Mark D. Smucker

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Education

University of Massachusetts Amherst
- Ph.D. in Computer Science, September 2008.

University of Wisconsin-Madison
- M.S. in Computer Science, May 1996.

Iowa State University
- B.S. in Computer Science with Distinction, May 1994.
- B.S. in Physics with Distinction, May 1994.

Research Interests

I am interested in the design, analysis, and evaluation of interactive information retrieval systems.

Awards

- ACM SIGIR 2024 Honorable Mention, Test of Time Award.
- Outstanding Reviewer Award, WSDM 2021 conference, 36 PC members out of 611 (6%) were recognized with this award.
- Faculty of Engineering Distinguished Performance Award, University of Waterloo, July 2016.
- University of Waterloo Engineering Society Teaching Excellence Honourable Mention, 2014.
- Outstanding Performance Award (OPA), University of Waterloo, May 2013 and May 2019.
- Faculty of Engineering Teaching Excellence Award, University of Waterloo, 2012.
- ACM SIGIR 2012 Best Paper Award.

Student Honors

- Finalist (reached last round of competition), Microsoft Research Graduate Fellowship, 2007.
- Honor Societies: Phi Beta Kappa, Phi Kappa Phi, and Upsilon Pi Epsilon.
- Earned 3 undergraduate scholarships and 2 departmental awards for academic performance.
- Iowa State University Scholarship of Distinction: 20 awarded to incoming freshmen, full year of tuition, fall 1989.

Research Experience

Professor, July 2021 to present. Assoc. Prof., July 2014 to June 2021. Asst. Prof, July 2008 to June 2014. Department of Management Sciences, University of Waterloo.

- With collaborators, showed that incorrect information in search results has the potential to produce harmful decisions for health-related search [10, 6].
- Introduced time-biased gain (TBG) with Charles Clarke [21] * (SIGIR Best Paper). TBG produces validated predictions of human performance for information retrieval systems. Further developed as a stochastic simulation that allows us to measure the effect-size of improvements and better understand the value of the improvements [19, 42].
- With collaborators, showed the impact of spam on web retrieval and developed an efficient and effective means to detect and remove spam to improve retrieval quality [2].

Visiting Researcher, Microsoft Research, Redmond, WA. May 2015 to August 2015.

* All citation numbers refer to the list of numbered publications that starts on page 3.

- Modeled user behavior on the Bing search results page in collaboration with Ryen White, Susan Dumais, and Paul Bennet.

Graduate Research Assistant, Center for Intelligent Information Retrieval, University of Massachusetts Amherst. Advisor: James Allan. August 2003 to June 2008.

- Studied find-similar ("more like this" or "related articles") and found it to have the potential to match the performance of multiple item relevance feedback [26].
- Studied statistical significance tests for information retrieval evaluation and showed that researchers should be careful in their use of the Wilcoxon and sign tests [24].

Undergraduate, Iowa State University, Ames, Iowa, 1993-1995, and Graduate Research Assistant, Los Alamos National Lab's Center for Nonlinear Studies, Los Alamos, New Mexico, summer 1994.

- Discovered and analyzed social networks in a system that modeled social choice and refusal [5, 28, 95]. Studied the effect of population structures on genetic algorithms [27].

Teaching Experience

Department of Management Sciences, University of Waterloo. July 2008 to present.

- Developed and taught 5 new courses: Introduction to Computer Programming (GENE/MSCI 121), Data Structures and Algorithms (MSCI 240), Databases and Software Design (MSCI 245), Data Mining (MSCI 446), and Information Retrieval (MSCI 541 / 720).
- In 2015, revised Principles of Software Engineering (MSCI 342) to focus on Agile software development as a team. Student run class profiles in 2020 and 2021 found MSCI 342 to be the most useful core (required) course in the Management Engineering degree program.

Department of Computer Science, University of Massachusetts Amherst. Spring 2007.

- Fully responsible for all aspects of a 1-credit, 8-week long, C++ programming course.

Department of Computer Sciences, University of Wisconsin-Madison. Fall 1994 to spring 1996.

- Taught C++ programming: two sections fall 1995-spring 1996, and one section, spring 1995.
- Earned an average score of 4.6 / 5 for "would recommend instructor" on student evaluations spring 1996. Only 2 of the other 14 instructors received higher ratings.
- Worked as computer lab consultant supporting students, fall 1994 and summer 1995.

Industry Experience

Software Contractor, Seattle, WA. May 2002 to July 2003.

- Wrote specifications and worked directly with customers to determine requirements. Wrote custom software related to e-mail programs for Jetstream Software.

Senior Research Analyst, Avenue A, Inc., Seattle, WA. September 1999 to April 2002.

- Performed data analyses across advertisers and answered specific client questions.
- Originated idea for a distributed cluster to allow high speed, scalable processing of terabytes worth of click-stream data. This architecture became a core part of Avenue A's service offering.

Software Design Engineer, Microsoft, Redmond, WA. April 1998 to September 1999.

- Worked as both engineer and program manager in an advanced technology team creating software that adapted to user behavior.

Engineer, Firefly (aka Agents, Inc.), Cambridge, MA. June 1996 to April 1998 (acquired by Microsoft).

- Wrote front end for a part of My Yahoo that provided website recommendations via collaborative filtering. Performed analyses of server load and evaluation of the quality of recommendations.

Professional Licence

- Limited Engineer Licence (LEL) in the area of Software, Professional Engineers Ontario. 2011-present.

Publications

Google Scholar profile: https://scholar.google.com/citations?user=BgiGGQQAAAAJ&hl=en
DBLP: https://dblp.org/pid/07/801.html
ACM: https://dl.acm.org/profile/81100457054
ORCID https://orcid.org/0000-0003-4968-6405

Book Chapters

1. Mark D. Smucker. "Information Representation," Chapter 5 of *Interactive Information Seeking, Behaviour and Retrieval*, Editors: Ian Ruthven and Diane Kelly, Facet Publishing, 2011, pp. 77-94. (Invited by Editors) https://doi.org/10.29085/9781856049740.007 , Google Books

Journal Articles

2. Charles L. A. Clarke, Alexandra Vtyurina, and Mark D. Smucker. 2021. Assessing Top-k Preferences. ACM Transactions on Information Systems (TOIS). 39, 3, Article 33 (July 2021), 21 pages. https://doi.org/10.1145/3451161
3. Haotian Zhang, Gordon V. Cormack, Maura R. Grossman, and Mark D. Smucker. "Evaluating Sentence-Level Relevance Feedback for High-Recall Information Retrieval," Information Retrieval Journal, Aug 2019, 26 pages. https://doi.org/10.1007/s10791-019-09361-0
4. Gordon V. Cormack, Mark D. Smucker, and Charles L. A. Clarke. "Efficient and Effective Spam Filtering and Re-Ranking for Large Web Datasets," Information Retrieval Journal, Volume 14, Issue 5, 2011, pp. 441-465. https://doi.org/10.1007/s10791-011-9162-z
5. Dan Ashlock, Mark D. Smucker, E. Ann Stanley, and Leigh Tesfatsion. "Preferential Partner Selection in an Evolutionary Study of Prisoner's Dilemma," BioSystems, 1996, Vol. 37, No 1-2, pp. 99-125. https://doi.org/10.1016/0303-2647(95)01548-5

Refereed Conference Papers (Full papers, 8+ pages in length, journal equivalent)

6. Mustafa Abualsaud and Mark Smucker. 2022. The Dark Side of Relevance: The Effect of Non-Relevant Results on Search Behavior. In ACM SIGIR Conference on Human Information Interaction and Retrieval (CHIIR '22), March 14–18, 2022, Regensburg, Germany. 11 Pages. https://doi.org/10.1145/3498366.3505770
7. Charles L.A. Clarke, Chengxi Luo, and Mark D. Smucker. 2021. Evaluation Measures Based on Preference Graphs. Proceedings of the 44th International ACM SIGIR Conference on Research and Development in Information Retrieval, pp. 1534–1543. https://doi.org/10.1145/3404835.3462947
8. Charles L.A. Clarke, Alexandra Vtyurina, and Mark D. Smucker. 2020. Offline Evaluation without Gain. In Proceedings of the 2020 ACM SIGIR on International Conference on Theory of Information Retrieval (ICTIR '20), pp. 185–192. https://doi.org/10.1145/3409256.3409816
9. Charles L. A. Clarke, Mark D. Smucker, and Alexandra Vtyurina. 2020. Offline Evaluation by Maximum Similarity to an Ideal Ranking. In Proceedings of the 29th ACM International

Conference on Information & Knowledge Management (CIKM '20). pp. 225–234. https://doi.org/10.1145/3340531.3411915

