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Experience

from 1/2019	Professor, Department of Information Science, College of Communication, Media, and Information, University of Colorado, Boulder. Department of Computer Science by courtesy.
from 8/2020	Faculty Fellow, Institute for Cognitive Science, University of Colorado, Boulder.
7/2019-6/2024	Chair, Department of Information Science, College of Communication, Media, and Information, University of Colorado, Boulder.
7/2011-12/2018	Professor, School of Computing, College of Computing and Digital Media, DePaul University.
8/2008-7/2009	Fulbright Scholar, School of Computer Science and Informatics, University College Dublin.
7/2002-6/2005	Associate Professor, School of Computer Science, Telecommunications, and Information Systems, DePaul University. With tenure from 7/2005-6/2011. Joint appointment in School of Cinema and Interactive Media from 7/2007-6/2011.
1/2001-6/2002	Associate Professor, Department of Information Systems and Decision Sciences, California State University, Fullerton.
6/2000-1/2001	Adjunct Assistant Professor, Department of Information and Computer Science, University of California, Irvine.
4/1999-5/2000	Specialist, Department of Information and Computer Science, University of California, Irvine.
8/1998-4/1999	Director of Software Development, Verb, Inc. (was Recommender, Inc.)
9/1996-7/1998	Research Scientist, Department of Computer Science, University of Chicago.
9/1993-9/1996	Visiting Assistant Professor, Department of Computer Science, University of Chicago.

Research Interests

Artificial intelligence, especially recommender systems and personalization, user modeling, data mining, and machine learning, including fairness-aware and multistakeholder approaches. Governance of algorithmic systems. Digital humanities, including bibliomining, social network analysis, and text mining.

Education

12/1993	PhD, Computer Science, Northwestern University
6/1990	MS, MPhil, Computer Science, Yale University
6/1986	BS with Distinction and Honors, Computer Science, Harvey Mudd College

SCHOLARSHIP

h-index (Google scholar): 72

Journal Articles

Ekstrand, M. D., Razi, A., Pera, M. S., **Burke, R.** & Wright, K. L. "Recommending With, Not For: Co-Designing Recommender Systems for Social Good". Under revision at *ACM Transactions on Recommender Systems*.

Burke, R., Admoavicius, G., Bogers, T., Di Noia, T., Kowald, D., Neidhardt, J., Özgobek, Ö., Pera, M. S., Tintarev, T. & Ziegler, J. "De-centering the (Traditional) User: Multistakeholder Evaluation of Recommender Systems". *International Journal of Human-Computer Studies*. To appear. Preprint at http://arxiv.org/abs/2501.05170.

Aird, A., Farastu, P., Sun, J., Štefancová, E., All, C., Voida, A., Mattei, N. & **Burke, R.** Dynamic Fairness-aware Recommendation Through Multi-agent Social Choice. *ACM Transactions on Recommender Systems*. 3(2), 1-35. 2024.

Bibal, A., Salem, N. M., Cardon, R., White, E. K., Acuña, D., **Burke, R.** & Hunter, L. RecSOI: Recommending Research Directions using Statements of Ignorance. *Journal of Biomedical Semantics*. 15, Article 2 (19 pages). 2024.

Ekstrand, M., Das, A., **Burke, R.** & F. Diaz. Fairness and Discrimination in Information Access. *Foundations and Trends in Information Retrieval*. 16(1-2), 1-177, 2022.

Mansoury, M., Abdollahpouri, H., Pechenizkiy, M., Mobasher, B. & **Burke R.** A Graph-based Approach for Mitigating Multi-sided Exposure Bias in Recommender Systems. *ACM Transactions on Information Systems*. Volume 40, Issue 2, Article 32, 31 pages, 2021.

Mansoury, M. & **Burke, R.** Flatter is Better: Percentile Transformations for Recommender Systems. *ACM Transactions on Intelligent Systems and Technology*. 12(2), Article 19, 16 pages, 2021.

Shanahan, J., **Burke, R.** & Lucic, A. Reading Chicago Reading: Quantitative Analysis of a Repeating Literary Program. *Digital Humanities Quarterly*. 14(2), 37 pages, 2020.

Abdollahpouri, H., Adomavicius, G., **Burke, R**., Guy, I., Jannach, D., Kamishima, T., Krasnodebski, J. & Pizzato, L. Multistakeholder Recommendation: Survey and Research Directions. *User Modeling and User-Adapted Interaction*. 30(1), 127-158, 2020.

Burke, V. & **Burke, R.** Powerlessness and Personalization. *International Journal of Applied Philosophy.* 33(2), 319-343, 2019.

☆ Malthouse, E., Hessary, Y., Ali Vakeel, K., **Burke, R.** & Morana Fudurić. An Algorithm for Allocating Sponsored Recommendations and Content: Unifying Programmatic Advertising and Recommender Systems. *Journal of Advertising*, 48(4), (14 pages), 2019. [Best paper of the year award.]

Sun, Z., Guo, Q., Yang, J., Fang, H., Guo, G., Zhang, J. and **Burke, R.** Research commentary on recommendations with side information: a survey and research directions. *Electronic Commerce Research and Applications*, 37 (29 pages). 2019.

Vahedian, F., **Burke, R.** & Mobasher, B. Multi-relational Recommendation in Heterogeneous Networks. *ACM Transactions on the Web*. 11(3): 15 (34 pages), 2017.

Gemmell, J., Schimoler, T., Mobasher, B. & **Burke, R.** Resource recommendation in social annotation systems: A linear-weighted hybrid approach. *Journal of Computer and Systems Science*. (JCSS) 78(4):1160-1174 (2012).

Mobasher, **B., Burke, R.**, Bhaumik, R. & Sandvig, JJ. Attacks and Remedies in Collaborative Recommendation. *IEEE Expert Systems*. 22(3) 56-63, 2007.

Williams, C., Mobasher, B, & **Burke, R.** Defending Recommender Systems: Detection of Profile Injection Attacks. *Service Oriented Computing and Applications*. 1(3), 157-170. 2007.

Mobasher, B., **Burke, R.**, Bhaumik, R. & Williams, C. Towards Trustworthy Recommender Systems: An Analysis of Attack Models and Algorithms. *ACM Transactions on Internet Technology*. 7(2), Article 23 (38 pages.) 2007.

Burke, R. Hybrid Recommender Systems: Survey and Experiments. *User Modeling and User Adapted Interaction*. 12(4), 331-370. 2002.

Burke, R. Interactive Critiquing for Catalog Navigation in E-Commerce. *Artificial Intelligence Review,* 18(3-4), 245-267. 2002.

Burke, R. Conceptual Indexing and Active Retrieval of Video for Interactive Learning Environments. *Knowledge-Based Systems*, 9(8), 491-499, 1996.

Burke, R. & Kass, A. Supporting Learning through Active Retrieval of Video Stories. *Expert Systems with Applications, 9*(3), 361-378. 1995.

Kass, A., **Burke, R.,** Blevis, E. & Williamson, M. Constructing learning environments for complex social skills. *Journal of the Learning Sciences 3*(4), 387-427. 1994.

Burke, R. Intelligent retrieval of video stories in a social simulation. *Journal of Educational Multimedia and Hypermedia*, 2(4), pages 381-392. 1993. Paper originally appeared in *Educational Multimedia and Hypermedia Annual 1993*, 91-98. AACE, 1993.

