledge from Scientific Publications* (ESSP), held in conjunction with the *Annual Conference of the North American Chapter of the Association for Computational Linguistics* (ESSP@NAACL), 2019.

47. Adarsh Pyarelal, Marco A. Valenzuela-Escárcega, Rebecca Sharp, Paul D. Hein, Jon Stephens, Pratik Bhandari, HeuiChan Lim, Saumya Debray and Clayton T. Morrison. AutoMATES: Automated Model Assembly from Text, Equations, and Software. *Modeling the World's Systems*, 2019.

48. Adarsh Pyarelal, Rebecca Sharp, Clayton T. Morrison and Kobus Barnard. Interpreting Causal Expressions with Gradable Adjectives to Assemble Dynamics Models. *Modeling the World's Systems*, 2019.

49. Rebecca Sharp, Adarsh Pyarelal, Benjamin M. Gyori, Keith Alcock, Egoitz Laparra, Marco A. Valenzuela-Escárcega, Ajay Nagesh, Vikas Yadav, John A. Bachman, Zheng Tang, Heather Lent, Fan Luo, Mithun Paul, Steven Bethard, Kobus Barnard, Clayton Morrison, Mihai Surdeanu. Eidos & Delphi: From Free Text to Executable Causal Models. *Modeling the World's Systems*, 2019.

50. Katherine M. Dudding, Jane M. Carrington, Clayton T. Morrison. Detecting Neonatal Pain Through the Connection of Neonate-Nurse Communication [Abstract]. *Career, Connection, Community, Communicating Nursing Research*, San Diego, CA, 2019.

51. Enrique Noriega-Atala, Paul D. Hein, Shraddha S. Thumsi, Zechy Wong, Xia Wang and Clayton T. Morrison. Inter-sentence Relation Extraction for Associating Biological Context with Events in Biomedical Texts. *Proceedings of The Sixth Workshop on Data Mining in Biomedical Informatics and Healthcare*, held in conjunction with the IEEE International Conference on Data Mining (DMBIH@ICDM'18), 2018.

52. Marco A. Valenzuela-Escárcega, Özgün Babur, Gus Hahn-Powell, Dane Bell, Thomas Hicks, Enrique Noriega-Atala, Xia Wang, Mihai Surdeanu, Emek Demir and Clayton T. Morrison. Large-scale Automated Reading with Reach Discovers New Cancer Driving Mechanisms. *Proceedings of the BioCreative VI Workshop* (BioCreative6 2017), 2017, pp. 200-202. http://www.biocreative.org/media/store/files/2017/ProceedingsBCVI_v1.pdf

53. Enrique Noriega-Atala, Marco A. Valenzuela-Escárcega, Clayton T. Morrison and Mihai Surdeanu. Focused Reading: Reinforcement Learning for What Documents to Read. *ICML 2017 Workshop on Interactive Machine Learning and Semantic Information Retrieval* (IMLSIR@ICML), 2017.

54. Mohammad Gorji-Sefidmazgi and Clayton T. Morrison. Spatiotemporal analysis of seasonal precipitation over US using co-clustering. *Proceedings of the 6th International Workshop on Climate Informatics* (CI), 2016.

55. Jinyan Guan, Kyle Simek, Ernesto Brau, Clayton T. Morrison, Emily Butler and Kobus Barnard. Bayesian generative modeling for complex dynamical systems. *The 11th Annual Women in Machine Learning Workshop* (WiML), 2016.

56. Kuo Shiaun Peng and Clayton T. Morrison. Model Predictive Prior Reinforcement Learning for a Heat Pump Thermostat. In *Proceedings of the 11th International Workshop on Feedback Computing* (FC), 2016.

57. Christopher W. Hamilton, Leon F. Palafox, Clayton T. Morrison. Automated detection of geologic changes on Mars using Bayesian Models. *The 26th General Assembly of the International Union of Geodesy and Geophysics* (IUGG), 2015.

58. Jinyan Guan, Kyle Simek, Ernesto Brau, Clayton T. Morrison, Emily Butler and Kobus Barnard. Bayesian generative modeling for complex dynamical social systems. *The 10th Annual Women in Machine Learning Workshop* (WiML), 2015.