10. Amira Ghenai, Mark D. Smucker, and Charles L.A. Clarke. 2020. A Think-Aloud Study to Understand Factors Affecting Online Health Search. Proceedings of the 2020 Conference on Human Information Interaction and Retrieval. Association for Computing Machinery, New York, NY, USA, 273–282. https://doi.org/10.1145/3343413.3377961 (38% acceptance rate)
11. Mustafa Abualsaud and Mark D. Smucker. 2019. Patterns of Search Result Examination: Query to First Action. In The 28th ACM International Conference on Information and Knowledge Management (CIKM '19), November 3–7, 2019, Beijing, China. pp. 1833-1842. https://doi.org/10.1145/3357384.3358041 (Conference acceptance rate: ~200/~1030 = 19%)
12. Haotian Zhang, Mustafa Abualsaud, Nimesh Ghelani, Mark D. Smucker, Gordon V. Cormack, and Maura R. Grossman. "Effective User Interaction for High-Recall Retrieval: Less is More," In Proceedings of the 27th ACM International Conference on Information and Knowledge Management (CIKM '18). ACM, New York, NY, USA, pp. 187-196, 2018. DOI: https://doi.org/10.1145/3269206.3271796 (Conference acceptance rate: 147/862 = 17%)
13. Haotian Zhang, Mustafa Abualsaud, and Mark D. Smucker. "A Study of Immediate Requery Behavior in Search," In Proceedings of the 2018 Conference on Human Information Interaction & Retrieval (CHIIR '18). ACM, New York, NY, USA, pp. 181-190, 2018. DOI: https://doi.org/10.1145/3176349.3176400 (Conference acceptance rate: 22/57 = 39%)
14. Frances A. Pogacar, Amira Ghenai, Mark D. Smucker, and Charles L.A. Clarke. 2017. The Positive and Negative Influence of Search Results on People's Decisions about the Efficacy of Medical Treatments. In Proceedings of the ACM SIGIR International Conference on Theory of Information Retrieval (ICTIR '17). ACM, New York, NY, USA, 209-216. DOI: https://doi.org/10.1145/3121050.3121074 (Conference acceptance rate: 27/54 = 50%)
15. Gaurav M. Baruah, Mark D. Smucker, and Charles L. A. Clarke, "Evaluating Streams of Evolving News Events," In the Proceedings of the 38th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Santiago, Chile, 2015, ACM Press, pages 675-684. (Conference acceptance rate: 70/351 = 20%)
16. Charles L. A. Clarke and Mark D. Smucker, "Time Well Spent," In the Proceedings of the Fifth Information Interaction in Context Symposium (IIIX'14), Regensburg, Germany, 2014, ACM Press, pages 205-214. (Conference acceptance rate: 21/45 = 46%)
17. Aiman L. Al-Harbi and Mark D. Smucker, "A Qualitative Exploration of Secondary Assessor Relevance Judging Behavior," In the Proceedings of the Fifth Information Interaction in Context Symposium (IIIX'14), Regensburg, Germany, 2014, ACM Press, pages 195-204. (Conference acceptance rate: 21/45 = 46%)
18. Le Li and Mark D. Smucker. "Tolerance of Effectiveness Measures to Relevance Judging Errors," In the Proceedings of the European Conference on Information Retrieval (ECIR 2014), Spring International Publishing, LNCS 8416, pages 148-159, 2014. (Conference acceptance rate: 33/143 = 23%)
19. Mark D. Smucker and Charles L. A. Clarke. "Modeling User Variance in Time-Biased Gain," In the Proceedings of the Sixth Symposium on Human-Computer Interaction and Information Retrieval (HCIR'12), 2012, ACM Press. 10 pages. (Conference acceptance rate: 4/11 = 36%)
20. Mark D. Smucker, James Allan, and Blagovest Dachev. "Human Question Answering Performance Using an Interactive Document Retrieval System," In the Proceedings of the Fourth Information Interaction in Context Symposium (IIIX'12), Nijmegen, The Netherlands, 2012, ACM Press, pp. 35-44. (Conference acceptance rate: 25/40 = 63%)

21. Mark D. Smucker and Charles L. A. Clarke. "Time-Based Calibration of Effectiveness Measures," In the Proceedings of the 35th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Portland, OR, USA, 2012, ACM Press, pp. 95-104. (This paper won the **Best Paper Award**. Award rate: 1/483 = 0.2%. Conference acceptance rate: 98/483 = 20%. In 2024, this paper was awarded an **Honorable Mention for the Test of Time Award.**)

22. Mark D. Smucker and Chandra Prakash Jethani. "Human Performance and Retrieval Precision Revisited," In Proceedings of SIGIR'10: 33rd Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Geneva, Switzerland, 2010, ACM Press, pp. 595-602. (Conference acceptance rate: 87/520 = 17%)

23. Jimmy Lin and Mark D. Smucker. "How Do Users Find Things with PubMed? Towards Automatic Utility Evaluation with User Simulations," In the Proceedings of the 31st Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Singapore, 2008, ACM Press, pp. 19-26. (Conference acceptance rate: 85/496 = 17%)

24. Mark D. Smucker, James Allan, and Ben Carterette. "A Comparison of Statistical Significance Tests for Information Retrieval Evaluation," In the Proceedings of CIKM'07: 16th ACM International Conference on Information and Knowledge Management, Lisboa, Portugal, 2007, ACM Press, pp. 623-632. (Conference acceptance rate: 87/512 = 17%)

25. Ben Carterette and Mark D. Smucker. "Hypothesis Testing with Incomplete Relevance Judgments," In the Proceedings of CIKM'07: 16th ACM International Conference on Information and Knowledge Management, Lisboa, Portugal, 2007, ACM Press, pp. 643-652. (Conference acceptance rate: 87/512 = 17%)

26. Mark D. Smucker and James Allan. "Find-Similar: Similarity Browsing as a Search Tool," In the Proceedings of the 29th Annual international ACM SIGIR Conference on Research and Development in Information Retrieval, 2006, ACM Press, pp. 461-468. (Conference acceptance rate: 74/399 = 19%)

27. Dan Ashlock, Mark D. Smucker, and John Walker. "Graph Based Genetic Algorithms," In the Proceedings of the 1999 Congress on Evolutionary Computation, 1999, pp. 1362-1368.

28. E. Ann Stanley, Dan Ashlock, and Mark D. Smucker. "Iterated Prisoner's Dilemma with Choice and Refusal of Partners: Evolutionary Results," In the Proceedings of the Third European Conference on Advances in Artificial Life, Lecture Notes In Computer Science, vol. 929, Springer-Verlag, 1995, pp. 490-502.

Refereed Short Conference Papers (4 pages or longer)

29. Dake Zhang, Amir Vakili Tahami, Mustafa Abualsaud, and Mark D. Smucker. "Learning Trustworthy Web Sources to Derive Correct Answers and Reduce Health Misinformation in Search." In Proceedings of the 45th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR '22), July 11–15, 2022, Madrid, Spain. ACM, 6 pages. https://doi.org/10.1145/3477495.3531812 , http://hdl.handle.net/10012/18257

30. Mustafa Abualsaud, Mark D. Smucker, and Charles L. A. Clarke. 2021. Visualizing Searcher Gaze Patterns. Proceedings of the 2021 Conference on Human Information Interaction and

Retrieval. Association for Computing Machinery, New York, NY, USA, 295–299. https://doi.org/10.1145/3406522.3446041

31. Shahin Rahbariasl and Mark D. Smucker. "Time-Limits and Summaries for Faster Relevance Assessing." In Proceedings of the 40th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR '19). 4 pages, 2019. (Conference acceptance rate: 108/443 = 24.4%)

32. Gordon V. Cormack, Haotian Zhang, Nimesh Ghelani, Mustafa Abualsaud, Mark D. Smucker, Maura R. Grossman, Shahin Rahbariasl and Amira Ghenai. 2019. Dynamic Sampling Meets Pooling. In Proceedings of the 40th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR '19). ACM, New York, NY, USA. 4 pages. (Conference acceptance rate: 108/443 = 24.4%)

33. Haotian Zhang, Jinfeng Rao, Jimmy Lin, and Mark D. Smucker. 2017. Automatically Extracting High-Quality Negative Examples for Answer Selection in Question Answering. In Proceedings of the 40th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR '17). ACM, New York, NY, USA, 797-800. DOI: https://doi.org/10.1145/3077136.3080645 (Conference acceptance rate: 121/398 = 30%)

34. Gaurav Baruah, Haotian Zhang, Rakesh Guttikonda, Jimmy Lin, Mark D. Smucker, and Olga Vechtomova. "Optimizing Nugget Annotations with Active Learning," In the Proceedings of the 25th ACM International Conference on Information and Knowledge Management (CIKM), 2016, pp. 2359-2364. (Conference acceptance rate: 935 submissions, 165 accepted as long paper, and 105 accepted as short papers = 28.9%).