Blevis, E., Glasgow, J., Duncan, N. & **Burke, R.** The Life Analysis & Depreciation Integrated Exemplar System (LADIES). *International Journal of Expert Systems Research and Applications. 4*(2), 141-155, 1991.

Journal-equivalent Conference Proceedings

2025

Smith, J.J., Madaio, M., **Burke, R.** & Fiesler, C. Pragmatic Fairness: Evaluating ML Fairness Within the Constraints of Industry. In *ACM Conference on Fairness, Accountability and Transparency* (FAccT '25). To appear.

2024

☆ Smith, J.J., Satwani, A., **Burke, R.** & Fiesler, C. Recommend Me? Designing Fairness Metrics with Providers. In *ACM Conference on Fairness, Accountability and Transparency* (FAccT '24). pp. 2389-2399. 2024. [Best paper award.]

2023

Smith, J.J., Buhayh, A., Kathait, A., Ragothaman, P., Mattei, N., **Burke, R**. & Voida, A. The Many Faces of Fairness: Exploring the Institutional Logics of Multistakeholder Microlending Recommendation. In *ACM Conference on Fairness, Accountability and Transparency* (FAccT '23). pp. 1652-1663. 2023.

2021

Sonboli, N., Mansoury, M., Guo, Z., Kadekodi, S., Liu, W., Liu, Z., Schwartz, A. & **Burke, R**. librec-auto: A Tool for Recommender Systems Experimentation. In *30th ACM International Conference on Information and Knowledge Management (CIKM '21)*. Held online, October 2021. 4584-4593.

Abdollahpouri, H., Mansoury, M., **Burke, R**., Mobasher, B. & Malthouse, E. 2021. User-centered Evaluation of Popularity Bias in Recommender Systems. In *Proceedings of the 29th Conference on User Modeling and Personalization (UMAP '21)*. Held online, July 2021. 119-129.

Sonboli, N., Smith, J., Cabral Berenfus, F., **Burke, R.** & Fiesler, C. 2021. Fairness and Transparency in Recommendation: The Users' Perspective. In *Proceedings of the 29th Conference on User Modeling and Personalization (UMAP '21)*. Held online, July 2021. 274-279.

2020

Sonboli, N., **Burke, R.,** Liu, Z. & Masoud Mansoury. 2020. Fairness-aware Recommendation with librec-auto. In *Proceedings of the 14th ACM Conference on Recommender Systems (RecSys '20)*. ACM, New York, NY, USA, 594–596.

Abdollahpouri, H., Mansoury, M., **Burke, R.** & Mobasher, B. The Connection Between Popularity Bias, Calibration, and Fairness in Recommendation. In *Proceedings of the 14th ACM Conference on Recommender Systems (RecSys '20)*. ACM, New York, NY, USA, 726–731.

Lin, K., Sonboli, N., Mobasher, B. & **Burke, R**. Calibration in Collaborative Filtering Recommender Systems: a User-Centered Analysis. In *Proceedings of the 31st ACM Conference on Hypertext and Social Media*. ACM, New York, NY, USA, 197-206.

Mansoury, M., Abdollahpouri, H., Pechenizkiy, M., Mobasher, B. & **Burke, R.** FairMatch: A Graph-based Approach for Improving Aggregate Diversity in Recommender Systems. In *Proceedings of the 28th Conference on User Modeling and Personalization (UMAP '20)*. Genoa, Italy, 154-162.

Mansoury, M., Abdollahpouri, H., Pechenizkiy, M., Mobasher, B. & **Burke, R.** Feedback loop and bias amplification in recommender systems. In *Proceedings of the 29th ACM International Conference on Information and Knowledge Management (CIKM '20)*. ACM, New York, NY, USA, 2145-2148.

Sonboli, N., Eskandanian, F., **Burke, R.,** Liu, W. & Mobasher, B. Opportunistic multi-aspect fairness through personalized re-ranking. In *Proceedings of the 28th Conference on User Modeling and Personalization (UMAP '20)*. Genoa, Italy. July 2020.

Sánchez-Moreno, D., Moreno-García, M. N., Sonboli, N., Mobasher, B., and **Burke, R.** Using Social Tag Embedding in a Collaborative Filtering Approach for Recommender Systems. In *2020 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology* (WI-IAT'20).

2019

Liu, W., Guo, J., Sonboli, N., **Burke, R.** & Zhang, S. Personalized Fairness-aware Re-ranking for Microlending. In *Proceedings of the 13th ACM Conference on Recommender Systems (RecSys '19)*, 467-471, 2019.

Lucic, A., **Burke, R.,** & Shanahan, J. Unsupervised Clustering with Smoothing for Detecting Paratext Boundaries in Scanned Documents. In *2019 ACM/IEEE Joint Conference on Digital Libraries (JCDL)*, 53-56. IEEE, 2019.

2018

Burke, R., Sonboli, N. & Ordonez-Gauger, A. Balanced Neighborhoods for Multi-sided Fairness in Recommendation. In *Conference on Fairness, Accountability, and Transparency (FAT*)*. New York, 2018. Appeared as *Proceedings of Machine Learning Research* 81:1–13, 2018.

Mansoury, M., **Burke, R.,** Ordonez-Gauger, A. & Sepulveda, X. Automating recommender systems experimentation with librec-auto. In *Proceedings of the 12th ACM Conference on Recommender Systems (RecSys '18)*. ACM, New York, NY, USA, 500-501. 2018.

Sánchez-Moreno, D., Moreno-García, M.N., Sonboli, N., Mobasher, B., **Burke, R.** Inferring User Expertise from Social Tagging in Music Recommender Systems for Streaming Services. In: de Cos Juez F. et al. (eds) *Hybrid Artificial Intelligent Systems. HAIS 2018*. Lecture Notes in Computer Science, vol 10870. Springer, Cham. 2018

Sürer, Ö., **Burke, R.** & Malthouse E. Multistakeholder Recommendation with Provider Constraints. In *Proceedings of the 12th ACM Conference on Recommender Systems (RecSys '18)*, ACM, New York, NY, USA, 54-62. 2018.

2017

Abdollahpouri, H., **Burke, R.** & Mobasher, B. Controlling Popularity Bias in Learning-to-Rank Recommendation. In *Proceedings of the 11th ACM Conference on Recommender Systems (RecSys '17)*, 5 pages. Como, Italy. August 2017.

Abdollahpouri, H., **Burke, R.** & Mobasher, B. Recommender Systems as Multistakeholder Environments. In *Proceedings of the 25th Conference on User Modeling and Personalization (UMAP '17)*. Bratislava, Slovakia. June 2017.

Burke, R., Lucic, A., & Shanahan, J. Circulation Modeling of Library Book Promotions. In *2017 ACM/IEEE Joint Conference on Digital Libraries (JCDL'17)*, pp. 1-2. IEEE.

Eskandanian, F., Mobasher, B. & **Burke, R**. A Clustering Approach for Personalizing Diversity in Collaborative Recommender Systems. In *Proceedings of the 25th Conference on User Modeling and Personalization (UMAP '17)*. Bratislava, Slovakia. June 2017.

Vahedian, F., **Burke, R.** & Mobasher, B. Weighted Random Walk Sampling for Multi-Relational Recommendation. In *Proceedings of the 25th Conference on User Modeling and Personalization (UMAP '17)*. Bratislava, Slovakia. June 2017.

