Thorsten Bernd Karl JOACHIMS

Cornell University
Department of Computer Science
Department of Information Science
418 Gates Hall
Ithaca, NY 14853, USA

Phone: (607) 255-5593 (work)
EMail: tj36@cornell.edu

EDUCATION

Doctorate in Computer Science	Universität Dortmund, Germany, "The Maximum-Margin Approach to Learning Text Classifiers: Methods, Theory, and Algorithms", Committee: Prof. K. Morik, Prof. T. Mitchell, Prof. N. Fuhr, grade "summa cum laude", February 2001.
Diplom in Computer Science	German professional degree in computer science, Universität Dortmund, Germany, minor in business administration, grade "sehr gut", January 1997.

EMPLOYMENT

Cornell University	Director, AI Radical Collaboration, 2022 - present.
	Associate Dean for Research, Ann S. Bowers College of Computing and Information Science, 2021 - present.
	Department Chair, Department of Information Science, 2016 - 2018.
	Professor, Department of Computer Science, Ithaca, NY, USA, 2012 - present.
	Associate Professor, Department of Computer Science, Ithaca, NY, USA, 2006 - 2012.
	Assistant Professor, Department of Computer Science, Ithaca, NY, USA, 2001 - 2006.
Amazon	Amazon Scholar, Amazon Music, Ithaca, NY, USA, 2018 - present.
GMD National Research Center	Post-doctoral Associate, Institute for Autonomous Intelligent Systems, Knowledge Discovery Team, Bonn, Germany, August 2000 - September 2001.
Universität Dortmund	Research Assistant for Prof. Katharina Morik, AI-Unit, Dortmund, Germany, February 1997 - August 2000.
Carnegie Mellon University	Visiting Scholar of Prof. Tom Mitchell, School of Computer Science, Pittsburgh, August 1994 - April 1996.

AWARDS AND HONORS

Endowed Chair Jacob Gould Schurman Professorship, 2024.

L@S Best Paper Award Hansol Lee, R. Kizilcec, T. Joachims, "Evaluating a Learned Admission-Prediction Model as a Replacement for Standardized Tests in College Admissions", ACM Conference on Learning at Scale (L@S), 2023.

SIGIR Academy Selected as inaugural member of the SIGIR Academy, 2021.

SIGKDD Innovations Award 2020 Lifetime achievement award for research from ACM SIGKDD.

SIGIR Best Paper Award M. Morik, A. Singh, J. Hong, T. Joachims, "Controlling Fairness and Bias in Dynamic Learning-to-Rank", ACM Conference on Research and Developement in Information Retrieval (SIGIR), 2020.

IJCAI-JAIR Best Paper Prize Honorable Mention P. Shivaswamy, T. Joachims, "Coactive Learning", Journal of Artificial Intelligence Research (JAIR), 53:1-40, 2015. Awarded in 2020 to best papers in the preceeding five years.

KDD Test-of-Time Award T. Joachims, "Training Linear SVMs in Linear Time", ACM Conference on Knowledge Discovery and Data Mining (KDD), 2017.

WSDM Best Paper Award T. Joachims, A. Swaminathan, T. Schnabel, "Unbiased Learning-to-Rank with Biased Feedback", ACM International Conference on Web Search and Data Mining (WSDM), 2017.

SIGIR Test-of-Time Award T. Joachims, L. Granka, Bing Pan, H. Hembrooke, G. Gay, "Accurately interpreting clickthrough data as implicit feedback", ACM Conference on Research and Development in Information Retrieval (SIGIR), 2016.

KDD Best Student Paper Award Runner-Up Shuo Chen, T. Joachims, "Predicting Matchups and Preferences in Context", ACM Conference on Knowledge Discovery and Data Mining (KDD), 2016.

KDD Test-of-Time Award T. Joachims, "Optimizing Search Engines using Clickthrough Data", ACM Conference on Knowledge Discovery and Data Mining (KDD), 2015.

AAAI Fellow Elected Fellow of the Association for the Advancement of Artificial Intelligence, 2015.

ACM Fellow Elected Fellow of the Association for Computing Machinery, 2014.

ISMIR Best Student Paper Award	J. Moore, T. Joachims, D. Turnbull, "Taste Space vs. the World", International Conference on Music Information Retrieval (ISMIR), 2014.
Faculty of the Year Award	Award given by Cornell CS undergraduate students, 2010.
Humboldt Award	Fraunhofer-Bessel Award of the Humboldt Foundation, 2009.
ECML Best Paper Award	T. Joachims, Chun-Nam Yu, "Sparse Kernel SVMs via Cutting-Plane Training", European Conference on Machine Learning (ECML), 2009.
ICML Best 10-Year Paper Award	T. Joachims, "Transductive Inference for Text Classification using Support Vector Machines", International Conference on Machine Learning (ICML), 2009.
Teaching Award	Michael Tien Excellence in Teaching Award, 2007.
ACM SIGKDD Best Paper Award	T. Joachims, "Training Linear SVMs in Linear Time", ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2006.
ICML Best Paper Award	T. Joachims, "A Support Vector Method for Multivariate Performance Measures", International Conference on Machine Learning (ICML), 2005.
ICML Outstanding Student Paper Award	T. Finley and T. Joachims, "Supervised Clustering with Support Vector Machines", International Conference on Machine Learning (ICML), 2005.
ACM SIGKDD Best Student Paper Award	F. Radlinski and T. Joachims, "Query Chains: Learning to Rank from Implicit Feedback", ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2005.
NSF CAREER Award	"Improving Information Access by Learning from User Interactions", Principal Investigator, 2003 - 2008.
Dissertation Award	Best dissertation award of the University of Dortmund, 2001.
Studienstiftung d. D. Volkes	Undergraduate and graduate stipend, Oktober 1991 - January 1997.
Rotary Foundation	Stipend to study abroad at Carnegie Mellon University, Pittsburgh, PA, August 1994 - August 1995.
Bundeswettbewerb Informatik	National German competition in computer science for high-school students, Bundessieger (one of six winners), June 1991.