35. Haotian Zhang, Jimmy Lin, Gordon V. Cormack, and Mark D. Smucker. "Sampling Strategies and Active Learning for Volume Estimation," In the Proceedings of the 39th International ACM SIGIR conference on Research and Development in Information Retrieval,2016, pp. 981-984. (Conference acceptance rate: 104/339 = 30.7%)

36. Aiman Al-Harbi and Mark D. Smucker. "Are Secondary Assessors Uncertain When They Disagree About Relevance Judgements?" In the Proceedings of the 2016 ACM Conference on Human Information Interaction and Retrieval (CHIIR), 2016, pp. 233-236. (Conference acceptance rate: 27/54 = 50%)

37. Mark D. Smucker and Charles L. A. Clarke. "Modeling Optimal Switching Behavior," In the Proceedings of the 2016 ACM Conference on Human Information Interaction and Retrieval (CHIRR) 2016, pp. 317-320. (Conference acceptance rate: 27/54 = 50%)

38. Luchen Tan, Haotian Zhang, Charles L. A. Clarke, and Mark D. Smucker. "Lexical comparison between Wikipedia and twitter corpora by using word embeddings," In the Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 2: Short Papers), Beijing, China, 2015, pages 657-661. (Conference acceptance rate: 22%).

39. Gaurav Baruah, Adam Roegiest, and Mark D. Smucker. "Pooling for User-Oriented Evaluation Measures," In the Proceedings of the 2015 International Conference on The Theory of Information Retrieval (ICTIR), ACM, 2015, pages 341-344. (Conference acceptance rate: 22/43 = 51%)

40. Mark D. Smucker and Charles L. A. Clarke, "Modeling Optimal Switching Behavior," In the Proceedings of the First ACM SIGIR Conference on Human Information Interaction and Retrieval (CHIIR), Chapel Hill, North Carolina, USA, 2016, ACM Press, 4 pages. (Conference acceptance rate: 27/54 = 50%)

41. Gaurav M. Baruah, Adam Roegiest, and Mark D. Smucker, "The Effect of Expanding Relevance Judgements with Duplicates," In the Proceedings of the 37th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Gold Coast, Queensland, Australia, 2014, ACM Press, pp. 1159-1162. (Conference acceptance rate: 104/263 = 40%)

42. Mark D. Smucker, Xiaoyu Sunny Guo, and Andrew Toulis, "Mouse Movement During Relevance Judging: Implications for Determining User Attention," In the Proceedings of the 37th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Gold Coast, Queensland, Australia, 2014, ACM Press, pp. 978-982. (Conference acceptance rate: 104/263 = 40%)

43. Mark D. Smucker and Charles L. A. Clarke. "Stochastic Simulation of Time-Biased Gain," In the Proceedings of CIKM, 2012, ACM Press, pp. 2040-2044. (Accepted as a short paper. 1088 submissions. 13.4% accepted as regular papers and 14.3% as short papers. Overall acceptance rate: 28%.)

44. Mark D. Smucker and James Allan. "A New Measure of the Cluster Hypothesis," In the Proceedings of the 2nd International Conference on the Theory of Information Retrieval (ICTIR'09), September 2009, Cambridge, UK, pp. 281-288. (Accepted as a short paper. 82 submissions. 22% accepted as regular papers. 21% accepted as short papers. Overall paper acceptance rate = 43%.)

Refereed Poster (Short 2-Page) Conference Papers

45. Mark D. Smucker and Chandra Prakash Jethani. "Time to Judge Relevance as an Indicator of Assessor Error," In the Proceedings of the 35th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Portland, OR, USA, 2012, ACM Press, pp. 1153-1154. (Conference acceptance rate: 76/208 = 37%)

46. Mark D. Smucker and Chandra Prakash Jethani. "Measuring Assessor Accuracy: A Comparison of NIST Assessors and User Study Participants," In the Proceedings of the 34th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Beijing, China, July 2011, ACM Press, pp. 1231-1232. (Conference acceptance rate: 89/274 = 33%)

47. Mark D. Smucker, James Allan, and Ben Carterette. "Agreement Among Statistical Significance Tests for Information Retrieval Evaluation at Varying Sample Sizes," In Proceedings of SIGIR'09: 32nd Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Boston, Massachusetts, USA, 2009, ACM Press, pp. 630-631. (Conference acceptance rate: 86/256 = 34%)

48. Mark D. Smucker and James Allan. "Using Similarity Links as Shortcuts to Relevant Web Pages," In Proceedings of the 30th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, 2007, ACM Press, pp. 863-864. (Conference acceptance rate: 105/235 = 45%)

49. Mark D. Smucker and James Allan. “Lightening the Load of Document Smoothing for Better Language Modeling Retrieval,” In Proceedings of the 29th Annual international ACM SIGIR Conference on Research and Development in Information Retrieval, 2006, ACM Press, pp. 699-700. (Conference acceptance rate: 52/140 = 37%)

Refereed Demonstration Conference Papers

50. Mahsa Seifikar, Linh Nhi Phan Minh, Negar Arabzadeh, Charles L. A. Clarke, and Mark D. Smucker. 2023. A Preference Judgment Tool for Authoritative Assessment. In Proceedings of the 46th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR ’23), July 23–27, 2023, Taipei, Taiwan. ACM, New York, NY, USA, 5 pages. https://doi.org/10.1145/3539618.3591801 (Overall Acceptance Rate: 792 of 3,983 submissions = 20%)

51. Mustafa Abualsaud, Nimesh Ghelani, Haotian Zhang, Mark D. Smucker, Gordon V. Cormack, and Maura R. Grossman. 2018. A System for Efficient High-Recall Retrieval. In The 41st International ACM SIGIR Conference on Research & Development in Information Retrieval (SIGIR '18). ACM, New York, NY, USA, 1317-1320. DOI: https://doi.org/10.1145/3209978.3210176 (Conference acceptance rate: 18/36 = 50%)

Refereed Workshop Papers

52. Ghenai, Amira, Mark D. Smucker and Charles L. A. Clarke. "A Think-Aloud Study about Medical Misinformation in Search Results." SIGIR 2019 Workshop on Reducing Online Misinformation Exposure (ROME). 6 pages, 2019.

53. Abualsaud, Mustafa, and Mark D. Smucker. "Exposure and Order Effects of Misinformation on Health Search Decisions." SIGIR 2019 Workshop on Reducing Online Misinformation Exposure (ROME). 6 pages, 2019.

54. Nimesh Ghelani, Gordon V. Cormack, and Mark D. Smucker. "Refresh Strategies in Continuous Active Learning," In the Proceedings of the First International Workshop on Professional Search (ProfS2018), SIGIR 2018, 6 pages.

55. Aiman L. Al-Harbi and Mark D. Smucker. “User Expressions of Relevance Judgment Certainty,” In the Proceedings of the 7th Annual Symposium on Human-Computer Interaction and Information Retrieval (HCIR 2013), October 2013, Vancouver, BC, Canada. 4 pages. (Workshop short paper acceptance rate: 16/16 = 100%)

56. Mark D. Smucker and Charles L. A. Clarke. “The fault, dear researchers, is not in Cranfield, But in our metrics, that they are unrealistic,” In the Proceedings of EuroHCIR, August 2012, Nijmegen, The Netherlands. 2 pages. (This paper was 1 of 9 papers selected for oral presentation. Workshop acceptance 9/32 = 28%.)

57. Mark D. Smucker. “An Analysis of User Strategies for Examining and Processing Ranked Lists of Documents,” In the Proceedings of the Fifth Workshop on Human-Computer Interaction and Information Retrieval (HCIR’11), October 20, 2011, Mountain View, CA, USA. 4 pages. (Accepted for a short oral presentation.)

58. Mark D. Smucker and Chandra Prakash Jethani. “The Crowd vs. the Lab: A Comparison of Crowd-Sourced and University Laboratory Participant Behavior,” In the Proceedings of the SIGIR 2011 Workshop on Crowdsourcing for Information Retrieval, July 2011, Beijing, China. 6 pages. (This paper won the workshop’s Crowdsourcing Challenge Contest.)

59. Mark D. Smucker and Chandra Prakash Jethani. “Impact of Retrieval Precision on Perceived Difficulty and Other User Measures,” In the Proceedings of the Fourth Workshop on Human-Computer Interaction and Information Retrieval (HCIR’10), August 22, 2010, New Brunswick, NJ, USA. 4 pages. (This paper was 1 of 6 papers accepted for oral presentation.)

60. Chandra Prakash Jethani and Mark D. Smucker. “Modeling the Time to Judge Document Relevance,” In the Proceedings of the SIGIR’10 Workshop on the Simulation of Interaction, July 23, 2010, Geneva, Switzerland. 2 pages.

61. Mark D. Smucker. “Towards Timed Predictions of Human Performance for Interactive Information Retrieval Evaluation,” In the Proceedings of the Third Workshop on Human-Computer Interaction and Information Retrieval (HCIR’09), October 23, 2009, Washington DC. 4 pages.

62. Mark D. Smucker. “A Plan for Making Information Retrieval Evaluation Synonymous with Human Performance Prediction,” In the proceedings of the SIGIR’09 Workshop on the Future of Information Retrieval Evaluation, Boston, 2009. 2 pages. (Acceptance rate: 61% = 20/33)

63. Mark D. Smucker. “Work in Progress: Navigating Document Networks,” HCIR’07 Workshop on Human-Computer Interaction and Information Retrieval, October 23, 2007, Cambridge, Massachusetts. 2 pages.