2016

Eskandanian, F., Mobasher, B.,& **Burke, R.** User Segmentation for Controlling Recommendation Diversity. In *Poster Proceedings of the 10th ACM Conference on Recommender Systems*. 2016. http://ceur-ws.org/Vol-1688/paper-24.pdf, 2 pages.

Vahedian, F., **Burke, R.,** & Mobasher, B. Weighted Random Walks for Meta-Path Expansion in Heterogeneous Networks. In *Poster Proceedings of the 10th ACM Conference on Recommender Systems*. 2016. http://ceur-ws.org/Vol-1688/paper-11.pdf, 2 pages.

Vahedian, F., **Burke, R.,** & Mobasher, B. Meta-Path Selection for Extended Multi-Relational Matrix Factorization. In *Proceedings of the 29th International Florida AI Research Symposium (FLAIRS '16)*, pp. 566-571.

Zheng, Y, Mobasher, B., & **Burke, R.** User-Oriented Context Suggestion. In *Proceedings of the 24th Conference on User Modeling and Personalization (UMAP '16)*, pp. 249-258

2015

Aghdam, M. H., Hariri, N., Mobasher, B., & **Burke, R.** Adapting Recommendations to Contextual Changes Using Hierarchical Hidden Markov Models. In *Proceedings of the 9th ACM Conference on Recommender Systems (RecSys '15)*, pp. 241-244.

Hariri, N., Mobasher, B., & **Burke, R.** Adapting to User Preference Changes in Interactive Recommendation. In *Proceedings of the 24th International Joint Conference on Artificial Intelligence (IJCAI '15)*, pp. 4268-4274

Vahedian, F., **Burke, R.** & Mobasher, B. Network-Based Extension of Multi-Relational Factorization Models. In *Poster Proceedings of the 9th ACM Conference on Recommender Systems*: ceur-ws.org/Vol-1441/.

Zheng, Y., Mobasher, B., & **Burke, R.** Integrating Context Similarity with Sparse Linear Recommendation Model. In *Proceedings of the 23th Conference on User Modeling and Personalization (UMAP '15)*, pp. 370-376.

Zheng, Y., Mobasher, B., & **Burke, R.** Similarity-Based Context-Aware Recommendation. *Web Information Systems Engineering (WISE '15)*, pp. 431-447

Zheng, Y., Mobasher, B., & **Burke, R.** Similarity-based Contextual SLIM Recommendation. In *Proceedings of the 23nd Conference on User Modeling, Adaptation and Personalization (UMAP 2015).*

2014

Zheng, Y., Mobasher, B., & **Burke, R.** Deviation-Based Contextual SLIM Recommenders. In *Proceedings of the 23rd ACM International Conference on Information and Knowledge Management (CIKM '14)*, pp. 271-280.

Gemmell, J., Mobasher, B. & **Burke, R.** Resource Recommendation in Social Annotation Systems Based on User Partitioning. In Proceedings of the 15th International Conference on Electronic Commerce and Web Technologies, EC-Web 2014. pp. 101-112

☆ Hariri, N., Mobasher, B. & **Burke, R.** Context adaptation in interactive recommender systems. In *Proceedings of the 8th ACM Conference on Recommender Systems (RecSys '14).* pp. 41-48. (Best Paper Honorable Mention)

Zheng, Y., Mobasher, B. & **Burke, R.** CSLIM: contextual SLIM recommendation algorithms. In Proceedings of the 8th ACM Conference on Recommender Systems (RecSys '14). pp. 301-304

Zheng, Y., **Burke, R.** & Mobasher, B. Splitting approaches for context-aware recommendation: an empirical study. In *Proceedings of the Symposium on Applied Computing 2014.* pp. 274-279.

Burke, R., Vahedian, F. &, Mobasher, B. Hybrid Recommendation in Heterogeneous Networks. In *Proceedings of the 22nd Conference on User Modeling, Adaptation and Personalization (UMAP '14).* pp. 49-60.

Gemmell, J., Mobasher, B. & **Burke, R.** User Partitioning Hybrid for Tag Recommendation. In *Proceedings of the 22nd Conference on User Modeling, Adaptation and Personalization (UMAP '14).* pp. 74-85.

2013

Hariri, N., Mobasher, B., & **Burke, R.** Query-Driven Context-Aware Recommendation. In Proceedings of the 7th ACM Conference on Recommender Systems (RecSys '13), ACM.

Putnam, C., Cheng, J., Rusch, D., Berthiaume, A., & **Burke, R.** Supporting Therapists In Motion-Based Gaming For Brain Injury Rehabilitation. In *Proceedings of the 2013 annual conference extended abstracts on Human factors in computing systems (CHI EA '13)*, Paris, France. [Acceptance rate: 45%]

Zheng, Y., **Burke, R.** & Mobasher, B. Recommendation with Differential Context Weighting. In *Proceedings of the 21st Conference on User Modeling, Adaptation and Personalization (UMAP 2013).* Rome, Italy.

2012

Hariri, N., Mobasher, B., & **Burke, R.** Context-aware music recommendation based on latent-topic sequential patterns. In *Proceedings of the Sixth ACM conference on Recommender systems (RecSys '12)*. ACM, New York, NY, USA, 131-138.

Zheng, Y., **Burke, R.** & Mobasher, B. Differential Context Relaxation for Context-aware Travel Recommendation. *Proceedings of the 13th International Conference on Electronic Commerce and Web Technologies, EC-Web 2012,* Vienna, Austria, August 2012.

2011

Gemmell, J., Schimoler, T., Mobasher, B. & **Burke, R.** Recommendation by Example in Social Annotation Systems. EC-Web 2011: 209-220.

Guzzi, F., Ricci, F. & **Burke, R.** Interactive multi-party critiquing for group recommendation. In *Proceedings of the 5th ACM International Conference on Recommender Systems (RecSys '11):* 265-268.

Gemmell, J., Schimoler, T., Mobasher, B. & **Burke, R.** Tag-Based Resource Recommendation in Social Annotation Applications. In *Proceedings of User Modeling, Adaption and Personalization 2011*, pp. 111-122. Girona, Spain.

2010

Gemmell, J., Mobasher, B., Schimoler, T., & **Burke, R.** Hybrid Tag Recommendation for Social Annotation Systems. In *Proceedings of the 19th ACM International Conference on Information and Knowledge Management (CIKM '10), pp. 829-838* .Toronto, Canada. October 2010

Burke, R. Evaluating the Dynamic Properties of Recommendation Algorithms. In *Proceedings of the 4th ACM International Conference on Recommender Systems (RecSys '10)*, pp. 225-228. Barcelona, Spain. September 2010.

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Ramezani, M., Sandvig, J. J., Schimoler, T., Gemmell, J., Mobasher, B. & **Burke, R.** Evaluating the Impact of Attacks in Collaborative Tagging Environments. *Proceedings of the 1st International Conference on Social Computing*, pp. 136 –143. Vancouver, Canada. August 2009.

Felfernig, A. & **Burke, R.** 2008. Constraint-based recommender systems: technologies and research issues. In *Proceedings of the 10th International Conference on Electronic Commerce*, pp. 1-10. Innsbruck, Austria. August 2008.

Shepitsen, A., Gemmell, J., Mobasher, B. & **Burke, R.** Personalized Recommendation in Collaborative Tagging Systems Using Hierarchical Clustering. In *Proceedings of the 2nd ACM International Conference on Recommender Systems (RecSys'08)*, pp. 259-266. Lausanne, Switzerland. October 2008.