59. Colin R. Dawson, Luca Del Pero, Clayton T. Morrison, Mihai Surdeanu, Gustave Hahn-Powell, Zachary Chapman and Kobus Barnard. Bayesian modeling of scenes and captions. *The 2013 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies* Workshop on Vision and Language (WVL@NAACL-HLT), 2013.

60. Thomas J. Walsh, Daniel Hewlett and Clayton T. Morrison. Blending Autonomous and Apprenticeship Learning. Robots: Science and Systems (RSS), *Workshop on Imitation Learning*, 2011.

61. Raquel Torres Peralta, Tasneem Kaochar, Ian R. Fasel, Clayton T. Morrison, Thomas J. Walsh and Paul R. Cohen. Challenges to Decoding the Intention Behind Natural Instruction. *IJCAI 2011 Workshop on Agent Learning Interactively from Human Teachers* (ALIHT), 2011.

62. Tasneem Kaochar, Raquel Torres Peralta, Clayton T. Morrison, Thomas J. Walsh, Ian R. Fasel, Sumin Beyon, Anh Tran, Jeremy Wright and Paul R. Cohen. Human Natural Instruction of a Simulated Electronic Student. *AAAI Spring Symposium Series Workshop: Help Me Help You: Bridging the Gaps in Human-Agent Collaboration*, 2011.

63. Juan Camilo Villegas, Clayton T. Morrison, Katherine L. Gerst, Carol R. Beal, and Adriana Quirós. The partitioning of evapotranspiration into evaporation and transpiration: an experimental design assessing the effects of changes in vegetation cover. *Ecological Society of America (ESA)'s Digital Teaching Library (EcoEd), Millennium Conference 2009: Drought & Water-Ecosystem Services Teaching Collection*, 2009.

64. Clayton T. Morrison, Daniel Bryce, Ian R. Fasel, and Antons Rebguns. (2009). Augmenting Instructable Computing with Planning Technology, *ICAPS'09 Workshop on the International Competition for Knowledge Engineering in Planning and Scheduling* (ICKEPS), 2009.

65. Clayton T. Morrison and Paul R. Cohen. Designing Experiments to Test Planning Knowledge about Plan-step Order Constraints. In *Proceedings of the Workshop on Artificial Intelligence Planning and Learning, in conjunction with the International Conference on Automated Planning and Scheduling* (ICAPS-07), 2007.

66. Clayton T. Morrison and Paul R. Cohen. Designing Experiments to Test and Improve Hypothesized Planning Knowledge Derived from Demonstration. In *Proceedings of the 2007 AAAI Workshop on Acquiring Planning Knowledge via Demonstration*. AAAI Press, Technical Report WS-07-02, 2007

67. Clayton T. Morrison, Yu-Han Chang, Paul R. Cohen and Joshua Moody. Experimental State Splitting for Transfer Learning. In *Proceedings of the ICML 2006 Workshop on Structural Knowledge Transfer for Machine Learning* (ICML SKTML), 2006.

68. Clayton T. Morrison and Paul R. Cohen. Noisy Information Value in Utility-Based Decision Making. In *Proceedings of the Workshop on Utility-Based Data Mining, held in conjunction with the 11th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD WUBDM), 2005.
69. Clayton T. Morrison, Erin N. Cannon and Paul R. Cohen. When Push Comes to Shove: A Study of the Relation Between Interaction Dynamics and Verb Use. In *Working Notes of the AAAI Spring Symposium Workshop: Language Learning: An Interdisciplinary Perspective*, 2004.
70. Brendan Burns and Clayton T. Morrison. Temporal Abstraction in Bayesian Networks. In *Working Notes of AAAI Spring Symposium Workshop: Foundation and Applications of Spatio-Temporal Reasoning* (FASTR), 2003.
71. Clayton T. Morrison, Tim Oates and Gary W. King. Grounding the Unobservable in the Observable: The Role and Representation of Hidden State in Concept Formation and Refinement. In *Working Notes of AAAI Spring Symposium Workshop: Learning Grounded Representations* (AAAI SSS LGR), 2001.
72. * Eric Dietrich, Clayton T. Morrison and Michiharu Oshima. Conceptual Change as Change of Inner Perspective. In *Working Notes of the 1996 AAAI Fall Symposium Workshop: Embodied Cognition & Action*. Technical Report FS-96-02, 1996.