64. Mark D. Smucker and James Allan. “Measuring the Navigability of Document Networks,” SIGIR’07 Web Information-Seeking and Interaction Workshop, Amsterdam, The Netherlands, 2007. 4 pages.

Refereed Posters

65. Rebecca Reznik-Zellen, Bob Stevens, Michael Thorn, Jeff Morse, Mark D. Smucker, James Allan, David Mimno, Andrew McCallum, and Mark Tuominen. “InterNano: e-Science for the Nanomanufacturing Community,” In Proceedings of the 4th IEEE International Conference on e-Science, 2008. 2 pages.

Refereed Tutorials

66. Charles L. A. Clarke, Mark D. Smucker, and Emine Yilmaz. “IR Evaluation: Modeling User Behavior for Measuring Effectiveness,” In Proceedings of the 38th International ACM SIGIR Conference on Research and Development in Information Retrieval, ACM, 2015, pages 1117-1120.

Thesis

67. Mark D. Smucker. “Evaluation of Find-Similar with Simulation and Network Analysis,” Ph.D. Thesis, University of Massachusetts Amherst, September 2008. 150 pages.

Unrefereed Papers

68. Dake Zhang, Mark D. Smucker, and Charles L. A. Clarke. "Overview of the TREC 2024 Lateral Reading Track (Notebook)," In the 2024 Text Retrieval Conference Notebook (TREC 2022), NIST, 10 pages.

69. Charles L. A. Clarke, Maria Maistro, and Mark D. Smucker. "Overview of the TREC 2022 Health Misinformation Track (Notebook)," In the 2022 Text Retrieval Conference Notebook (TREC 2022), NIST, 10 pages.

70. Charles L. A. Clarke, Maria Maistro, and Mark D. Smucker. "Overview of the TREC 2021 Health Misinformation Track," In the Online Proceedings of the 2021 Text Retrieval Conference (TREC 2021), NIST, 10 pages.

71. Mustafa Abualsaud, Irene Xiangyi Chen, Kamyar Ghajar, Linh Nhi Phan Minh, Mark D. Smucker, Amir Vakili Tahami, and Dake Zhang. "UWaterlooMDS at the TREC 2021 Health Misinformation Track," In the Online Proceedings of the 2021 Text Retrieval Conference (TREC 2021), NIST, 18 pages.

72. Charles L. A. Clarke, Maria Maistro, Saira Rizvi, Mark D. Smucker, and Guido Zuccon. "Overview of the TREC 2020 Health Misinformation Track," In the Online Proceedings of the 2020 Text Retrieval Conference (TREC 2020), NIST, 11 pages.

73. Mustafa Abualsaud, Christina Lioma, Maria Maistro, Mark D. Smucker, and Guido Zuccon. "Overview of the TREC 2019 Decision Track," In the Online Proceedings of the 2019 Text Retrieval Conference (TREC 2019), NIST, 19 pages.

74. Mustafa Abualsaud, Fuat C. Beylunioglu, Mark D. Smucker, and P. Robert Duimering. "UWaterlooMDS at the TREC 2019 Decision Track," In the Online Proceedings of the 2019 Text Retrieval Conference (TREC 2019), NIST, 11 pages.

75. Mustafa Abualsaud, Gordon V. Cormack, Nimesh Ghelani, Amira Ghenai, Maura R. Grossman, Shahin Rahbariasl, Mark D. Smucker, and Haotian Zhang. "UWaterlooMDS at the TREC 2018 Common Core Track," In the Online Proceedings of the 2018 Text Retrieval Conference (TREC 2018), NIST, 4 pages.

76. J. Shane Culpepper, Fernando Diaz, and Mark D. Smucker. 2018. Research Frontiers in Information Retrieval: Report from the Third Strategic Workshop on Information Retrieval in Lorne (SWIRL 2018). SIGIR Forum 52, 1 (August 2018), 34-90. DOI: https://doi.org/10.1145/3274784.3274788

77. Haotian Zhang, Mustafa Abualsaud, Nimesh Ghelani, Angshuman Ghosh, Mark D. Smucker, Gordon V. Cormack, Maura R. Grossman. "UWaterlooMDS at the TREC 2017 Common Core Track," In the Online Proceedings of the 2017 Text Retrieval Conference (TREC 2017), NIST, 15 pages.

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82. Diane Kelly, Jaime Arguello and Robert Capra (Editors). "NSF Workshop on Task-based Information Search Systems," SIGIR Forum, Volume 47 (2), December 2013, ACM Press, pp. 116-127. (I was a participant in the workshop, and I am a co-author of the report.)

83. Robert Capra, Luanne Freund, Catherine L. Smith, Mark D. Smucker, Ryen W. White. "HCIR 2013: The Seventh International Symposium on Human-Computer Interaction and Information Retrieval," SIGIR Forum, Volume 47 (2), December 2013, ACM Press, pp. 33-40.

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85. Mark D. Smucker, Gabriella Kazai, and Matthew Lease, "Overview of the TREC 2013 Crowdsourcing Track", TREC 2013, 6 pages.

86. P. Robert Duimering, Samir Elhedhli, Beth Jewkes, and Mark D. Smucker. "Management Engineering: The Engineering of Management Systems," Report prepared for Engineers Canada, Department of Management Sciences, University of Waterloo, January 2013. 21 pages.

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88. Mark D. Smucker. "Crowdsourcing with a Crowd of One and Other TREC 2011 Crowdsourcing and Web Track Experiments," In the Online Proceedings of the 2011 Text Retrieval Conference (TREC 2011), NIST. 4 pages. (Selected for presentation at TREC 2011.)

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90. Chris Buckley, Matthew Lease, Mark D. Smucker. "Overview of the TREC 2010 Relevance Feedback Track (Notebook)," In the Online Proceedings of the 2010 Text Retrieval Conference (TREC 2010), NIST. 4 pages.

91. Leif Azzopardi, Kalervo Järvelin, Jaap Kamps, and Mark D. Smucker. "Report on the SIGIR 2010 Workshop on the Simulation of Interaction," SIGIR Forum, Volume 44, December 2010, ACM Press, pp. 35-47.

92. Mark D. Smucker, Charles L. A. Clarke, and Gordon V. Cormack. "Experiments with ClueWeb09: Relevance Feedback and Web Tracks," In the Online Proceedings of the 2009 Text Retrieval Conference (TREC 2009), NIST. 5 pages.

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94. Mark D. Smucker. "UMass Genomics 2006: Query-Biased Pseudo Relevance Feedback," In the Online Proceedings of the 2006 Text Retrieval Conference (TREC 2006), NIST. 4 pages.

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96. Mark D. Smucker and James Allan. "An Investigation of Dirichlet Prior Smoothing's Performance Advantage," University of Massachusetts Amherst, Center for Intelligent Information Retrieval (CIIR), Technical Report IR-391, 2005. 8 pages.

97. Mark D. Smucker, Fernando Diaz, and James Allan. "High Precision Retrieval via User Interaction and Metadata," University of Massachusetts Amherst, Center for Intelligent Information Retrieval (CIIR), Technical Report IR-390, 2005. 8 pages.

98. Mark D. Smucker, David Kulp, and James Allan. "Dirichlet Mixtures for Query Estimation in Information Retrieval," University of Massachusetts Amherst, Center for Intelligent Information Retrieval (CIIR), Technical Report IR-445, April 2005. 13 pages.

99. Mark D. Smucker, E. Ann Stanley, and Dan Ashlock. "Analyzing Social Network Structures in the Iterated Prisoner's Dilemma with Choice and Refusal," University of Wisconsin-Madison Computer Sciences Tech Report CS-TR-94-1259, December 1994, revised August 1995. 37 pages.

Proceedings (Ed.)

100. Krisztian Balog, David Elsweiler, Evangelos Kanoulas, Liadh Kelly, and Mark D . Smucker (editors). Proceedings of the 2013 Workshop on Living Labs for Information Retrieval Evaluation. CIKM 2013, San Francisco, 2013, ACM.

101. Charles L. A. Clarke, Luanne Freund, Mark D. Smucker, and Emine Yilmaz (editors). Proceedings of the SIGIR 2013 Workshop on Modeling User Behavior for Information Retrieval Evaluation, Dublin, Ireland, August 1, 2013.

102. Robert Capra, Luanne Freund, Gene Golovchinsky, Catherine Smith, Mark D. Smucker, Ryen White (editors). The Online Proceedings of the 7th Annual Symposium on Human-Computer Interaction and Information Retrieval (HCIR 2013), Vancouver, 2013.

103. Leif Azzopardi, Kalervo Järvelin, Jaap Kamps, and Mark D. Smucker (editors). Proceedings of the SIGIR 2010 Workshop on the Simulation of Interaction: Automated Evaluation of Interactive IR, Geneva, Switzerland, July 23, 2010.

Presentations (Excluding Above Publications)

1. Invited Presentation, Task Workshop, Microsoft Research (MSR) Faculty Summit, 2019. "A Look at the Effect of Search Results on Health Search Decision Making."