SERVICE

Conferences

RecSys 2024 Program Chair
Program Chair (with Katrien Verbert), *ACM Conference on Recommender Systems*, 2024.

SIGKDD Executive Committee
Member of the Executive Committee of ACM SIGKDD, since 2021.

KDD 2015 Program Chair
Program Chair (with Geoffrey Webb), *ACM SIGKDD Conference on Knowledge Discovery and Data Mining*, 2015.

IMLS Board
Board member of the *International Machine Learning Society*, since 2010.

ICML 2010 Program Chair
Program Chair (with Johannes Fuernkranz), *International Conference on Machine Learning*, 2010.

KDD 2007 Best Paper Awards Chair
Selection of Best Paper Awards at the ACM SIGKDD 2007 conference.

KDD 2006 Student Awards Chair
Selection of Students for Travel Awards at the ACM SIGKDD 2006 conference.

ICML 2005 Gov. Funding Chair
Funding and selection of student scholarships for ICML05 conference.

KDD-Cup 2004
Data-mining competition at KDD 2004 conference, co-chair, with Rich Caruana, August 2004.

Area Chair / Senior Area Chair
ICML, NeurIPS, ICLR, ECML, KDD, SIGIR, WSDM, ...

Journals

MLJ Action Editor
Action editor, *Machine Learning Journal*, 2010-2020.

JMLR Action Editor
Action editor, *Journal of Machine Learning Research*, 2004-2009. Member of editorial board, 2001-2003.

JAIR Advisory Board
Member of advisory board, *Journal of Artificial Intelligence Research*, since 2012. Associate editor, 2005-2011. Member of editorial board, 2003-2005.

DMKD Action Editor
Action editor, *Data Mining and Knowledge Discovery*, 2005-2008.

IRJ Special Issue
"Learning to Rank for Information Retrieval", co-editor, with Hang Li, Tie-Yan Liu, Cheng Xiang Zhai, *Information Retrieval Journal*, Springer, 2010.

JIIS Special Issue
"Automated Text Categorization", co-editor, with F. Sebastiani, *Journal on Intelligent Information Systems*, Kluwer, 18(2-3), 2002.

KI Special Issue
"Text-Mining", co-editor, with E. Leopold, *Künstliche Intelligenz*, 2, 2002.

Workshops

RecSys23 Workshop	"Causality, Counterfactuals, Sequential Decision-Making", co-organizer, with Olivier Jeunen, Yuta Saito, Harrie Oosterhuis, Flavian Vasile, Yixing Wang, September 2023.
ICML23 Workshop	"Counterfactuals in Minds and Machines", co-organizer, with Nina Corvelo Benz, Ricardo Dominguez-Olmedo, Manuel Gomez-Rodriguez, Amir-Hossein Karimi, Stratis Tsirtsis, Isabel Valera, Sarah A Wu, July 2023.
RecSys22 Workshop	"Causality, Counterfactuals, Sequential Decision-Making & Reinforcement Learning", co-organizer, with Olivier Jeunen, Yuta Saito, Harrie Oosterhuis, Flavian Vasile, Paige Bailey, Maria Dimakopoulou, Ying Li, Richard Liaw, Justin Basilico, Yves Raimond, October 2022.
ICML22 Workshop	"Responsible Decision Making in Dynamic Environments", co-organizer, with Virginie Do, Alessandro Lazaric, Joelle Pineau, Matteo Pirotta, Harsh Satija, Nicolas Usunier, July 2022.
RecSys20 Workshop	"Bandit and Reinforcement Learning from User Interactions", co-organizer, with Maria Dimakopoulou, Yves Raimond, Olivier Koch, Flavian Vasile, Adith Swaminathan, October 2020.
NeurIPS19 Workshop	"Machine Learning and Causal Inference for Improved Decision Making", co-organizer, with Michele Santacatterina, Nathan Kallus, Adith Swaminathan, David Sontag, Angela Zhou, December 2019.
NeurIPS19 Workshop	"Machine Learning with Guarantees", co-organizer, with Ben London, Gintare Karolina Dziugaite, Daniel Roy, Aleksander Madry, John Shawe-Taylor, December 2019.
RecSys19 Workshop	"Reinforcement and Robust Estimators for Recommendation", co-organizer, with Maria Dimakopoulou, Yves Raimond, Olivier Koch, Flavian Vasile, Adith Swaminathan, October 2019.
ICML18 Workshop	"Machine Learning for Causal Inference, Counterfactual Prediction, and Autonomous Action", co-organizer, with Nathan Kallus, Adith Swaminathan, Clement Calauzenes, Philip Thomas, October 2019.
RecSys18 Workshop	"Offline Evaluation for Recommender Systems", co-organizer, with Yves Raimond, Olivier Koch, Flavian Vasile, Adith Swaminathan, October 2019.

NIPS17 Workshop	"Causal Inference and Machine Learning for Intelligent Decision Making", co-organizer, with Alexander Volfovsky, Panos Toulis, Ricardo Silva, John Shawe-Taylor, Nathan Kallus, Adith Swaminathan, Lihong Li, December 2017.
NIPS16 Workshop	"What If? Inference and Learning of Hypothetical and Counterfactual Interventions in Complex Systems", co-organizer, with Ricardo Silva, John Shawe-Taylor, Adith Swaminathan, December 2016.
SIGIR11 Workshop	"Enriching Information Retrieval", co-organizer, with Paul Bennett, Khalid El-Arini, Krysta Svore, July 2011.
SIGIR09 Workshop	"Redundancy, Diversity, and Interdependent Document Relevance", co-organizer, with Paul Bennett, Ben Carterette, Filip Radlinski, July 2009.
SIGIR08 Workshop	"Beyond Binary Relevance", co-organizer, with Paul Bennett, Ben Carterette, Olivier Chapelle, July 2008.
NIPS07 Workshop	"Machine Learning for Web Search" co-organizer, with Dengyong Zhou, Olivier Chapelle, Thomas Hofmann, December 2007.
SIGIR07 Workshop	"Learning to Rank for Information Retrieval", co-organizer, with Hang Li, Tie-Yan Liu, Cheng Xiang Zhai, July 2007.
ICML06 Workshop	"Learning in Structured Output Spaces", co-organizer, with Ulf Brefeld, Ben Taskar, and Eric Xing, June 2006.
SIGIR03 Workshop	"Implicit Measures of User Interests and Preferences", co-organizer, with Susan Dumais, Krishna Bharat, and Andreas Weigend, August 2003.
NIPS02 Workshop	"Beyond Classification and Regresssion: Learning Rankings, Preferences, Equality Predicates, and Other Structures", co-chair, with Rich Caruana, December 2002.
IJCAI99 Workshop	"Machine Learning for Information Filtering", chair, with L. Ungar, M. Sahami, and A. McCallum, August 1999.
AAAI/ICML98 Workshop	"Machine Learning for Text Classification", co-organizer, with M. Sahami, A. McCallum, and M. Craven, July 1998.