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Sandvig, J.J., Mobasher, B., & **Burke, R.** Impact of Relevance Measures on the Robustness and Accuracy of Collaborative Filtering. *Proceedings of the 8th International Conference on Electronic Commerce and Web Technologies, EC-Web 2007*, pp. 99-108. Regensburg, Germany, September 2007.

Sandvig, J.J., Mobasher, B, & **Burke, R.** Robustness of Collaborative Recommendation Based On Association Rule Mining. *Proceedings of the 2007 ACM Conference on Recommender Systems*, pp. 105-112. Minneapolis, October, 2007.

Settle, A., **Burke, R.,** & Dettori, L. Game Design as a Writing Course in the Liberal Arts. In *Proceedings of the 2007 International Conference on Frontiers in Education: Computer Science & Computer Engineering (FECS '07),* pp. 176-180. CSREA Press. 2007.

Sieg, A., Mobasher, B., & **Burke, R.** Representing Context in Web Search with Ontological User Profiles. In *Proceedings of the Sixth International and Interdisciplinary Conference on Modeling and Using Context*, pp. 439-452. Roskilde University, Denmark, August 2007.

Sieg, A., Mobasher, B., & **Burke, R.** Web Search Personalization with Ontological User Profiles. *Proceedings of the 16th ACM Conference on Information and Knowledge Management (CIKM 2007)*, pp. 525-534. Lisboa, Portugal, November 2007.

Burke, R., Mobasher, B., Williams, C. & Bhaumik R. Classification Features for Attack Detection in Collaborative Recommender Systems. In *Proceedings of the ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD'06)*, pp. 542-547. Philadelphia, August 2006.

Burke, R., Mobasher, B., Williams, C. & Bhaumik, R. Detecting Profile Injection Attacks in Collaborative Recommender Systems. In *Proceedings of the 8th IEEE Conference on E-Commerce Technology (CEC' 06)*, pp. 23-31. San Francisco, California, June 2006.

Mobasher, B., **Burke, R.,** Sandvig, JJ. Model-Based Collaborative Filtering as a Defense Against Profile Injection Attacks. *In Proceedings of the 21st National Conference on Artificial Intelligence (AAAI'06)*, pp. 1388-1393. Boston, Massachusetts, August 2006.

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Sieg, A., Mobasher, B., **Burke, R.,** Prabu, G. & Lytinen, S. "Representing User Information Context with Ontologies". In *Proceedings of HCI International 2005 Conference*, Las Vegas, Nevada, July 2005.

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Sieg, A., Mobasher, B., & **Burke, R.** Inferring User's Information Context: Integrating User Profiles and Concept Hierarchies. In *Proceedings of the 2004 Meeting of the International Federation of Classification Societies*, Chicago, IL, July 2004.

Sieg, A., Mobasher, B., Lytinen, S. & **Burke, R.** Using Concept Hierarchies to Enhance User Queries in Web-based Information Retrieval. In *Proceedings of the IASTED International Conference on Artificial Intelligence and Applications (AIA 2004)*. page 153-159. Innsbruck, Austria, 2004.

Sieg, A., Mobasher, B., Lytinen, S. & **Burke, R.** Concept based query enhancement in the ARCH search agent. In *Proceedings of the International Conference on Internet Computing*. Las Vegas, NV. August 2003.

Burke, R. Ranking Algorithms for Costly Similarity Metrics. In D. Aha, I. Watson and Q. Yang (eds.), *Case-Based Reasoning Research and Development (4th International Conference on Case-Based Reasoning)*, pages 105-117. New York: Springer Verlag, 2001.

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Kulyukin, V., Hammond, K, & **Burke, R.** Answering Questions for an Organization Online. In *Proceedings of the 15th National Conference on Artificial Intelligence*, pages 532-537, AAAI, 1998.

Burke, R., Hammond, K. & Cooper, E. Knowledge-based navigation of complex information spaces. In *Proceedings of the 13th National Conference on Artificial Intelligence,* pages 462-468, AAAI, 1996.

Hammond, K., **Burke, R.,** Martin, C. & Lytinen, S. FAQ Finder: A Case-Based Approach to Knowledge Navigation. In *Proceedings of the 11th Conference on Artificial Intelligence for Applications*. Los Angeles, CA: IEEE Computer Society Press, 1995.

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Burke, R. & Kass, A. Integrating case presentation and simulation-based learning-by-doing. In *Proceedings of the 14th Conference of the Cognitive Science Society*, pages 629-634. Hillsdale, NJ: Lawrence Erlbaum Associates, 1992.

Other Refereed Conference and Workshop Proceedings

2025

Buhayh, A., McKinnie, E., Canel, C. & **Burke, R.** Simulating the Algorithm Store: Multistakeholder Impacts of Recommender Choice. In *Workshop on Fairness in User Modeling, Adaptation and Personalization (FairUMAP),* 2025. To appear.

2024

Aird, A., Štefancová, E., All, C., Voida, A., Homola, M., Mattei, N. & **Burke. R.** Social Choice for Heterogeneous Fairness in Recommendation. In *Proceedings of the 18th ACM Conference on Recommender Systems: Late-Breaking Results,* pages 1096-1101. 2024..

Buhayh, A., McKinnie, E. & **Burke, R.** Decoupled Recommender Systems: Exploring Alternative Recommender Ecosystem Designs. In *First International Workshop on Recommender Systems for Sustainability and Social Good*, pages 5-18. Springer Cham, 2025.

Štefancová, E., All, C., Paup, J., Homola, M., Mattei, N. & **Burke. R.** Data Generation via Latent Factor Simulation for Fairness-aware Re-ranking**.** In *FAccTRec Workshop on Responsible Recommendation,* 2024. 5 pages. arXiv preprint arXiv:2409.14078

Varasteh, M., McKinnie, E., Aird, A., Acuña, D. & **Burke, R.** Comparative Explanations for Recommendation: Research Directions. In *IntRS 2024: 11th Joint Workshop on Interfaces and Human Decision Making for Recommender Systems,* 2024. 13 pages. https://ceur-ws.org/Vol-3815/paper1.pdf.

2023

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Refereed Conference Presentations

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Burke, R. and Shanahan, J. "Reading Chicago Reading." Presentation at the Library Circulation Histories Workshop. Held online. April-May 2021.

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Burke, R. "Introduction to Game Design." Presentation at Game Developers' Conference Education Summit, March 5, 2007.

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Burke, R. Similarity and Utility in Case Retrieval. Poster presented at the DARPA Case-Based Reasoning Workshop II, Washington, D.C., May 1991.

Invited Presentations and Colloquia

Tutorial (with Joseph Konstan and Michael Ekstrand): "Conducting Recommender Systems User Studies Using POPROX." Presented at the 2024 ACM Conference on Recommender Systems.

Invited presentation: "Providers as Collaborators in Recommendation". Workshop on Collaborating with AI. Vienna University of Technology. September 9, 2024.

Invited presentation (with Sole Pera): "Personalized Information Access: Ideology and Reality". Presented at the 2024 Digital Humanism Summer School. Vienna University of Technology. September 5, 2024.

Invited Talk: "Democratizing recommendation ecosystems: algorithms, stakeholders and interactions". Presented at the Recommendation Ecosystems Workshop: Modeling, Optimization, and Incentive Design (EcoSys 2024). Held at AAAI 2024.