2. Invited member of "pro" team for debate on "Simulating Users is the Way Forward in Evaluation of Interactive Information Retrieval," Information Interaction in Context Symposium (IIiX), New Brunswick, NJ, USA, 2010. Other team members: Leif Azzopardi, Kalervo Järvelin, and Jaap Kamps.

Research Funding

Year	Amount	Source
2025	$13,460 (in-kind value)	Digital Research Alliance 2025 Resources for Research Groups (RRG) allocation for storage. Co-PI: Charles L. A. Clarke. My share: 50%
2024	$100,000	NSERC Alliance. *Tools to Support Lateral Reading of News Articles.* PI: Charles Clarke. My share: 50%.
2024	$96,152	NSERC Alliance, Mitacs, and Shinydocs Inc. *High Recall Retrieval for Enterprise Data Management.* Co-PI: Charles L. A. Clarke. My share: 50%.
2024	$10,663 (in-kind value)	Digital Research Alliance 2024 Resources for Research Groups (RRG) allocation for storage. Co-PI: Charles L. A. Clarke. My share: 50%
2023-Oct	$8,000	Microsoft (Azure Credits)
2023-Feb	$7,000	Microsoft (Azure Credits)
2023	$17,157 (in-kind value)	Compute Canada 2023 Resources for Research Groups (RRG) allocation for CPU, storage, and cloud computing. Co-PI: Charles L. A. Clarke. My share: 50%
2022	$100,000	Microsoft gift for "Trust in News". PI: Charles L. A. Clarke. Co-PIs: Mark D. Smucker, Jimmy Lin, Pascal Poupart. My share: 25%
2022	$24,665 (in-kind value)	Compute Canada 2022 Resources for Research Groups (RRG) allocation for CPU, GPU, storage, and cloud computing. Co-PI: Charles L. A. Clarke. My share: 50%
2022	$10,000	NSERC RTI Refurbishment grant.
2021	$37,690 (in-kind value)	Compute Canada 2021 Resources for Research Groups (RRG) allocation for CPU, GPU, storage, and cloud computing. Co-PI: Charles L. A. Clarke. My share: 50%
2020	$120,000 ($40,000/year for 3 years)	Accelerator Supplement - Natural Sciences and Engineering Research Council of Canada, Discovery Grant Program
2020	$48,000 per year, 5 years, total: $240,000	Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant
2020	US$38,500	Google Faculty Research Award (Co-PI, 50% share). PI: Charles L. A. Clarke.
2015-2020	$179,691	Natural Sciences and Engineering Research Council of Canada (NSERC) Collaborative Research and Development grant (CRD). Industry partner: Google. Co-PIs: Charles L. A. Clarke and Gordon V. Cormack.
2014-2019	$32,000 per year, 5 years, total: $160,000	Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant

2015	$71,500 (in-kind value)	2015 Compute Canada Resource Allocation (RAC) for 65 TB of storage.
2014	$10,778	GRAND (Graphics, Animation and New Media) NCE
2009-2013	$24,000 per year, total: $120,000	Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant
2012	$5000	NSERC Supplemental Discovery Grant
2009-2013	US$10,000 (Apr. 2013) US$7500 (Mar. 2011) US$3000 (Dec. 2009) US$4000 (June 2009) total: US$24,500	Amazon Web Services in Education Research Grant Dec. 2009 grant with Charles L. A. Clarke and Gordon V. Cormack; my share of the award was 100%.
2011	$200	SIGIR 2011 CrowdSourcing Workshop Challenge Grant, CrowdFlower, Inc.

Teaching

Courses Taught

In addition to teaching each of these courses, I developed or redesigned each of these courses for the Management Engineering (MGTE) undergraduate program. Excluded are graduate reading courses I have offered to my graduate students.

Title	Level	Times Taught	Development Work
MSE 121 (was GENE and MSCI) Introduction to Computer Programming (redesign)	1B (Core) and 1A (Core)	7	Redesign for MGTE program when transitioned from first year engineering.
MSCI 240 Data Structures and Algorithms (new course)	2A (Core)	6	Designed new course (first to teach course)
MSCI 245 Databases and Software Design (new course)	2B (Core)	2	Designed new course.
MSCI 342 Principles of Software Engineering (redesign)	3A/3B (Core)	7	Redesigned: teamwork and Agile approach.
MSCI 446 Data Mining (new course)	3A+ (Tech. Elective)	1	Designed new course.
MSCI 541/720 Search Engines (new course)	3A+ (Tech. Elective) and Graduate	11	Designed new course.
MSCI 720 (Topics) Recommendation Systems	Graduate	1	Designed new course.

Student Course Perceptions Scores (Learning Experience)

Term and year	Course Number	Course Title	Instructor Average Q1-3 (Std Dev)	Course Design Average Q4-6 (Std Dev)	Number of Students	% Response
F24	MSE 541	Search Engines	4.5 (0.5)	4.2 (0.7)	58	19%
F24	MSE 121	Intro. to Computer Programming	3.9 (0.9)	3.8 (0.9)	99	56%
W24	MSCI 121	Intro. to Computer Programming	3.7 (1.0)	3.6 (1.0)	96	64%
W24	MSCI 720	Topics: Recommendation Systems	5.0 (0.1)	5.0 (0.1)	10	70%
F23	MSCI 541	Search Engines	4.7 (0.6)	4.5 (0.7)	69	57%
F22	Started year long sabbatical (F22, W23, S23).					
W22[†]	MSCI 342	Principles of Software Engineering	4.3 (0.8)	4.3 (0.6)	89	45%
Average of Undergraduate Courses			4.2	4.1	82.2	48%

[†] W22 was partly online and partly in-person and was the last term affected by the COVID pandemic.

Course Critique Scores

Note: Question 10 is "Quality of Teaching," and Questions 1-9 address attributes of teacher quality.

COVID-Pandemic teaching:

Term and year	Course	Number of Students	Critique Q 10	Critique Avg. Q 1-9	% Response
F21-online	MSCI 541	30	77	83	37%
F21-blended	MSCI 541	12	88	94	33%
S21-online	MSCI 245	92	NA[‡]	NA	46%
S21-online	MSCI 541/720	38	NA	NA	34%
W21-online	MSCI 342	77	71	78	51%
S20-online	MSCI 245	85	57[§]	76	51%

Pre-Pandemic teaching:

Term and year	Course	Number of Students	Critique Q 10	Critique Avg. Q 1-9	% Response
Fall 2019	MSCI 342	68	36[**]	50	74%
Fall 2018	MSCI 342	60	80	81	35%
Winter 2018	MSCI 541/720	23	95	91	91%
Fall 2017	MSCI 342	61	86	86	62%
Winter 2017	MSCI 541/720	30	93	92	73%
Fall 2016	MSCI 342	52	77	82	79%
Winter 2016	MSCI 541/720	15	73	81	87%
Fall 2015	MSCI 342	46	78	83	76%
Fall 2014	MSCI 240	58	91	91	78%
Winter 2014	MSCI 541/720	14	87	90	79%
Winter 2014	MSCI 121	74	86	87	76%
Fall 2013	MSCI 240	51	92	92	76%
Winter 2013	MSCI 541/720	18	92	90	56%
Winter 2013	GENE 121	60	89	91	67%

[‡] In spring 2021, I participated in a new course critiques experimental system that does not have comparable scores. For MSCI 245, the course average score was 3.3 on a 5 point scale, and my "professor" average was 3.1. For MSCI 541, the course average score was 4.3 on a 5 point scale, and my "professor" average was 4.2.

[§] First online term of the pandemic delivering a newly redesigned course.

[**] The 36 is a not a typo, but it does represent an outlier compared to the other course evaluations, and other course offerings of MSCI 342, which had Q10 scores of: 71, 80, 86, 77, and 78. In the Fall 2019 offering, I acted as a "client" to two project teams. My teaching assistants and I did not believe these two teams performed well. My negative feedback to the teams was perceived as unfair as best as I can ascertain based on the number of comments mentioning that students thought I was unfair to the two teams. While I have successfully played the role of client in previous terms, it did not work in Fall 2019. In subsequent offerings, I redesigned elements of the course and no longer assume multiple roles, which can be stressful to students. Student run class profiles in 2020 and 2021 found MSCI 342 to be the most useful core (required) course in the Management Engineering degree program. The class of 2021 are the students that gave this course a Q10 of 36 in Fall 2019. MSCI 342 was also the most disliked course for the 2021 graduating cohort. In Winter 2022, with the new student course perceptions evaluation and a return to in-person learning, the course average score for 342 was 4.3 out of 5, and the professor average was also 4.3 out of 5, which I believe shows that the changes I made were successful.