Cornell

Director of AI Radical Collaboration
Director of Cornell Radical Collaboration in Artificial Intelligence, since 2022.

Associate Dean for Research
Cornell Ann S. Bowers College of Computing and Information Science, since 2021.

Task Force on Generative AI for Research
Member of Cornell Task Force on Generative AI in Research, 2023.

Task Force on Ugrad Admission
Member of Cornell Task Force on Undergraduate Admission, 2023.

Chair of AI Initiative - Research
Cornell AI Initiative, Research Vision, 2021.

CDSES Executive Committee
Executive Committee Member of the Cornell Center for Data Science for Enterprise and Society, 2019-2022.

Task Force on Data Science
Member of Provost Task Force on Data Science, 2016-2017.

Department Chair
Chair of the Department of Information Science, 2016-2018.

Director of Undergraduate Studies
Director of Undergraduate Studies for Computer Science, 2010-2013.

Director of Graduate Studies
Director of Graduate Studies for Information Science, 2007-2008.

University Senator
Member of university senate for the Computer Science Department, 2007-2008.

Co-Director of Undergraduate Studies
Co-Director of Undergraduate Studies for the Information Science part of the ISST major, 2005-2006.

Cognitive Studies Steering Committee
Member of the steering committee of the Cornell Cognitive Studies Program, 2004-2011.

AI Seminar
Organization of seminar on Artificial Intelligence, 2003-2010.

Other

SVM^{light} **Software**
Software package for support vector machine training, since December 1997.

SVM^{struct} **API and Instances**
General API and specific software packages for structured output prediction, including CFG parsing, diversified ranking, MAP optimized ranking, sequence alignment, latent variable models, and linear chain HMMs, 2003-2013.

ArXiv Fulltext Search
Implemented and operated the fulltext search for ArXiv.org, since 2008.

OSMOT Search Engine   Instrumented search engine software for interactive user experimentation, 2008.

DARPA Task Force   Member of the DARPA Computer Science Futures task force, identifying future core research areas in computer science, 2006.

Intelligence Community Data Mining Evaluation   Technical co-organizer of the Intelligence Community evaluation of data-mining technology, with Johannes Gehrke and Rich Caruana, 2005.

TEACHING AND ADVISING

Courses Taught   "Data Structures and Object-Oriented Programming", undergraduate course, Cornell University, Spring 2011, Spring 2012.

"Machine Learning", undergraduate course, Cornell University, Spring 2004, Spring 2005, Spring 2006, Spring 2007, Spring 2008, Fall 2009, Fall 2011, Fall 2012, Fall 2013, Fall 2014, Fall 2019, Fall 2020, Spring 2021.

"Advanced Machine Learning" graduate course, Cornell University, Spring 2015, Spring 2019, Fall 2023.

"Special Topics in Machine Learning" graduate seminar, Cornell University, Fall 2016, Fall 2018, Spring 2020, Fall 2021.

"Advanced Topics in Machine Learning" graduate course, Cornell University, Spring 2010.

"Foundations of Artificial Intelligence" and "Practicum in Artificial Intelligence", undergraduate course, Cornell University, Fall 2005, Fall 2007.

"Topics in Machine Learning: Learning to Predict Structured Objects", graduate course, Cornell University, Fall 2006.

"Representing and Accessing Digital Information", graduate course, Cornell University, Fall 2003, Fall 2004.

"Advanced Topics in Machine Learning: Kernel Machines", graduate course, Cornell University, Spring 2003.

"Human Language Technology", graduate course, with Claire Cardie, Cornell University, Fall 2002.

"Advanced Topics in Machine Learning", graduate course, with Rich Caruana, Cornell University, Spring 2002.

	"Introduction to Prolog Programming", undergraduate course, with Stefan Lehmke, Universität Dortmund, Spring 1998. With Ingolf Markhof, Fall 1997/1998.
Graduate Field Memberships	Computer Science
	Information Science
	Statistics
	Cognitive Science
	Data Science
Ph.D. Student and Postdoc Advisor	Kiante Brantley, Postdoc, since 2022.
	Haruka Kiyohara, Ph.D. Student, since 2023.
	Zhaolin Gao, Ph.D. Student, since 2023.
	Richa Rastogi, Ph.D. Student, since 2022.
	Yuta Saito, Ph.D. Student, since 2021.
	Joyce Zhou, Ph.D. Student, since 2021.
	Aaron Tucker, Ph.D. Student, since 2020.
	Himank Yadav, Ph.D. Student, 2019-2023.
	Yi Su, Ph.D. Student, 2018-2021.
	Luke Wang, Ph.D. Student, 2017-2023.
	Ashudeep Singh, Ph.D. Student, 2015-2021.
	Rahul Kidambi, Postdoc, 2019-2020.
	Michele Santacatterina, Postdoc, 2018-2020.
	Aman Agarwal, Ph.D. Student, 2016-2020.
	Pantelis Analytis, Postdoc, 2016-2018.
	Tobias Schnabel, Ph.D. Student, 2013-2018.
	Adith Swaminathan, Ph.D. Student, 2011-2016.
	Joshua Moore, Ph.D. Student, 2010-2015.
	Karthik Raman, Ph.D. Student, 2010-2015.
	Shuo Chen, Ph.D. Student, 2010-2015.
	Ruben Sipos, Ph.D. Student, 2009-2014.
	Pannaga Shivaswamy, Postdoc, 2010-2012.
	Yisong Yue, Ph.D. Student, 2007-2010.
	Chun-Nam Yu, Ph.D. Student, 2006-2010.
	Benyah Shaparenko, Ph.D. Student, 2005-2009.
	Thomas Finley, Ph.D. Student, 2004-2008.
	Filip Radlinski, Ph.D. Student, 2003-2008.