Invited Panelist: "Generating explanations: How to balance user needs and organizational objectives when explaining recommendations?". Presented at 2nd Workshop on Measuring the Quality of Explanations. Held online associated with RecSys 2023.

Invited Speaker: "Multistakeholder Recommendation" and "What's Next for Recommender Systems". 3rd Recommender Systems Summer School. Copenhagen, Denmark. June 2023.

Invited Poster: Dynamic fairness-aware recommendation through multi-agent social choice. Presented at 2023 Netflix Workshop on Personalization, Recommendation and Search. Los Gatos, CA. June 9, 2023.

Invited Presentation: "Machine Learning Fairness through Social Choice". Presented at the Center for Cyber Security/AI Research, University of North Dakota. April 27, 2023. Also presented at Brandeis University, Department of Computer Science, March 9, 2023.

Keynote Speaker: "Tourism Recommendation: Re-Thinking the User". Presented at ACM RecSys Workshop on Recommenders in Tourism, Seattle, WA. September 22, 2022.

Invited Presentation: "Fair Ranking of Job Candidates with CARMA". Society for Industrial and Organizational Psychology, Machine Learning Competition, April 30, 2021.

Invited Presentation: "User Aspects of Fairness-Aware Recommendation". Institute for Cognitive Science, University of Colorado, Boulder. February 5, 2021. Also presented to the NSF National AI Institute for Student-AI Teaming, April 30, 2021.

Invited presentation: "Fairness-Aware Recommender Systems". Dagstuhl Seminar 21231: Transparency by Design. Held online. May 8, 2021.

Invited Presentation: "Machine Learning Fairness through Social Choice: (Something like) a Research Agenda". Department of Information Science, University of Colorado, Boulder. October 2020. Also presented at Texas A&M University. April 12, 2021, and at Accenture Research Labs, San Francisco, May 27, 2021, and at the Vector Institute, Toronto, Canada, December 3, 2021.

Invited Speaker: "Multistakeholder Recommender Systems". Senior scholar presentation. 2020 ACM Conference on Recommender Systems.

Keynote Speaker: "Fairness is not a number: Methodological implications of the politics of fairness-aware systems". International Symposium on Methodologies for Intelligent Systems. September 2020.

Tutorial: (with Alex Beutel, Ed H. Chi, and Fernando Diaz) "Responsible Recommendation and Search Systems", Presented at the 2020 World Wide Web conference. Online presentation, April 2020.

Tutorial: (with Masoud Mansoury and Nasim Sonboli) "Experimentation with fairness-aware recommendation using librec-auto", Presented at the 2020 ACM Conference on Fairness, Accountability and Transparency. Barcelona, Spain. January 2020.

Tutorial: (with Michael Ekstrand and Fernando Diaz) "Fairness and Discrimination in Recommendation and Retrieval", Presented at the 13th ACM Conference on Recommender Systems. Copenhagen, Denmark. September 2019.

Invited Speaker: "Multistakeholder Recommendation". 2nd Recommender Systems Summer School. Gothenburg, Sweden. September 2019.

Invited Speaker: "Provider Fairness in Philanthropic Recommendation", Google Next Generation Recommender Systems Workshop. July 2019.

Keynote Speaker: "What's Hard about Fairness in Recommendation", Workshop on Fairness in User Modeling, Adaptation and Personalization. July 2018. Also presented at Department of Information Science, University of Colorado, Boulder. March 2019.

Invited Presentation: "Adventures in Multistakeholder Recommendation", Department of Information Science, University of Colorado, Boulder. April 2018.

Workshop: "Social Network Analysis with Gephi". Studio CHI workshop series, DePaul University, April 2018.

Tutorial: (with Ana Lučič and John Shanahan) "Mining Diverse Texts for Location and Sentiment". Workshop held at the Chicago Colloquium on Digital Humanities and Computer Science. Illinois Institute of Technology, November 2017.

Invited Presentation: "Reading Chicago Reading: Update", Social Science Research Center Research Show and Tell. DePaul University, June 1, 2017.

Workshop with John Shanahan and Ana Lučič, "Text Analysis Tools for Early Modern Literature: The Case of Margaret Cavendish", Research Methods Workshop for Early-Career Graduate Students, Center for Renaissance Studies, Newberry Library, March 2017.

Colloquium: "Reading Chicago Reading: Modeling Texts and Readers in a Public Library System", Social Science Research Center Colloquium, October 2016.

Colloquium: "Recommendation for Multiple Stakeholders", School of Computing Research Colloquium, DePaul University, September 2016.

Invited Lecturer, "Computational Advertising". Technical University of Graz, December 2015.

Keynote Speaker. "Recommendation in Heterogenenous Networks". IJCAI Workshop on Heterogeneous Information Network Analysis (HINA '15). July 2015.

Invited Lecturer. "Hybrid Recommender Systems." 11th Estonian Summer School on Computer and Systems Science, August 2012.

Invited Presentation: "Data Mining and Machine Learning in Open Adversarial Environments." First Annual Chicago Data Mining Symposium, October 2010.

Colloquium: "Data Mining and Machine Learning in Adversarial Environments." School of Computing Research Colloquium, DePaul University, October 2010.

Invited Lecturer: "Directions in Social Computing" Free University of Bolzano/Bozen, June 2010.

Invited Lecturer: "Recommender Systems" Technical University of Graz, May 2009 and June 2010.

Invited Seminar, "Robust Recommender Systems." Presented at Technical University of Graz, Telefonica Research and Development, University of Warwick, University of Southampton, University College Cork, University College Dublin, Robert Gordon University, Free University of Bolzano/Bozen. Spring 2009.

Tutorial, "Robust Recommendation." Presented at the 2nd ACM International Conference on Recommender Systems (RecSys'08), Lausanne, Switzerland, October 2008.

Colloquium: "Learning in Public: The Challenge of Autonomy for Machine Learning". University College Dublin. November 2008.

Keynote Speaker, "Teaching Computer Game Development: The DePaul Experience." Symposium on Emerging Technologies 2007. Metropolitan State University, St. Paul, Minnesota, October 2007.

Keynote Speaker, "Future Directions in Recommender Systems Research." Workshop on Recommender Systems. Held at the 17th European Conference on Artificial Intelligence. Riva del Garda, Italy, August 2006.

Keynote Speaker, "Recommender Systems and User Modeling," Workshop on Advances in Recommender Systems. Held at the 8th Biennial Israeli Symposium on the Foundations of AI. Haifa, Israel, June 2005.

Invited Panelist. "Commercial Applications of Adaptive Hypermedia." Third International Conference on Adaptive Hypermedia. August 2004.

Invited speaker. "Mixed-Initiative Case-Based Reasoning." Workshop held at the 6th European Conference on Case-Based Reasoning. Aberdeen, Scotland. September 2002.

Invited Panelist. "Case-Based Reasoning in E-Commerce." Workshop held at the 4th International Conference on Case-Based Reasoning. Vancouver, Canada. July/August 2001.

Non-reviewed Publications

Burke, R. *Hybrid Recommender Systems: A Comparative Study*. CTI Technical Report 06-012. 2006.