Fall 2012	MSCI 240	61	92	89	67%
Winter 2012	MSCI 541/720	11	94	93	82%
Winter 2012	GENE 121	64	81	86	84%
Winter 2011	GENE 121	74	78	81	53%
Fall 2010	MSCI 446	28	81	81	86%
Fall 2010	MSCI 240	54	76	78	67%
Winter 2010	GENE 121	72	76	76	61%
Fall 2009	MSCI 240	46	69	75	76%
Fall 2008	MSCI 240	41	89	86	71%
	Overall Avg:	50.2	80.8	83.8	65.8%

Teaching Professional Development

- Completed CTE 9800 – Graduate Supervision Series in 2023.
- Completed 4-day Teaching Excellence Academy (TEA) in 2015.
- Completed 3-day Instructional Skills Workshop (ISW) in 2009.

Curriculum Development

As noted above, as an instructor, I have developed (first taught) or redesigned 6 courses for the Management Engineering program. These courses include the first 4 required courses in information systems (computer science) for our Management Engineering students. Certainly, MSCI 121, 240, and 446 have evolved since I last taught them with subsequent instructors continually improving and changing the courses.

As Associate Chair for Undergraduate Studies in the Department of Management Sciences, I oversaw substantial curriculum improvements. In 2015, I conducted an overview of the Management Engineering (MGTE) program with faculty and students and identified key issues and opportunities for improvement. With the help of faculty, staff, and students, I successfully made these improvements:

1. Eliminated redundancy in the information systems courses by combining MSCI 346 (Databases) and MSCI 444 (Information Systems Design and Analysis) by creating MSCI 245 (Databases and Software Design) and redesigning MSCI 342 (Principles of Software Engineering).
2. Increased our coverage of probability and statistics by creating two courses in probability and statistics rather than the previous single course. These courses are notable for teaching probability and statistics together in each course rather than separating the topics into two separate courses. Our belief is that this allows the subject material to be reinforced and should increase retention of concepts.
3. Redesigned our co-op work reports (MSCI 391, 392, 491) to be reflective work reports with an integrated report on pre-graduation engineering experience for future professional engineering applications.
4. Added a course on professional communication in engineering (English) as well requiring professional development (PD) courses in engineering ethics and technical writing.
5. Redesigned the curriculum to lower the load by 2 courses while increasing choice in natural science and improving our CEAB AUs (Accreditation Units). In doing so, this allows all but one term to be 5 courses, which should help reduce the stress reported by students in exit surveys for terms with formerly heavier loads.
6. Created new technical electives relevant to our program and organized their offerings to balance the various technical streams in our program.

Student Supervision

Current Graduate Students

Name (Co-Supervisor)	Degree	Supervisory Period	Research Description and Comments
Abdul Manaam	MASc	9/2023-	Abdul will be working on user interaction for high recall information retrieval. https://www.linkedin.com/in/amanaam/
Dake Zhang	PhD	9/2022-	Dake is working on a project to increase reader trust in news. https://www.linkedin.com/in/zhangdake/
Troy Zada	PhD	9/2024-	Troy is investigating how people perceive the quality of top-n recommendations. https://www.linkedin.com/in/troy-zada/

Former Graduate Students

Name (Co-Supervisor)	Degree	Supervisory Period	Research Title and Comments
Houmaan Chamani	MASc	9/2022-12/2024	*A Test Collection for Offline Evaluation of Recommender Systems* Post-degree: Software Developer https://www.linkedin.com/in/houmaan-chamani-9b5453170/
Kamyar Ghajar (Charles Clarke)	MMath	9/2020-12/2023	*Evaluating the Ability of Commercial Search Engines to Help People Answer Health Questions* Post-degree: Software Developer https://www.linkedin.com/in/kamyarghajar/
Linh Nhi Phan Minh	MMath	9/2020-4/2023	*An Investigation of Preference Judging Consistency* Post-degree: Software Developer https://www.linkedin.com/in/linhnhifm/
Amir Vakili Tahami	MASc	9/2020-12/2022	*Answering Consumer Health Questions on the Web* Post-degree: Software Developer https://www.linkedin.com/in/avakilit/
Nicole Yan (Charles Clarke)	MMath	9/2020-12/2022	*Offline Evaluation via Human Preference Judgments: A Dueling Bandits Problem* Post-degree: Applied Scientist, Amazon https://www.linkedin.com/in/xynicole/

Dake Zhang	MMath	9/2020-8/2022	*Reducing Health Misinformation in Search Results* Post-degree: PhD Student https://www.linkedin.com/in/zhangdake/
Mustafa Abualsaud	PhD	5/2017-12/2021	*Users, Queries, and Bad Abandonment in Web Search* Post-degree: Applied Research Scientist, Thomson Reuters, Toronto, Canada https://www.linkedin.com/in/mustafaabualsaud/
Fuat Can Beylunioglu (Robert Duimering)	MASc	9/2018-8/2020	*Using a Credibility Classifier to Improve Health-Related Information Retrieval* Post-degree: PhD student https://www.linkedin.com/in/fcbeylunioglu/
Mays Hmadh (Robert Duimering)	MMSc	1/2018-5/2020	Mays investigated topics related to misinformation in search. https://www.linkedin.com/in/mays-hmadh-ab5046139/
Amira Ghenai (Charles Clarke)	PhD	10/2015-12/2019	*Health Misinformation in Search and Social Media* Post-degree: Assistant Professor, Ted Rodgers School of Management, Ryerson University, Toronto, Canada https://www.linkedin.com/in/amiraghenai/
Haotian Zhang (Gordon Cormack)	PhD	1/2015-4/2019	*Increasing the Efficiency of High-Recall Information Retrieval* Post-degree: Software Engineer, Wish, Toronto, Canada https://www.linkedin.com/in/zhanghaotian/
Shahin Rahbariasl	MMath Thesis	9/2016-8/2018	*The Effects of Time Constraints and Document Excerpts on Relevance Assessing Behavior* Post-degree: Software Engineer, Blockthrough, Toronto, Canada https://www.linkedin.com/in/shahin-rahbariasl-b16b8210b/
Nimesh Ghelani	MMath Thesis	9/2016-8/2018	*Refresh Strategies in Continuous Active Learning* Post-degree: Software Engineer, Machine Learning, Bloomberg, London, UK https://www.linkedin.com/in/nimesh-ghelani-36aab821/

Mustafa Abualsaud	MMath Thesis	1/2015-4/2017	*Learning Factors and Determining Document-level Satisfaction in Search-as-Learning* Post-degree: PhD student, University of Waterloo https://www.linkedin.com/in/mustafaabualsaud/
Aiman L. Al-Harbi	PhD	3/2011-8/2016	*Studying Relevance Judging Behavior of Secondary Assessors* Post-degree: Assistant Prof., King Saud bin Abdulaziz University for Health Sciences https://www.linkedin.com/in/aiman-altamimi-329b557/
Gaurav Baruah (Charles Clarke)	PhD	9/2011-8/2016	*Filtering News from Document Streams: Evaluation Aspects and Modeled Stream Utility* Post-degree: Post-Doctoral Fellow, University of Waterloo https://www.linkedin.com/in/gaurav-baruah/
Le Li	MMath Thesis	9/2011-8/2013	*Evaluating Information Retrieval Systems with Multiple Non-Expert Assessors* Post-degree: Software Engineer in Data, Electronic Arts, Inc., USA.
Chandra Prakash Jethani	MMath Thesis	9/2009-8/2011	*Effect of Prevalence on Relevance Assessing Behaviour* Post-degree: Software Development Engineer, Yahoo! Inc., USA. https://www.linkedin.com/in/cpjethani/
Xiaoyin (Susan) Yang (Robert Duimering)	MASc	1/2009-10/2009	*Collective Intelligence in Collaborative Tagging System*

Current and Former Undergraduate Students

Name	Work Supervised	Supervisory Period	Research Title and Comments
Abirami Karthikeyan and Sarah Wilson	URA	Fall 2024 and Winter 2025	Assisted with lateral reading research project. My PhD student supervised these two students in the fall as part of the UR2PhD program. I supervised in the winter.
Henry Waters	Independent Study	Winter 205	Henry has been studying information retrieval with a goal of contributing to a research project.