PUBLICATIONS

Books and Proceedings

- T. Joachims, D. Margineantu, G. Webb, G. Williams (2015). *Proceedings of the ACM Conference on Knowledge Discovery and Data Mining.* ACM Press.

- J. Fürnkranz, T. Joachims (2010). *Proceedings of the International Conference on Machine Learning.* Omnipress.

- T. Joachims (2002). *Learning to Classify Text Using Support Vector Machines: Methods, Theory, and Algorithms.* Kluwer/Springer.

Journal Papers

- T. Joachims, B. London, Yi Su, A. Swaminathan, Lequn Wang (2021). Recommendations as Treatments. *AAAI AI Magazine*, 42(3):19-30, Fall.

- A. Swaminathan, T. Joachims (2015). Batch Learning from Logged Bandit Feedback through Counterfactual Risk Minimization. *JMLR Special Issue in Memory of Alexey Chervonenkis*, 16(1):1731-1755, 2015.

- Yisong Yue, J. Broder, R. Kleinberg, T. Joachims (2012). The K-armed Dueling Bandits Problem. *Journal of Computer and System Sciences*, 78(5):1538 – 1556.

- O. Chapelle, T. Joachims, F. Radlinski, Yisong Yue (2012). Large-Scale Validation and Analysis of Interleaved Search Evaluation. *ACM Transactions on Information Systems (TOIS)*, 30(1):6.1 – 6.41.

- T. Joachims, T. Hofmann, Yisong Yue, Chun-Nam Yu (2009). Predicting Structured Objects with Support Vector Machines. *Communications of the ACM*, Research Highlight, 52(11):97 – 104, November.

- T. Joachims, F. Finley, Chun-Nam Yu (2009). Cutting-Plane Training of Structural SVMs. *Machine Learning*, 77(1):27 – 59.

- T. Joachims, Chun-Nam Yu (2009). Sparse Kernel SVMs via Cutting-Plane Training. *Machine Learning*, Special ECML Issue, 76(2-3):179 – 193.

- Chun-Nam Yu, T. Joachims, R. Elber, J. Pillardy (2008). Support Vector Training of Protein Alignment Models. *Journal of Computational Biology*, 15(7): 867 – 880.

- T. Joachims, F. Radlinski (2007). Search Engines that Learn from Implicit Feedback, *IEEE Computer*, 40(8):34 – 40, August.

- T. Joachims, L. Granka, B. Pang, H. Hembrooke, F. Radlinski, G. Gay (2007). Evaluating the Accuracy of Implicit Feedback from Clicks and Query Reformulations in Web Search. *ACM Transactions on Information Systems (TOIS)*, 25(2):7.

- B. Pan, H. Hembrooke, T. Joachims, G. Gay, L. Granka (2007). In Google we trust: Users' Decisions on Rank, Position and Relevancy. *Journal of Computer-Mediated Communication*, 12(3):801 – 823.

- C. Domshlak, T. Joachims (2006). Efficient and Non-Parametric Reasoning over User Preferences. *User Modeling and User-Adapted Interaction (UMUAI)*, 17(1-2):41–69.

- L. Lorigo, B. Pan, H. Hembrooke, T. Joachims, L. Granka, G. Gay (2006). The Influence of Task and Gender on Search and Evaluation using Google. *Information Processing and Management (IPM)*, 42(4):1123 – 1131.

- T. Joachims (2006). A Support Vector Method for Multivariate Performance Measures. *Künstliche Intelligenz*, 2006(1):32 – 38.

- I. Tsochantaridis, T. Joachims, T. Hofmann, Y. Altun (2005). Large-Margin Methods for Structured and Interdependent Output Variables. *Journal of Machine Learning Research (JMLR)*, 6(Sep):1453 – 1484.

- P. Ginsparg, P. Houle, T. Joachims, Jae-Hoon Sul (2004). Mapping Subsets of Scholarly Information, *Proceedings of the National Academy of Sciences of the USA (PNAS)*, 10.1073, 101(40):5236 – 5240.

- A. Christmann, P. Fischer, T. Joachims (2002). Comparison between Various Regression Depth Methods and the Support Vector Machine to Approximate the Minimum Number of Misclassifications, *Computational Statistics*, 17(2):273 – 287.

- K. Morik, M. Imhoff, P. Brockhausen, T. Joachims, U. Gather (2000). Knowledge Discovery and Knowledge Validation in Intensive Care. *Artificial Intelligence in Medicine*, 19(3):225 – 249.

- T. Joachims, D. Mladenič (1998). Browsing-Assistenten, Tour Guides and adaptive WWW-Server. *Künstliche Intelligenz*, 28(3):23 – 29.

Refereed Conference Papers

- K. Brantley, Zhichong Fang, S. Dean, T. Joachims (2024). Ranking with Long-Term Constraints, *International Conference on Web Search and Data Mining (WSDM)*.

- A. Tucker, C. Biddulph, Claire Wang, T. Joachims (2023). Bandits with Costly Reward Observations, *Conference on Uncertainty in Artificial Intelligence (UAI)*.