Burke, R. D., Hammond, K. J., Kulyukin, V. A., Lytinen, S. L., Tomuro, N. & Schoenberg, S. *Question Answering from Frequently-Asked Question Files: Experiences with the FAQ Finder System*. University of Chicago Department of Computer Science. Technical. Report TR-97-05. Chicago, IL, 1997.

Burke, R. & Kass, A. *Interest-Focused Tutoring: A Tractable Approach to Modeling in Intelligent Tutoring Systems*. University of Chicago Department of Computer Science. Technical Report TR-96-08. Chicago, IL, 1996.

Burke, R. (editor) *AI Applications in Knowledge Navigation and Retrieval*. AAAI Technical Report FS-95-03. Menlo Park, CA: AAAI, 1995.

Burke, R. *Representation, Storage and Retrieval of Tutorial Stories in a Social Simulation*. PhD Thesis, Northwestern University, 1993. Issued as Technical Report #50, Institute for the Learning Sciences, 1993.

Schank, R., Fano, A., Jona, M., Bell, B., Allender, L., Birnbaum, L., **Burke, R.,** Cleave, J., Ferguson, R., Foster, D., Goldstein, E., Guralnick, D., Kass, A. and Leone, M. *The Design of Goal-Based Scenarios*. Technical Report #39. Evanston, IL: Institute for the Learning Sciences, 1993.

Kass, A., **Burke, R.,** Blevis, E. & Williamson, M. *The GuSS Project: Integrating Instruction and Practice through Guided Social Simulation*. Technical Report #34. Evanston, IL: Institute for the Learning Sciences, 1992.

Schank, R., Osgood, R., Brand, M., **Burke, R.,** Domeshek, E., Edelson, D., Ferguson, W., Freed, M., Jona, K., Krulwich, B., Ohmaye, E. & Pryor, L. *A Content Theory of Memory Indexing*. Technical Report #2. Evanston, IL: Institute for the Learning Sciences, 1990.

Other Research Products

Sonboli, N., Aird, A., & **Burke, R. D.** (2022). Microlending 2017 Data Set [Data set]. University of Colorado Boulder. https://doi.org/10.25810/PGJK-RR19

Grants and other Recognition

External

6/2024	Best paper award for Smith, J.J., Satwani, A., Burke, R. & Fiesler, C. Recommend Me? Designing Fairness Metrics with Providers. In ACM Conference on Fairness, Accountability and Transparency (FAccT '24). pp. 2389-2399. 2024.
12/2023	Senior personnel with Ana Lučić (PI), J. Stephen Downie, Amy Kirchhoff, Glen Layne-Worthey, Peter Organisciak, and John Shanahan. Automated Peritext Detection in Fiction and Non-Fiction Works. National Endowment for the Humanities, Digital Humanities Advancement Grant, Level I, $48,075
5/2023	Co-principal Investigator with Joseph Konstan, Daniel Kluver, Michael Ekstrand, Bart Knijnenburg. National Science Foundation. A Research News Recommender Infrastructure with Live Users for Algorithm and Interface Experimentation. $1,400,000.
8/2022	Co-principal Investigator with Jane Garrity, David Glimp, Vilja Hulden, Nathan Pieplow, Eric Vance, Brett Melbourne, and Rachel Deagman-Simonetta. National Endowment for the Humanities, Humanities Connections, "Integrating Humanities and Data Science Education at the University of Colorado Boulder". $150,000.
10/2021	Principal Investigator with Amy Voida, Nicholas Mattei (Tulane University) and Pradeep Ragothaman (Kiva Microloans). National Science Foundation, Information and Intelligent Systems Program, "Fair recommendation through social choice". #2107577. $938,381.
4/2021	Co-principal Investigator with Casey Fiesler and Eric Wustrow. National Science Foundation, Secure and Trustworthy Cyberspace, "Integrating Cybersecurity into Artificial Intelligence Education" #2115028. 5/1/2021 – 4/30/2023. $297,712.
8/2020	Principal Investigator. National Science Foundation, Information and Intelligent Systems Program, REU Supplement for Award #1911025. 9/2020-9/2022. $8,000.
3/2020	Best paper of 2019 award for Malthouse, et al. An Algorithm for Allocating Sponsored Recommendations and Content: Unifying Programmatic Advertising and Recommender Systems. *Journal of Advertising*.
10/2019	Principal Investigator. National Science Foundation, Information and Intelligent Systems Program, "Realizing Fairness in Recommender Systems: Intersectionality, Tools, Explanation" #1911025, 10/2019-9/2022. $497,900.

8/2018	Principal Investigator with John Shanahan and Ana Lucic. Lyrasis Foundation. "Data-Intensive Tools for Modeling and Visualizing Mass Reading" 8/2018-7/2019. $24,352.
8/2017	Principal Investigator with John Shanahan and Ana Lucic. HathiTrust Research Center, Advanced Collaborative Support Grant. "Computational Support for Reading Chicago Reading". August 2017 – December 2017. In-kind.
6/2016	Co-principal Investigator with John Shanahan, Megan Bernal, and Antonio Ceraso. National Endowment for the Humanities, Digital Humanities Start-up Grant. "Reading Chicago Reading". June 2016–December 2017. $75,000.
9/2014	Principal Investigator with Bamshad Mobasher, National Science Foundation, Information Integration and Informatics Program "Multi-Dimensional Recommendation in Complex Heterogeneous Networks." #1423368, September 2014-September 2017. $499, 884.
8/2008	Fulbright Scholar, Ireland. "Autonomic Open Adaptive Systems." US-Irish Fulbright Commission and University College Dublin. August 2008-July 2009.
9/2004	Principal Investigator with Bamshad Mobasher, National Science Foundation CyberTrust Program "Secure Personalization: Building Trustworthy Recommender Systems". #0430303. September 2004-September 2007. $300,000. No-cost extension approved through 8/30/2008.
2/2000	Principal Investigator, University of California Digital Media Innovation Program with FileNet Corporation, "Task-based Analogical Retrieval in DONNA" #D99-14. February 2000 – February 2001. Co-principal investigator Michael Pazzani. $122,542
10/1997	National Science Foundation, Major Research Instrumentation grant, "Acquisition of Computational Resources for the Development of an Intelligent Information Laboratory" #CDA-9724286. Co-principal investigator with Kristian J. Hammond, Michael Swain, and Theresa Gaasterland, October 1997 — September 2000. $549,452
3/1997	Principal Investigator for Wasabi, Inc. National Science Foundation "SBIR Phase II" #DMI-9531395. March 1997 – September 1999. $297,800

Internal

7/2024	Discovery Learning Apprenticeship Program, "Simulating Recommender System Architectures", College of Engineering and Applied Science, CU Boulder.
5/2024	Outstanding Faculty Member, Department of Information Science, CU Boulder.
3/2024	Research and Innovation Office (RIO), Seed Grant, "Journalist / EDitorial Integration for News Recommendation (JEDI News)". Principal investigator with Patrick Ferrucci and Amy Voida. June 2024 – August 2025. $49,960.
9/2023	Undergraduate Research Opportunities Program, "Open and community-governed social media recommendation", Special Undergraduate Enrichment Programs, CU Boulder.
8/2021	Outstanding Mentor, College of Engineering and Applied Science, CU Boulder.
8/2020	Discovery Learning Apprenticeship Program, "Social choice for multi-dimensional fairness in recommendation", College of Engineering and Applied Science, CU Boulder.
6/2020	Undergraduate Research Opportunities Program, "Multi-dimensional fairness in recommender systems", Special Undergraduate Enrichment Programs, CU Boulder
8/2019	Discovery Learning Apprenticeship Program, "Computational tools for reproducible recommender systems experiments", College of Engineering and Applied Science, CU Boulder.
6/2019	Undergraduate Research Opportunities Program, "Algorithmic Fairness in Recommender Systems: Tools and Metrics", Special Undergraduate Enrichment Programs, CU Boulder

6/2019   Summer Program for Undergraduate Research, "Fairness-aware recommendations for microlending", College of Engineering and Applied Science, CU Boulder.