Work in Progress

73. Paul D. Hein and Clayton T. Morrison. MusTEC: Extracting Musically Interesting Patterns, *in preparation*.
74. Enrique Noriega, Marco Valenzuela, Clayton T. Morrison, and Mihai Surdeanu. Focused Reading through Reinforcement and Imitation Learning, *in preparation*.
75. Adarsh Pyarelal, Clayton T. Morrison, and Kobus Barnard. A Bayesian Framework for Probabilistic Assembly of Signaling Pathways from Machine Reading Evidence, *in preparation*.
76. Filippo Rossi, Ian R. Fasel, Clayton T. Morrison and Alan G. Sanfey. Human and Statistical Predictions of Economic Behavior Based on Facial Expressions, *in preparation*.

Patents

1. Mihai Surdeanu, Marco A. Valenzuela-Escárcega, Gustave Hahn-Powell, Dane Bell, Thomas Hicks, Enrique Noriega, Clayton T. Morrison. "Methods for Extracting and Assessing Information from Literature Documents." US Patent number: US 2018/0260474 A1, Pub Date: Sept 13, 2018.

Open-Source Software

1. `AutoMATES`: Automating model assembly from text, equations and software; `https://ml4ai.github.io/automates/`
2. `BioContext`: Annotated data corpus and classifier for identifying biological container context (e.g., species, tissue, cell type) and associating it biological events; `https://ml4ai.github.io/BioContext`
3. `delphi`: Adarsh Pyarelal, Paul Hein, and Clayton T. Morrison, Delphi: A framework for visualizing Probabilistic Models from Text and Software; DOI: 10.5281/zenodo.1436915; `https://github.com/ml4ai/delphi`
4. `SARSAmora`: SARSAmora is a Scala framework for reinforcement learning. The framework includes abstractions for separate environment interfaces (including OpenAI's Gym, using JEP

and ScalaPy), several different state, action, and policy representations, and a variety of reinforcement learning algorithms; https://github.com/ml4ai/SARSAmora

5. Focused Reading: A reinforcement learning framework for learning policies for managing both information retrieval and information extraction to minimize the number of documents that are read in the service of answering a query about the effects of one concept on another; https://github.com/ml4ai/FocusedReading
6. hamlet: A framework for probabilistic sequence modeling, including hidden Markov models and their various extensions (infinite, similarity-based transitions); open source; contact for source access: svn+ssh://vision/home/svn/src/projects/hdp_hmm_lt/trunk; python experiment management framework for hamlet: https://github.com/ml4ai/hamlet_experiment
7. REACH: biomedical information extraction suite; Reach project information can be found here: http://agathon.sista.arizona.edu:8080/odinweb/; Top performer in the machine reading evaluation organized by the DARPA Big Mechanism program: https://github.com/clulab/reach
8. B3: A Bayesian blackboard framework for activity recognition by simultaneous inference of hierarchical group structure, recursive activity definitions, and activity boundaries; https://github.com/ml4ai/b3
9. Fex Metrica: Fex Metrica comprises a set of statistical analysis and pre/post processing tools for the analysis of time series of facial expressions; Filippo Rossi is primary developer and project lead; I contribute to development and testing; https://github.com/filipporss/fex-metrica
10. Hats Simulator: A large-scale multi-agent simulator for training intelligence analysts and evaluating suspicion scoring, group identification, and plan recognition algorithms; https://github.com/ml4ai/hats

Presentations (limited to time in rank)

Invited Scholarly Presentations

1. Invited Talk: Lenora Lecture, Oberlin College Mathematics Department, Spring 2017

Conference Presentations

(& indicates talks/posters co-authored and co-presented with students, postdocs, or collaborators.)

1. NSF TRIPODS Southwest Summer Conference, 2018
2. & Thirty-fourth International Conference on Machine Learning (ICML), 2017
3. & Conference on Empirical Methods in Natural Language Processing (EMNLP), 2017
4. & BioCreative VI Workshop (BioCreative6), 2017
5. ICML 2017 Workshop on Interactive Machine Learning and Semantic Information Retrieval (IMLSIR@ICML), 2017
6. & The Thirtieth AAAI Conference on Artificial Intelligence (AAAI), 2016
7. & Sixth International Workshop on Climate Informatics (CI), 2016