Diana Brebeanu and Anna Li	URA	Fall 2023	Assisted with research on people's questions when evaluating the credibility of news. My PhD student directly supervised both students as part of an Early Researcher Experience Program (EREP) with me supervising my PhD student's supervision. The EREP program is part of the broader UR2PhD program that is sponsored by the Computing Research Association (CRA), and in addition to providing training in research to the undergraduates, it provided training to my PhD student on good supervision of students. I indirectly supervised via my PhD student.
Sunil Cotterill, Julia Fogerty, Aidan Malesich, Alen Miah, and Jose A. Montoya Cabrera	4th year MGTE design project	Spring 2023-Winter 2024	Regularly met and advised these MGTE 4A/4B students on their roommate matching project.
Nicolas Abou Sawan, Roman Olynyk, Rishega Selvaraj, Gurleen Kaur Sanghera	4th year MGTE design project	Spring 2022-Winter 2023	Regularly met and advised these MGTE 4A/4B students on their engineering program advisor project.
Sunil Cotterill	URA	Winter 2022	Sunil developed a web system for preference judging.
Andrea Lori Haw	URA	Fall 2021	Andrea and Charles wrote a new experimental implementation of CAL for use in investigating preference judgments.
Charles Yu	URA	Fall 2021	
Irene XiangYi Chen	URA	Spring 2021	Irene worked with my graduate students on developing topics for the TREC Health Misinformation Track as well as using machine learning to predict credibility of web URLs.
Jonathan Cho, Kanika Dutta, Brandon Leung, Julian Leung, Sidhant Vashist	4th year MGTE design project	Winter 2021	Supervised these 4B students with their FYDP after their supervisor unexpectedly passed away in Fall 2020.
Rui Zhang, Amanee Syed Abid Hussain, Hilary Masha, Haibei Wang	4th year MGTE design project	Spring 2019-Winter 2020	Regularly met and advised these MGTE 4A/4B students on their project: *Sleep Well, An Interactive Mobile Application to Support Cancer Patients*

Katie Masseo, Claire Pannolino, Rim Al-Hassan, Pooja Patel, Ayser Choudhury	4th year MGTE design project	Spring 2019-Winter 2020	Regularly met and advised these MGTE 4A/4B students on their "engineering quiz" project, which is used by Waterloo Engineering for recruitment: https://uw-engineering-quiz.herokuapp.com/
Dhruv Gupta, Thevany Narayanamoorthy, Sam Villaluz, Rhea Philip	4th year MGTE design project	Spring 2018-Winter 2019	Regularly met and advised these MGTE 4A/4B students on their price comparison project. Project was a $10K finalist in the Esch pitch competition and won the Sedra People's Choice Award ($3K), too.
Laura Dobson, Amy Leblond, Sarah Watts, Johnson Kan	4th year MGTE design project	Spring 2017-Winter 2018	Regularly met and advised these MGTE 4A/4B students on their teaching assistant allocation system. Project won **first place.**
Madeline Cowie, David Erakovic, Mojan Hamedanianpour, Matthew Watson	4th year MGTE design project	Spring 2016-Winter 2017	Regularly met and advised these MGTE 4A/4B students on their roommate fair share application.
Frances Pogacar	Research Assistant	Fall 2014, Spring 2015	In the fall, Frances (4A CS) met with me to design her study that will investigate the effect of poor search results on user behavior. In the spring, Frances began the implementation of the study.
Hannah Gautreau	URA	Spring 2014	Hannah (2B MGTE) worked with me on the early stages of an experiment to investigate the query reformulation process.
Kevin Choi	URI	Spring 2014	Kevin (1B MGTE) wrote software in support of my research program.
Evelyn Tchao, Casey Tjokroharjo, Ron Yu, Amy Zhang	4th year MGTE design project	Spring 2014-Winter 2015	Regularly met and advised this MGTE 4A/4B students on their neighborhood recommendation system.
Xiaoyu (Sunny) Guo and Andrew Toulis	URA	Fall 2013	Sunny (2A MGTE) and Andy (2A MGTE) studied patterns of mouse movement during relevance assessing.
Hassan Ahmed	URA	Fall 2013	Hassan (2A MGTE) is studying distributions of time spent searching.
Eugene Solodkin	Research Assistant	Spring 2013	Eugene (4B SE) investigated methods for near duplicate detection of web pages. Post-degree: Software Development Engineer, Amazon, Inc.

Lamin Ceesay, Jonathan Ong, Jiansen Wang, Chad Xu	4th year MGTE design project	Spring 2013-Winter 2014	Regularly met and advised these MGTE 4A/4B students on their project titled *Optimizing Franchise Site Expansion*.
Jared Evans and Brian (Jea Hwan) Kim	URA	Spring 2013	Jared (4A MGTE) and Brian (2B MGTE) worked with me to study reading speed while people search for relevant information.
Joe Mercer	URA	Fall 2012	Joe (2A MGTE) performed a qualitative study about user needs for music recommendations.
Ziyad Mir	URA	Spring 2012	Ziyad (3A SYDE) and I looked at developing an experimental methodology to collect speed-accuracy trade-off data for relevance judgments.
Korey Cheung, Matthew Guilherme, Dairai Nyabando, and Alphonse Vermeulen	4th year MGTE design project	Spring 2011-Winter 2012	Regularly met and advised these MGTE 4A/4B students on their project titled *Investment Visualization Tool*.
Melissa Deziel	URA	Fall 2011	Melissa (3B MGTE) worked with me on models of user behavior and helped with initial investigations of the application of the diffusion decision model to problems in information retrieval. Post-degree: Product Associate, MediaMath
Kenneth (Chi Wai) Ng	URA	Fall 2011	Ken (2B SYDE) investigated the use of the Hadoop framework on SHARCNET.
David Hu	URA	Spring 2011	David (2B SE) implemented Broder's near duplicate detection algorithm on Amazon's EC2 Map Reduce system to allow for the study of the effect of near duplicates on information retrieval performance.
Mack Duan	URA	Spring 2011	Mack (2B SE) built a web-based front end for two retrieval systems to support a future user study on interactive web retrieval.
Pativet Sathiensamrit and Joonha Shin	CBET Enterprise Co-op	Winter 2011	I mentored Pativet and Joonha (both 3B MGTE) during their entrepreneurial co-op.
Kevin Burt	URI/Co-op	Spring 2010	Kevin, Michael, and Chad (all 1B MGTE) assisted me with my research. Each worked
Michael Tatham	URI/Co-op	Spring 2010	

Chad Xu	Volunteer Undergrad. Research Asst.	Spring 2010	full time (35 hr. / week) and I met with them daily. Projects centered around the analysis of user behavior in information retrieval systems.
Johnathan Fisseha	URA	Spring 2009	Johnathan worked with me on a project about predicting the adoption of new user interaction mechanisms in search interfaces. Johnathan is a Management Engineering student.
Ching-Pei (Ben) Lin	URA, Independent Study	Spring 2009, Winter 2010	Ben and Ivan worked as a pair in S09. We read and discussed research papers together. Ben and Ivan contributed to my research for TREC 2009 (a yearly conference in my field). Ben came back, on his own, in W10 for independent study. Post-degree: Ben went to graduate school at UT-Austin in ECE, and Ivan when to graduate school at UW in ECE.
Ivan Patarroyo	URA	Spring 2009	
Jiao Yung (Justin) Lin	URA	Spring 2009	Justin's work centered around learning the advanced data processing technique known as Map Reduce and creating a prototype of its use with the Hadoop processing environment. Post-degree: Software Engineer, Google.

Thesis Examinations (PhD Committee or Master's Thesis Reader)

External Examinations

Year	Name	Degree	University
2014	Maryam Bashir	PhD	Northeastern University (Computer Science)
2014	Feza Baskaya	PhD	University of Tampre (Information Science)

Graduated Students

Year	Name	Degree	University
2023	Siqing Huo	MMath	University of Waterloo (Computer Science)
2023	Mahsa Seifikar	MMath	University of Waterloo (Computer Science)
2022	Shivangi Chopra	PhD	University of Waterloo (Management Sciences)
2022	Dahlia Shehata	MMath	University of Waterloo (Computer Science)
2021	Anmol Singh	MMath	University of Waterloo (Computer Science)
2021	Chengxi Luo	MMath	University of Waterloo (Computer Science)
2021	Yin Ki NG	MMath	University of Waterloo (Computer Science)
2020	Alexandra Vtyurina	PhD	University of Waterloo (Computer Science)
2020	Bahar Sarrafzadeh	PhD	University of Waterloo (Computer Science)
2018	Ayman Alzayat	PhD	University of Waterloo (Management Sciences)
2017	Shivangi Chopra	MASc	University of Waterloo (Management Sciences)
2016	Adam Roegiest	PhD	University of Waterloo (Computer Science)
2016	Shaikh Quader	MMath	University of Waterloo (Computer Science)
2016	Luchen Tan	PhD	University of Waterloo (Computer Science)
2015	Yuheng (Helen) Jiang	MASc	University of Waterloo (Management Sciences)
2014	Andrew Kane	PhD	University of Waterloo (Computer Science)
2014	Adriel Dean-Hall	MMath	University of Waterloo (Computer Science)
2013	Mehrnaz Moustafapour	MASc	University of Waterloo (Management Sciences)
2013	Gobaan Raveendran	MMath	University of Waterloo (Computer Science)
2013	Shahab Kamali	PhD	University of Waterloo (Computer Science)
2013	Younes Abouelnagah	MMath	University of Waterloo (Computer Science)
2013	Azin Ashkan	PhD	University of Waterloo (Computer Science)
2013	Maheedhar Kolla	PhD	University of Waterloo (Computer Science)
2012	John A. Akinyemi	PhD	University of Waterloo (Computer Science)
2012	Mona Mojdeh	PhD	University of Waterloo (Computer Science)
2012	Mohammed Alliheedi	MMath	University of Waterloo (Computer Science)
2012	Adam Roegiest	MMath	University of Waterloo (Computer Science)
2011	Hani K. Nikkhoo	MMath	University of Waterloo (Computer Science)
2010	Kelly Y. Itakura	PhD	University of Waterloo (Computer Science)
2008	Rana Alshaar	MASc	University of Waterloo (Management Sciences)
2008	David R. A. Henriques	MASc	University of Waterloo (Management Sciences)
2008	Kun Cen	MASc	University of Waterloo (Management Sciences)