Internal (DePaul University)

3/2017   Provost's Academic Initiative Grant, "Graduate assistant for Reading Chicago Reading". University Research Council, DePaul University.

6/2016   Competitive Instructional Grant, "Hardware Support for Collaborative Instruction". Quality of Instruction Council, DePaul University.

6/2015   Competitive Collaborative Research Grant, "Reading Chicago Reading". Quality of Research Council, DePaul University.

11/2013   Competitive Instructional Grant, "Software Support for Advanced Game Programming Courses." Quality of Instruction Council, DePaul University.

6/2011   Spirit of Inquiry Award. DePaul University.

7/2008   Paid Leave Award. "Contextual Recommender Systems." University Research Council, DePaul University. July 2008-July 2009.

5/2007   Competitive Instructional Grant, "Materials for 'History of Games." Quality of Instruction Council, DePaul University.

Consulting

From 10/2023   Consultant, "Anti-trust and platform recommendations". US Department of Justice.

from 12/2019   Consultant, "Recommendation in an Intranet Talent Portal". Lotis Blue Consulting.

11/2014 – 11/2015 Consultant, "Machine Learning of Diagnostic Features for Hardware Fault Attribution". Uptake, Inc.

7/2013 - 8/2014 Expert Witness, "Optimize Technology Solutions, LLC v. Staples, Inc. et al." Case No. 2:11-CV-419-JRG (E.D. Texas). Kasowitz, Benson, Torres & Friedman, LLP for Recreational Equipment Inc.

10/2012 - 12/2014 Expert Witness, "In the Matter of Certain Products Containing Interactive Program Guide and Parental Control Technology, Investigation No. 337-TA-845, United States International Trade Commission, Keker & Van Nest LLP for Netflix, Inc.

10/2012 - 8/2013 Consultant, "Collaborative Opportunity Recommendation". CareerBuilder.com.

1/2011-6/2011   Consultant, "Experience Discovery". Chicago Learning Network.

TEACHING & ADVISING

Curriculum development

Masters in Data Science, planning group member, approved 6/2020, start 8/2021.

Minor in Data Science, approved 11/2019, active as of 8/2020.

Course development

INFO 4613: "Network Science", first offered Fall 2021.

INFO 4871/CSCI 4830: "Fairness and Bias in Artificial Intelligence", first offered Spring 2021.

INFO 4612/5612 (was INFO 4871/5871): "Recommender Systems", first offered Spring 2019.

INFO 5871: "Introduction to Data Science for Information Science", first offered Fall 2019.

Student supervision

PhD graduates

Nasim Sonboli (9/2016 - 6/2022), title "Controlling the Fairness / Accuracy Tradeoff in Recommender Systems." Placement: CRA Computing Innovation Post-doctoral fellow, Tufts University.

Xiaolei Huang (1/2020 – 11/2020; assumed role after departure of Michael Paul), title "Metadata Matters: Adaptation Methods for Robust Document Classification." Placement: Assistant Professor, Department of Computer Science, University of Memphis.

Himan Abdollahpouri (1/2014 – 8/2020), title "Popularity Bias in Recommendation: A Multi-stakeholder Perspective." Placement: Post-doctoral fellow, Northwestern University

Fatemeh Vahedian (9/2012 – 12/2017), title: "Multi-relational recommendation in heterogeneous networks." Placement: Post-doctoral fellow, University of Michigan

PhD advisor

Dianna Radpour: 1/2020 – 8/2022 (co-advisor with Martha Palmer, assumed role after departure of Michael Paul). Exited program with terminal Masters in 2022.

Vladislav Grozin: 9/2020 – 12/2022. On leave from the program due to visa issues.

Jess Smith: 5th year (co-advisor with Casey Fiesler)

Amanda Aird: 3rd year

Anas Buhayh: 3rd year

Elizabeth McKinnie, 2nd year

Joshua Paup, 2nd year

Aishwarya Satwani, 2nd year (Computer Science)

Meysam Varasteh, 2nd year (Computer Science)

Comprehensive exam committee

Nicola Redl (Journalism), 2024

Morgan Scheuermann (INFO), 2019

James Dykes (INFO), 2019

Thesis committee member

Rhett Hanscom (Computer Science)

Michael Hoefer (Computer Science), graduated 2024

Morgan Scheuermann (INFO), graduated 2023

Masoud Mansoury (Computer Science), Technical University of Eindhoven, graduated 10/2021.

External examiner

Avital Tal, University of Haifa, 2020.

Jacek Wasilewski, University College, Dublin, 2018.

Brendan O'Huiginn, University College Dublin, 2011.

Gil Chamiel, School of Computer Science and Engineering, University of New South Wales, 2010.

Antonis Loizou, University of Southampton, 2009.

Peter Briggs, University College Dublin, 2009.

Masters thesis advisor

Shreyas Kadekodi, Optimization approaches for fairness-aware recommendation, Fall 2022 / Spring 2023.

Graduate research projects and independent studies

Paresha Farastu, Fairness metrics for designing fairness agents, Fall 2023

Paresha Farastu, Algorithm fairness for recommendation systems using a social choice approach, Fall 2022.

Aishwarya Satawani, Diversity of perspective in news recommendation, Fall 2022 / Spring 2023.

Johua Sun, Formal properties of two-stage social choice in recommendation, Fall 2022 / Spring 2023.

Veena Prasad, Survey of fairness properties for recommendation algorithms, Spring/Fall 2020.

Shruthi Sridharan, Exploration of hybrid recommendation methods for microlending data, Spring/Fall 2020.

Undergraduate research projects and independent studies

Yoshie Ball-Souter, Recommender Systems, Fall 2023.

Trevor Ward, Correlating product features and reviews for health recommendation, Fall 2022.

Shreyas Kadekodi, Social choice for multi-dimensional fairness in recommendation, 9/2020-6/2021

Andrew Schwartz & Ziyue Guo, Multi-dimensional fairness in recommender systems, 9/2020-6/2021

Florencia Berenfus Cabral, Fairness-aware recommendations for microlending, 6/2019-8/2019

Bum Kim & Olwyn Doyle, Algorithmic Fairness in Recommender Systems: Tools and Metrics, 6/2019-8/2019.

Zijun Liu, Computational tools for reproducible recommender systems experiments, 9/2019-5/2020

Undergraduate honors supervision

Shreyas Kadekodi, Multi-criteria optimization in a multi-stage fairness-aware recommendation pipeline. 9/2021 – 5/2022.

Undergraduate honors committee

Olwyn Doyle, The role of decision support systems in the criminal justice system. Spring 2020.

SERVICE

University of Colorado, Boulder

Task force on online Masters of Artificial Intelligence, from 5/2024

Steering committee, Masters of Data Science degree, from 9/2020

Task force on Colorado Academy for Computer, Data and Information Science, 1/2019 – 12/2023.