- Joyce Zhou, T. Joachims (2023). How to Explain and Justify Almost Any Decision: Potential Pitfalls for Accountability in AI Decision-Making, *ACM Conference on Fairness, Accountability and Transparency (FAccT)*.

- Hansol Lee, R. Kizilcec, T. Joachims (2023). Evaluating a Learned Admission-Prediction Model as a Replacement for Standardized Tests in College Admissions, *ACM Conference on Learning at Scale (L@S)*.

  L@S Best Paper Award

- Yuta Saito, Qingyang Ren, T. Joachims (2023). Off-Policy Evaluation for Large Action Spaces via Conjunct Effect Modeling, *International Conference on Machine Learning (ICML)*.

- B. London, Levi Lu, T. Sandler, T. Joachims (2023). Boosted Off-Policy Learning, *International Conference on Artificial Intelligence and Statistics (AISTATS)*.

- Lequn Wang, T. Joachims (2023). Uncertainty Quantification for Fairness in Two-Stage Recommender Systems, *International Conference on Web Search and Data Mining (WSDM)*.

- A. Tucker, T. Joachims (2023). Variance-Optimal Augmentation Logging for Counterfactual Evaluation in Contextual Bandits, *International Conference on Web Search and Data Mining (WSDM).*

- Lequn Wang, T. Joachims, Manuel Gomez Rodriguez (2022). Improving Screening Processes via Calibrated Subset Selection. *International Conference on Machine Learning (ICML).*

- Yuta Saito, T. Joachims (2022). Off-Policy Evaluation for Large Action Spaces via Embeddings. *International Conference on Machine Learning (ICML).*

- Yuta Saito, T. Joachims (2022). Fair Ranking as Fair Division: Impact-Based Individual Fairness in Ranking. *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD).*

- A. Block, R. Kidambi, D. Hill, T. Joachims, I. Dhillon (2022) Counterfactual Learning To Rank for Utility-Maximizing Query Autocompletion. *ACM Conference on Research and Development in Information Retrieval (SIGIR).*

- Yi Su, M. Bayoumi, T. Joachims (2022). Optimizing Rankings for Recommendation in Matching Markets. *ACM Web Conference (WWW).*

- Lequn Wang, Yiwei Bai, Wen Sun, T. Joachims (2021). Fairness of Exposure in Stochastic Bandits. *International Conference on Machine Learning (ICML).*

- H. Yadav, Zhengxiao Du, T. Joachims (2021). Policy-Gradient Training of Fair and Unbiased Ranking Functions. *ACM Conference on Research and Development in Information Retrieval (SIGIR).*

- Lequn Wang, T. Joachims, User Fairness (2021). Item Fairness and Diversity for Rankings in Two-Sided Markets. *ACM International Conference on the Theory of Information Retrieval (ICTIR).*

- A. Singh, D. Kempe, T. Joachims (2021). Fairness in Ranking under Uncertainty. *Neural Information Processing Systems (NeurIPS).*

- M. Morik, A. Singh, J. Hong, T. Joachims (2020). Controlling Fairness and Bias in Dynamic Learning-to-Rank. *ACM Conference on Research and Development in Information Retrieval (SIGIR).*

  SIGIR Best Paper Award

- T. Schnabel, S. Amershi, P. Bennett, P. Bailey, T. Joachims (2020). The Impact of More Transparent Interfaces on Behavior in Personalized Recommendation. *ACM Conference on Research and Development in Information Retrieval (SIGIR).*

- N. Sachdeva, Yi Su, T. Joachims (2020). Off-policy Bandits with Deficient Support. *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD).*

- R. Kidambi, A. Rajeswaran, P. Netrapalli, T. Joachims (2020). MOReL: Model-Based Offline Reinforcement Learning. *Conference on Neural Information Processing Systems (NeurIPS).*

- Yi Su, Lequn Wang, M. Santacatterina, T. Joachims (2019). CAB: Continuous Adaptive Blending for Policy Evaluation and Learning. *International Conference on Machine Learning (ICML).*

- A. Agarwal, K. Takatsu, I. Zaitsev, T. Joachims (2019). A General Framework for Counterfactual Learning-to-Rank. *ACM Conference on Research and Development in Information Retrieval (SIGIR).*

- Zhichong Fang, A. Agarwal, T. Joachims (2019). Intervention Harvesting for Context-Dependent Examination-Bias Estimation. *ACM Conference on Research and Development in Information Retrieval (SIGIR).*

- A. Singh, T. Joachims (2019). Policy Learning for Fairness in Ranking. *Neural Information Processing Systems (NeurIPS).*

- A. Agarwal, I. Zaitsev, X. Wang, C. Li, M. Najork, T. Joachims (2019). Estimating Position Bias without Intrusive Interventions. *International Conference on Web Search and Data Mining (WSDM).*

- T. Schnabel, P. Bennett, T. Joachims (2019). Shaping Feedback Data in Recommender Systems with Interventions Based on Information Foraging Theory. *International Conference on Web Search and Data Mining (WSDM).*

- A. Singh, T. Joachims (2018). Fairness of Exposure in Rankings. *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD).*

- T. Joachims, A. Swaminathan, M. de Rijke (2018). Deep Learning with Logged Bandit Feedback. *International Conference on Learning Representations (ICLR).*

- T. Schnabel, P. Bennett, S. Dumais, T. Joachims (2018). Short-Term Satisfaction and Long-Term Coverage: Understanding How Users Tolerate Algorithmic Exploration. *International Conference on Web Search and Data Mining (WSDM).*

- T. Joachims, A. Swaminathan, T. Schnabel (2017). Unbiased Learning-to-Rank with Biased Feedback. *ACM Conference on Web Search and Data Mining (WSDM).*
  WSDM Best Paper Award

- A. Agarwal, S. Basu, T. Schnabel, T. Joachims (2017). Effective Evaluation using Logged Bandit Feedback from Multiple Loggers, *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD).*

- P. Analytis, A. Delfino, J. Kammer, M. Moussaid, and T. Joachims (2017). Ranking with social cues: Integrating average review scores with popularity information, Short Paper, *International Conference in Web and Social Media (ICWSM).*