8. & Eleventh International Workshop on Feedback Computing (FC), 2016
9. & Thirty-second International Conference on Machine learning (ICML), 2015
10. & Multi-disciplinary Conference on Reinforcement Learning and Decision Making (RLDM), 2015
11. & Twenty-sixth General Assembly of the International Union of Geodesy and Geophysics (IUGG), 2015.
12. NSF Workshop on Computationally Intensive Modeling of Social Interaction, 2014

Colloquia Presentations

1. UA Arizona Mathematics Department Modeling & Computation Seminar, Fall 2016
2. UA Statistics Colloquium, Fall 2016
3. Invited talk to the University of Arizona Osher Lifelong Learning Institute (OLLI-UA), Spring 2016
4. Invited talk presented to the Arizona Science Center, Fall 2015

Technical Meeting Presentations

1. DARPA World Modelers PI Meeting, Virginia, Spring 2019
2. DARPA Automating Scientific Knowledge Extraction, Virginia, Fall 2018
3. DARPA Mixed Initiative Problem Solving with Data in the Wild Workshop, Virginia, Fall 2018
4. DARPA World Modelers PI Meeting, Virginia, Summer 2018
5. DAPRA Communicating with Computers PI Meeting, New Jersey, Summer 2018
6. DARPA Big Mechanism PI Meeting, Virginia, Summer 2018
7. DARPA World Modelers PI Meeting, Virginia, Spring 2018
8. DARPA Communicating with Computers PI Meeting, Virginia, Fall 2017
9. DARPA Big Mechanism PI Meeting, Virginia, Fall 2017
10. Deputy Director, National Geospatial Intelligence Agency, Arizona, Spring 2017
11. DARPA Communicating with Computers, PI Meeting, New Jersey, Spring 2017
12. DARPA Big Mechanism PI Meeting, Virginia, Spring 2017
13. DARPA Communicating with Computers PI Meeting, Colorado, Fall 2016
14. DARPA Big Mechanism PI Meeting, Virginia, Fall 2016
15. DARPA Communicating with Computers PI Meeting, Virginia, Spring 2016
16. DARPA Big Mechanism PI Meeting, Virginia, Spring 2016
17. DARPA Communicating with Computers PI Meeting, Virginia, Summer 2015
18. DARPA Big Mechanism PI Meeting, Virginia, Summer 2015

Awarded Grants and Contracts (limited to time in rank)

1. PI; *AutoMATES: Automating Model Assembly from Text, Equations and Software*; DARPA; 20% effort; with Saumya Debray (co-PI), Adarsh Pyarelal (co-PI), Rebecca Sharp (co-PI) and Marco Antonia Valenzuela-Escárcega; $967,678; 2018-2020.
2. PI; *Program Analysis Seedling*; DARPA; 10% effort; with Saumya Debray (co-PI) and Mihai Surdeanu (co-PI); $265,592; 2018-2019.
3. Co-PI; *GRASP: Global Reading and Assembly for Semantic, Probabilistic World Models*; DARPA; 20% effort; with Kobus Barnard (co-PI), Peter Sorger (co-PI), Mihai Surdeanu (PI); $4,676,602; 2017-2021.
4. Co-PI; *Intelligent Building Envelope Technology Framework for Solar, Water, and Metabolic Processes (SWAMP)*; UA WEES REN Faculty Exploratory Grant; 25% effort; with Pierre Lucas (co-PI), Shane Smith (PI); $45,000; 2015-2016
5. Co-PI; *MUSICA: MUSical Improvising Collaborative Agent*; DARPA; 40% effort; with Ben Grosser (co-PI), Kelland Thomas (PI); $2,319,457; 2015-2020.
6. Co-PI; *REACH: Reading and Assembling Contextual and Holistic Mechanisms from Text*; DARPA; 20% effort; with Kobus Barnard (co-PI), Angus Forbes (co-PI), Ryan Gutenkunst (co-PI), Mihai Surdeanu (PI), Guang Yao (co-PI); $3,630,769; 2014-2018.
7. Co-PI; *Computational Temporal Interpersonal Emotion Systems*; NSF (Award 1322940); 15% effort; with Kobus Barnard (co-PI), Emily Butler (PI), Matthias Mehl (co-PI); $399,246; 2013-2016.
8. PI; *Emotional Sophistication: Facial Expressions in Decision Making*; NSF (Award 1232639) 80% effort; with Alan Sanfey (co-PI); $166,977; 2012-2016.