Current Students (Thesis Proposal or Agreed to be Master's Thesis/Project Reader)

Year	Name	Degree	University
2024	Negar Arabzadeh	PhD	University of Waterloo (Computer Science)

Service

Committees and Other Roles

Department of Management Sciences

Period	Name and Role
Sept 2024-present	Department representative (1 of 2) on Conrad's new BCAT degree committee.
Nov 2023-present	Member of Department Space Committee
Sept 2023-present	Member of Department Graduate Committee
Sept 2023 to June 2024	Department Advisory Committee on Appointments (DACA) - Member
Sept 2023-present	PhD Chair designate for Management Sciences department.
September 2022-August 2023	On sabbatical.
Summer 2022	Member of Department Renaming Committee
Sept 2020 to May 2022 Sept. 2010 to June 2011 Nov. 2009 to April 2010	Department Advisory Committee on Appointments (DACA) - Member
Fall 2020 to August 2022	PhD Chair designate for Management Sciences department.
Fall 2015 to Spring 2020 (5 years)	Associate Chair, Undergraduate Studies - Please see the section "Curriculum Development" for improvements made to Management Engineering program. - I led our efforts for the 2019 CEAB Accreditation, which resulted in a successful renewal (June 2020) of the MGTE program for 6 years (the maximum possible).
Spring 2009 to Spring 2016 (includes two 6-month sabbaticals, and so only 4 years of service)	Examinations & Promotions Officer
Fall 2012 to Fall 2014	Undergraduate Studies Committee (DUGS) - Member
Fall 2012 and Fall 2010	Management Engineering 2A Class professor
Winter 2009 to Fall 2010	Computing Rep. – Facilitate computing in department

I have also served the department with various ad-hoc service. Selected examples:

- Restoration of internal TA assignment website (about a week of effort), 2022.
- Faculty representative at Fall Open House, 2014-2018.
- Faculty representative at Ontario University Fair, Fall 2015, 2016.
- Co-author of opinion paper on Management Engineering program for Engineers Canada, 2012.
- Faculty participant in Co-op stakeholder feedback meeting, May 7, 2012.
- Faculty representative at Engineering Student Awards dinner, Nov. 11, 2010, and Nov. 12, 2009.
- March Break meet and greet prospective students, March 17, 2009, and 2015-2019.

Faculty of Engineering

Period	Name and Role
Spring 2009 to Spring 2016	Examinations & Promotions Committee – Member
Fall 2015 to Spring 2020	Faculty Undergraduate Studies Committee (FUGS) – Member
Fall 2015 to Spring 2020	Faculty Operations Committee (FOPS) – Member
Winter 2016 to 2017	Engineering Faculty Committee – Member
Winter 2009 to Fall 2010	Computing Committee – Member

Professional Activities

Society Memberships and Positions Held

- Member, Association for Computing Machinery (ACM) and ACM Special Interest Group on Information Retrieval (SIGIR).
- SIGIR IRList Editor (mail list moderator), August 2009 to August 2012.

Area Chair / Senior Program Committee Member

- Area Chair (Evaluation of IR) or SPC, ACM Special Interest Group on Information Retrieval (SIGIR) Conference on Research and Development in Information Retrieval, 2014-2025.
- SPC, European Conference on Information Retrieval (ECIR), full and short papers, 2024.
- SPC, Conference Human Information Interaction and Retrieval (CHIIR), 2018, 2019.
- Area Chair, ACM Conference on Information and Knowledge Management (CIKM), 2014.

Editorial Boards

- Information Retrieval Journal, July 2014 to 2023.
- Foundations and Trends in Information Retrieval, February 2014 to January 2019.
- Information Processing and Management, April 2014 to August 2015.
- Book Review Editor, Information Retrieval Journal, November 2011 to June 2014.

Text Retrieval Conference (TREC) Track Co-Organizer

- TREC 2024, Lateral Reading Track
- TREC 2019, 2020, 2021, 2022 Decision Track / Health Misinformation Track
- TREC 2012 and 2013 CrowdSourcing Track.
- TREC 2010 Relevance Feedback Track.

Workshop Co-Organizer

- SIGIR 2013 Workshop On Modeling User Behavior for Information Retrieval Evaluation.
- CIKM 2013 Living Labs for Information Retrieval Evaluation Workshop.
- SIGIR 2010 Workshop on the Simulation of Interaction for Evaluation of Interactive Retrieval Systems.

Organizing Committee Member

- Co-Organizer, Doctoral Consortium, ACM SIGIR Conference on Human Information Interaction and Retrieval (CHIIR), 2016, 2022.
- Chair, WSDM 2019, Test of Time Award Committee.
- Co-Chair of SIGIR 2018 Tutorials.
- Co-Organizer of the 7th annual Symposium on Human-Computer Interaction and Information Retrieval (HCIR 2013).
- Co-Chair of SIGIR 2012 Posters and Demos, Fall 2011-August 2012.
- Publications Chair for the 32nd annual SIGIR Conference, 2009.

Program Committee Member

- ACM Special Interest Group on Information Retrieval (SIGIR) Conference, (fp=full papers, ws=workshops, sp=short paper, pp=posters, t=tutorials, dc=doctorial consortium, and d=demos), 2019 dc, 2018 dc/tut, 2017 dc, 2016 tut/dc, 2015 sp, 2014 dc/sp/t, 2013 fp/pp, 2012 fp, 2011 fp/pp/ws, 2010 fp/pp/d, 2009 fp/pp/d, 2008 fp/pp/d, 2007 pp.
- Conference Human Information Interaction and Retrieval (CHIIR), 2021.
- CHIIR, Best paper committee, 2020.

- WSDM (Web Search and Data Mining), 2020.
- EVIA (International Workshop on Evaluating Information Access), 2016, 2017.
- International Conference on the Theory of Information Retrieval (ICTIR), 2015, 2016.
- ACM Conference on Information and Knowledge Management (CIKM), 2011-2013.
- CIKM Doctoral Consortium, 2020.
- European Conference on IR (ECIR), 2008-2014, 2022, 2023.
- Symposium on Human-Computer Interaction and Information Retrieval (HCIR), 2013.
- Information Interaction in Context (IIiX), 2008, 2010, 2012, 2014.
- World Wide Web Conference (WWW), Behavioral and Personalization Track, 2011, 2013, lead reviewer: 2015. 2020.
- Asia Information Retrieval Symposium (AIRS), 2009, 2013.

Journal Reviewer

- ACM Transactions on Information Systems (TOIS), 2010, 2011, 2014, 2016, 2017, 2019-2021.
- Information Processing and Management (IPM), 2010, 2011, 2014-2019.
- Journal of Information Retrieval (IRJ), 2009, 2011.
- ACM Transactions on the Web (TWEB), 2013-2015
- Information Processing Letters, 2014.
- IEEE Knowledge and Data Engineering (KDE), 2009.
- IEEE Transactions on Evolutionary Computation, 1996, 2004.

Monograph Reviewer

- *Information Retrieval Evaluation*, Donna Harmon, Morgan & Claypool, 2011.

Reviewer

- International Conference on the Theory of Information Retrieval (ICTIR), Tutorials, 2013, 2016.
- Human-Computer Interaction and Information Retrieval (HCIR), 2011, 2012.
- SIGCHI, 2011, 2015.
- NAACL-HLT, 2009, 2010.
- World Wide Web Conference (WWW), Demos, 2010.

Workshop Program Committees

- SIGIR 2019, FACTS-IR (Fairness, Accountability, Confidentiality, Transparency, and Safety)
- CHIIR 2017, Supporting Complex Search Tasks Workshop (SCST).
- ECIR 2015 Workshop on Supporting Complex Search Tasks.
- SIGIR 2014 Workshop on Gathering Efficient Assessments of Relevance (GEAR).
- SIGIR 2011 EntertainMe Workshop.
- SIGIR 2011 CrowdSourcing for Information Retrieval Workshop.
- ECIR 2011 Workshop on Information Retrieval over Query Sessions.
- WSDM 2011 Workshop on Crowdsourcing for Search and Data Mining.
- SIGIR 2010 Workshop on Crowdsourcing for Search Evaluation.

Other

- Invited attendee of NIST TRUC-0 (Trustworthy AI Conference). Member of the Health Misinformation Roundtable. Oct 6, 2022.
- SIGIR 40th Anniversary Awards Committee, Member, 2017.
- Reviewer of grant proposals for various granting agencies (EU/Israel), 2014, 2015, 2018.

- SIGIR 2012 Doctoral Consortium Lunch non-student participant.
- Supplied dataset for TREC 2011 crowd source track.
- SIGIR conference student volunteer, 2006 and 2007.
- Developed and wrote the 2004 TREC HARD track's metadata guidelines.