- T. Schnabel, A. Swaminathan, A. Singh, N. Chandak, T. Joachims (2016). Recommendations as Treatments: Debiasing Learning and Evaluation. *International Conference on Machine Learning (ICML).*

- T. Schnabel, A. Swaminathan, P. Frazier, T. Joachims (2016). Unbiased Comparative Evaluation of Ranking Functions. *International Conference on the Theory of Information Retrieval (ICTIR).*
  ICTIR Best Presentation Award for Tobias Schnabel

- S. Reddy, I. Labutov, S. Banerjee, T. Joachims (2016). Unbounded Human Learning: Optimal Scheduling for Spaced Repetition. *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD).*

- Shuo Chen, T. Joachims (2016). Predicting Matchups and Preferences in Context. *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD).*
  KDD Best Student Paper Award Runner-Up

- T. Schnabel, P. Bennett, S. Dumais, T. Joachims (2016). Using Shortlists to Support Decision Making and Improve Recommender System Performance. *World Wide Web Conference (WWW).*

- S. Reddy, Igor Labutov, T. Joachims (2016). Learning Student and Content Embeddings for Personalized Lesson Sequence Recommendation. Work in Progress. *ACM Conference on Learning at Scale (L@S).*

- Shuo Chen, T. Joachims (2016). Modeling Intransitivity in Matchup and Comparison Data. *ACM Conference on Web Search and Data Mining (WSDM).*

- A. Swaminathan, T. Joachims (2015). The Self-Normalized Estimator for Counterfactual Learning. *Proceedings of the Neural Information Processing Systems Conference (NIPS).*

- A. Swaminathan, T. Joachims (2015). Counterfactual Risk Minimization: Learning from Logged Bandit Feedback. *Proceedings of the International Conference on Machine Learning (ICML).*

- T. Schnabel, I. Labutov, D. Mimno, T. Joachims (2015). Evaluation Methods for Unsupervised Word Embeddings. *Conference on Empirical Methods in Natural Language Processing (EMNLP).*

- K. Raman, T. Joachims (2015). Bayesian Ordinal Peer Grading. *Proceedings of the ACM Conference on Learning at Scale (L@S).*

- K. Raman, T. Joachims (2014). Methods for Ordinal Peer Grading. *Proceedings of the ACM Conference on Knowledge Discovery and Data Mining (KDD).*

- N. Ailon, Z. Karnin, T. Joachims (2014). Reducing Dueling Bandits to Cardinal Bandits. *Proceedings of the International Conference on Machine Learning (ICML).*

- R. Sipos, A. Ghosh, T. Joachims (2014). Was This Review Helpful to You? It Depends! Context and Voting Patterns in Online Content. *Proceedings of the International World Wide Web Conference (WWW).*

- J. Moore, T. Joachims, D. Turnbull (2014). Taste Space Versus the World: an Embedding Analysis of Listening Habits and Geography. *Proceedings of the Conference of the International Society for Music Information Retrieval (ISMIR).*
  ISMIR Best Student Paper Award

- D. Turnbull, J. Zupnick, K. Stensland, A. Horwitz, A. Wolf, A. Spirgel, S. Meyerhofer, T. Joachims (2014). Using Personalized Radio to Enhance Local Music Discovery. *Work in Progress Paper at ACM Conference on Human Factors in Computing Systems (CHI).*

- K. Raman, T. Joachims (2013). Learning Socially Optimal Information Systems from Egoistic Users. *Proceedings of the European Conference on Machine Learning (ECML),* Prague, Czech Republic.

- K. Raman, T. Joachims, P. Shivaswamy, T. Schnabel (2013). Stable Coactive Learning via Perturbation. *Proceedings of the International Conference on Machine Learning (ICML),* Atlanta, GA.

- A. Fix, T. Joachims, S. Park, R. Zabih (2013). Structured learning of sum-of-submodular higher order energy functions. *Proceedings of the International Conference on Computer Vision (ICCV)*.

- K. Raman, A. Swaminathan, J. Gehrke, T. Joachims (2013). Beyond Myopic Inference in Big Data Pipelines. *Proceedings of the ACM Conference on Knowledge Discovery and Data Mining (KDD)*, Chicago, IL.

- Shuo Chen, Jiexun Xu, T. Joachims (2013). Multi-space Probabilistic Sequence Modeling. *Proceedings of the ACM Conference on Knowledge Discovery and Data Mining (KDD)*, Chicago, IL.

- A. Jain, B. Wojcik, T. Joachims, A. Saxena (2013). Learning Trajectory Preferences for Manipulators via Iterative Improvement. *Proceedings of the Conference on Neural Information Processing Systems (NIPS)*, Lake Tahoe, CA.

- J. Moore, Shuo Chen, T. Joachims, D. Turnbull (2013). Taste over Time: the Temporal Dynamics of User Preferences. *Proceedings of the Conference of the International Society for Music Information Retrieval (ISMIR)*, Curitiba, Brazil.

- P. Shivaswamy, T. Joachims (2012). Online Structured Prediction via Coactive Learning. *Proceedings of the International Conference on Machine Learning (ICML)*, Edinburgh, UK.

- J. Moore, Shuo Chen, T. Joachims, D. Turnbull (2012). Learning to Embed Songs and Tags for Playlist Prediction. *Proceedings of the Conference of the International Society for Music Information Retrieval (ISMIR)*, Porto, Portugal.

- K. Raman, P. Shivaswamy, T. Joachims (2012). Online Learning to Diversify from Implicit Feedback. *Proceedings of the ACM Conference on Knowledge Discovery and Data Mining (KDD)*, Beijing, China.

- Shuo Chen, J. Moore, D. Turnbull, T. Joachims (2012). Playlist Prediction via Metric Embedding. *Proceedings of the ACM Conference on Knowledge Discovery and Data Mining (KDD)*, Beijing, China.