Member ex-officio, Computing Advisory Board, 7/2019 – 6/2024

Task force on online Masters of Data Science degree, 5/2019 – 11/2019

Task force on consolidated Masters of Data Science degree, 11/2019 – 6/2020

Review board, Undergraduate Research Opportunities Program, Spring 2020 – present

College of Media, Communication and Information

Chairs' Caucus, 11/2019 – 6/2024

College Personnel Committee, 9/2019-6/2020.

College Scholarship Committee, Spring 2019

Department of Information Science

Co-Chair, Faculty Affairs Committee, from 8/2024.

Department Chair, 7/2019 – 6/2024

Chair, department academic program review committee, 9/2021 – 5/2023.

Chair, tenure-track faculty search committee, 2021, 2022, 2023, 2024

Chair, teaching faculty search committee, 2020, 2022.

Task force on graduate curriculum, 1/2019-6/2019

National and International

from 9/2021   Member of the Advisory Board, Know-Center, Technical University of Graz.

from 9/2020   Member of Working Group on Recommender System Alignment, Partnership on AI.

10/2019–12/2022 Member of Working Group on Recommender Systems Performance Evaluation, MLPerf.org.

6/2019-12/2021 Member of Governance and Research in Artificial Intelligence Leadership Network, Center for Democracy and Technology.

Program Co-Chair, 28th Conference on User Modeling, Adaptation and Personalization. Held online. July 12-18, 2020.

Chair, Workshop on Recommendation in Multistakeholder Environments. Held in conjunction with ACM Conference on Recommender Systems, 2019.

Co-Chair, 2nd International Workshop in Fairness in User Modeling, Adaptation and Personalization. Held in conjunction with the ACM Conference on User Modeling, Adaptation and Personalization, 2019.

Co-Chair, 1st International Workshop in Fairness in User Modeling, Adaptation and Personalization. Held in conjunction with the ACM Conference on User Modeling, Adaptation and Personalization, 2018.

Chair, 1st International Workshop on Value-Aware and Multi-Stakeholder Recommendation. In conjunction with ACM Conference on Recommender Systems, 2017.

Steering Committee, Chicago Colloquium on Digital Humanities and Computer Science. Founding member from 10/2017 – 12/2018.

Co-organizer: Recommender Systems Summer School, Bozen-Bolzano, 2017.

Co-chair: Doctoral Consortium, ACM Conference on Recommender Systems, 2017.

Steering Committee, ACM Conference on Recommender Systems. Founding member from 9/2008, Vice chair 9/2015 – 8/2017. Chair 8/2017 – 8/2020. Executive Committee member 8/2020 – 9/2023.

General Co-Chair of 5th ACM Conference on Recommender Systems, Chicago, 2010 – 2011.

Program Co-Chair of the 3rd ACM Conference on Recommender Systems, New York University, 2009

Conference Chair of the 10th International Conference on Case-Based Reasoning, DePaul University, 2005.

Faculty external review: External habilitation review for faculty member at Technical University of Graz, September 2024 and August 2020. Full professor review for faculty member at Nanyang Technological University, Singapore, 2022. Full professor review for faculty member at Hong Kong Baptist University, 2023. Tenure review for faculty member at University of Haifa, Israel, 2023. External habilitation review for faculty member at Technical University of Graz, August 2020.

Grant review: Regular reviewer for the National Science Foundation, Austrian Science Foundation, Research Council of Hong Kong, Science Foundation Ireland. Israel Science Foundation, 2024.

Editorial: Associate Editor, *ACM Transactions on Recommender Systems*, from 8/2021. Editorial board, *User Modeling and User-Adapted Interaction*, from 7/2019. *Electronic Commerce Research with Applications*, 6/2018 – 9/2019.

Program committees: Regular service on numerous conference program committees including ACM Conference on Recommender Systems, ACM Conference on User Modeling and Personalization, FLAIRS Conference, International Joint Conference on Artificial Intelligence, International Conference on Electronic Commerce and Web Technologies (EC-WEB). Numerous workshops including AI for Social Good, Responsible Recommendation, Recommender Systems for the Social Web, Intelligence Techniques in Web Personalization.

Ethics reviewer: Neural Information Processing (NeurIPS) conference, 2022, 2023, 2024.

Reviewer: Regular journal article reviews for numerous publications including Information Processing and Management, ACM Transactions on Internet Technology, Social Network Analysis and Mining, IEEE Transactions on Knowledge and Data Engineering, ACM Transactions on the Web, IEEE Transactions on Systems, Man and Cybernetics-Part B, ACM Transactions on Intelligent Systems and Technology, ACM Transactions on Information Systems.

Guest editor: *User Modeling and User-Adapted Interaction* "Fairness and Transparency in Personalized Systems" with Michael Ekstrand, Nava Tintarev, and Julita Vasileva. July 2021. Issue 3.
Electronic Commerce Research with Applications "Recommender Systems with Side Information" with Hui Fang, Guibing Guo, and Jie Zhang, 2018.
User Modeling and User Adapted Interaction "User Interfaces for Recommender Systems." with Alexander Felfernig and Pearl Pu, 2011.
AI Magazine "The Future of Recommender Systems: Research and Applications." with Alexander Felfernig and Mehmet Göker, 2011.
Artificial Intelligence Review, "AI Approaches to User Requirements Elicitation for E-Commerce. " with Pádraig Cunningham, 2002.

2021	Invited textbook review for *Intelligent Recommendation Technology*, Taylor and Francis Press.
2020	Invited textbook reviewer for *Personalized Machine Learning*, Cambridge University Press.
2009	Invited textbook reviewer for *Recommender Systems*, Cambridge University Press.
2009	Chapter Reviewer for *Recommender Systems Handbook*.
2008	Reviewer and editor for International Game Developers' Association Curriculum Framework.
1998-2001	Founder and Chair: Working Group on Computers in Education, Computer Professionals for Social Responsibility.

External

2 – 6/2022	Volunteer data archivist for the Saving Ukrainian Cultural Heritage Online project. Downloaded and archived sites from Ukrainian institutions threatened by the 2022 invasion.
10/2020	Student project reviewer, Northglenn High School.
1/2013-6/2014	Advisor to PandaPrepared.org, a community service project supporting personal emergency preparedness through mobile applications.
2012-2014	Volunteer coach for First Lego League robotics competition, Girl Scout Troop #24, Evanston, IL.
2009-2014	Volunteer mathematics tutor at Haven Middle School, Evanston, IL.
9/2004	TechWatch volunteer for the Verified Voting Foundation. Helping to ensure responsible use of voting technology in the November 2004 election.

10/2003	Developed and installed community-support database for Great Oaks School, Evanston, Illinois.
2001	Invited presentation: "Hot PANs, Fat Pipes, Cool Chips, Smart Paint and Other Curiosities from the 21st Century Web." At the 3rd Annual Web Institute for Teachers, University of Chicago, July 6, 2001.
1999	Invited presentation: "The Future of the Internet in Education." At the 1st Annual Web Institute for Teachers, University of Chicago. July 8, 1999.
1997-1998	Co-director (with Craig Cunningham) of "The WWW for Teachers", educational outreach courses for inner-city schoolteachers. University of Chicago, Graham School of General Studies.
1996-1998	Chicago Public Schools / University of Chicago Internet Project. Outreach project assisting inner-city schools near the University of Chicago to access and use the Internet.