- P. Shivaswamy, T. Joachims (2012). Multi-armed Bandit Problems with History. *Proceedings of the Conference on Artificial Intelligence and Statistics (AISTATS)*, La Palma, Spain.

- R. Sipos, P. Shivaswamy, T. Joachims (2012). Large-Margin Learning of Submodular Summarization Models. *Proceedings of the Conference of the European Chapter of the Association for Computational Linguistics (EACL)*, Avignon, France.

- K. Raman, T. Joachims, P. Shivaswamy (2011). Structured Learning of Two-Level Dynamic Rankings. *Proceedings of the Conference on Information and Knowledge Management (CIKM)*, Glasgow, UK.

- H. Koppula, A. Anand, T. Joachims, A. Saxena (2011). Semantic Labeling of 3D Point Clouds for Indoor Scenes. *Proceedings of the Conference on Neural Information Processing Systems (NIPS)*, Granada, Spain.

- Yisong Yue, T. Joachims (2011). Beat the Mean Bandit. *Proceedings of the International Conference on Machine Learning (ICML)*, Bellevue, WA.

- C. Brandt, T. Joachims, Yisong Yue, J. Bank (2011). Dynamic Ranked Retrieval. *Proceedings of the ACM International Conference on Web Search and Data Mining (WSDM)*, Hong Kong, China.

- Yisong Yue, Yue Gao, O. Chapelle, Ya Zhang, T. Joachims (2010). Learning more Powerful Test Statistics for Click-based Retrieval Evaluation. *Proceedings of the Conference on Research and Development in Information Retrieval (SIGIR)*, Geneva, Switzerland.

- Zhao Xu, K. Kersting, T. Joachims (2010). Fast Active Exploration for Link-Based Preference Learning using Gaussian Processes. *Proceedings of the European Conference on Machine Learning (ECML)*, Barcelona, Spain.

- T. Joachims, Chun-Nam Yu (2009). Sparse Kernel SVMs via Cutting-Plane Training. *Proceedings of the European Conference on Machine Learning*, Bled, Slovenia.
  ECML Best Paper Award

- Chun-Nam Yu, T. Joachims (2009). Learning Structural SVMs with Latent Variables. *Proceedings of the International Conference on Machine Learning (ICML)*, Montreal, Canada.

- Yisong Yue, T. Joachims (2009). Interactively Optimizing Information Retrieval Systems as a Dueling Bandits Problem. *Proceedings of the International Conference on Machine Learning (ICML)*, Montreal, Canada.

- T. Joachims (2009). Retrospective on Transductive Inference for Text Classification using Support Vector Machines. *Proceedings of the International Conference on Machine Learning (ICML)*, Montreal, Canada.
  ICML 2009 Best 10-Year Paper Award

- Yisong Yue, J. Broder, R. Kleinberg, T. Joachims (2009). The K-armed Dueling Bandits Problem. *Proceedings of the Conference on Learning Theory (COLT)*, Montreal, Canada.

- B. Shaparenko, T. Joachims (2009). Identifying the Original Contribution of a Document via Language Modeling. *Proceedings of the European Conference on Machine Learning (ECML)*, Bled, Slovenia.

- F. Radlinski, M. Kurup, T. Joachims (2008). How Does Clickthrough Data Reflect Retrieval Quality? *Proceedings of the ACM Conference on Information and Knowledge Management (CIKM)*, Napa Valley, CA.

- Chun-Nam Yu, T. Joachims (2008). Training Structural SVMs with Kernels Using Sampled Cuts. *Proceedings of the ACM Conference on Knowledge Discovery and Data Mining (KDD)*, Las Vegas, NV.

- Yisong Yue, T. Joachims (2008). Predicting Diverse Subsets Using Structural SVMs. *Proceedings of the International Conference on Machine Learning (ICML)*, Helsinki, Finland.

- F. Radlinski, R. Kleinberg, T. Joachims (2008). Learning Diverse Rankings with Multi-Armed Bandits. *Proceedings of the International Conference on Machine Learning (ICML)*, Helsinki, Finland.

- T. Finley, T. Joachims (2008). Training Structural SVMs when Exact Inference is Intractable. *Proceedings of the International Conference on Machine Learning (ICML)*, Helsinki, Finland.

- F. Radlinski, T. Joachims (2007). Active Exploration for Learning Rankings from Click-through Data. In *Proceedings of the ACM Conference on Knowledge Discovery and Data Mining (KDD)*, San Jose, CA.

- B. Shaparenko, T. Joachims (2007). Information Genealogy: Uncovering the Flow of Ideas in Non-Hyperlinked Document Databases. In *Proceedings of the ACM Conference on Knowledge Discovery and Data Mining (KDD)*, San Jose, CA.

- Yisong Yue, T. Finley, F. Radlinski, T. Joachims (2007). A Support Vector Method for Optimizing Average Precision. In *Proceedings of the Conference on Research and Development in Information Retrieval (SIGIR)*, Amsterdam, Netherlands.

- Chun-Nam Yu, T. Joachims, R. Elber, J. Pillardy (2007). Support Vector Training of Protein Alignment Models. In *Proceeding of the International Conference on Research in Computational Molecular Biology (RECOMB)*, San Francisco, CA.

- S. Pohl, F. Radlinski, T. Joachims (2007). Recommending Related Papers Based on Digital Library Access Records. In *Proceeding of the Joint Conference on Digital Libraries (JCDL)*, Vancouver, BC.

- T. Joachims (2006). Training Linear SVMs in Linear Time. In *Proceedings of the ACM Conference on Knowledge Discovery and Data Mining (KDD)*, Chicago, IL.

  ACM SIGKDD Best Paper Award
  ACM SIGKDD 2017 Test-of-Time Award

- F. Radlinski, T. Joachims (2006). Minimally Invasive Randomization for Collecting Unbiased Preferences from Clickthrough Logs. In *Proceedings of the National Conference on Artificial Intelligence (AAAI)*, Boston, MA.

- T. Joachims (2005). A Support Vector Method for Multivariate Performance Measures. In *Proceedings of the International Conference on Machine Learning (ICML)*, Bonn, Germany.

  ICML Best Paper Award

- T. Joachims, J. Hopcroft (2005). Error Bounds for Correlation Clustering. In *Proceedings of the International Conference on Machine Learning (ICML)*, Bonn, Germany.

- T. Finley, T. Joachims (2005). Supervised Clustering with Support Vector Machines. In *Proceedings of the International Conference on Machine Learning (ICML)*, Bonn, Germany.

  ICML Outstanding Student Paper Award

- F. Radlinski, T. Joachims (2005). Query Chains: Learning to Rank from Implicit Feedback. In *Proceedings of the ACM Conference on Knowledge Discovery and Data Mining (KDD)*, Chicago, IL.

  ACM SIGKDD Best Student Paper Award

- T. Joachims, L. Granka, B. Pang, H. Hembrooke, Gay, G. (2005). Accurately Interpreting Clickthrough Data as Implicit Feedback. In *Proceedings of the Conference on Research and Development in Information Retrieval (SIGIR)*, Salvador, Brasil.

  SIGIR 2016 Test-of-Time Award

- C. Domshlak, T. Joachims (2005). Unstructuring User Preferences: Efficient Non-Parametric Utility Revelation. In *Proceedings of the Conference on Uncertainty in Artificial Intelligence (UAI)*, Edinburgh, UK.

- S. Aya, C. Lagoze, T. Joachims (2005). Citation Classification and its Applications. In *Proceedings of the International Conference on Knowledge Management (ICKM)*, Charlotte, NC.

- I. Tsochantaridis, T. Hofmann, T. Joachims, Y. Altun (2004). Support Vector Machine Learning for Interdependent and Structured Output Spaces. In *Proceedings of the International Conference on Machine Learning (ICML)*, Banff, Canada.

- M. Schultz, T. Joachims (2003). Learning a Distance Metric from Relative Comparisons. In *Proceedings of the Conference on Neural Information Processing Systems (NIPS)*, Vancouver, Canada.

- T. Joachims (2003). Transductive Learning via Spectral Graph Partitioning. In *Proceedings of the International Conference on Machine Learning (ICML)*, Washington, DC.

- T. Joachims (2002). Optimizing Search Engines Using Clickthrough Data. In *International Conference on Knowledge Discovery and Data Mining (KDD)*, Edmonton, Canada.
  KDD Test-of-Time Award

- P. Sengers, R. Liesendahl, W. Magar, C. Seibert, B. Mueller, T. Joachims, W. Geng, P. Martensson, K. Hook (2002). The Enigmatics of Affect. In *Proceedings of the Conference on Designing Interactive Systems (DIS)*, London, UK.

- T. Joachims (2001). A Statistical Learning Model of Text Classification with Support Vector Machines. In *Proceedings of the International ACM Conference on Research and Development in Information Retrieval (SIGIR)*, New Orleans, LA.

- T. Joachims, N. Cristianini, J. Shawe-Taylor (2001). Composite Kernels for Hypertext Categorization. In *Proceedings of the International Conference on Machine Learning (ICML)*, Berkshires, MA.

- T. Joachims (2000). Estimating the Generalization Performance of a SVM Efficiently. In *Proceedings of the International Conference on Machine Learning (ICML)*, Stanford, CA.

- R. Klinkenberg, T. Joachims (2000). Detecting Concept Drift with Support Vector Machines. In *Proceedings of the International Conference on Machine Learning (ICML)*, Stanford, CA.

- T. Joachims (1999). Transductive Inference for Text Classification using Support Vector Machines. In *International Conference on Machine Learning (ICML)*, Bled, Slowenien.

- K. Morik, P. Brockhausen, T. Joachims (1999). Combining Statistical Learning with a Knowledge-Based Approach – ACase Study in Intensive Care Monitoring. In *Proceedings of the International Conference on Machine Learning (ICML)*, Bled, Slowenia.

- T. Scheffer, T. Joachims (1999). Expected Error Analysis for Model Selection. In *Proceedings of the International Conference on Machine Learning (ICML)*, Bled, Slowenia.

- T. Joachims (1998). Text Categorization with Support Vector Machines: Learning with Many Relevant Features. In *Proceedings of the European Conference on Machine Learning (ECML)*, Chemnitz, Germany.

- T. Joachims (1997). A Probabilistic Analysis of the Rocchio Algorithm with TFIDF for Text Categorization. In *Proceedings of the International Conference on Machine Learning (ICML)*, Nashville, TN.

- T. Joachims, D. Freitag, T. Mitchell (1997). WebWatcher: A Tour Guide for the World Wide Web. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, Nagoya, Japan.

Book Chapters

- F. Radlinski, M. Kurup, T. Joachims (2010). Evaluating Search Engine Relevance with Click-Based Metrics, in: J. Fuernkranz, E. Huellermeyer, *Preference Learning*, Springer.

- T. Joachims (2005). Transductive Support Vector Machines, in: O. Chapelle, A. Zien, B. Schoelkopf, *Semi-Supervised Learning*, MIT Press.

- T. Joachims, T. Galor, R. Elber (2005). Learning to Align Sequences: A Maximum-Margin Approach, in: B. Leimkuhler et al., *New Algorithms for Macromolecular Simulation*, LNCS Vol. 49, Springer.

- T. Joachims (2003). Unbiased Evaluation of Retrieval Quality using Clickthrough Data, in: J. Franke, R. Nakhaeizadeh, I. Renz, *Text-Mining*, Physica Verlag.

- T. Joachims (2002). The Maximum-Margin Approach to Learning Text Classifiers, in: D. Wagner et al. *Ausgezeichnete Informatikdissertationen 2001*, Lecture Notes in Informatics (LNI), Köllen Verlag.

- K. Morik, S. Wrobel, T. Joachims (2001). Maschinelles Lernen and Data Mining. In G. Görz et al., Eds., *Handbuch der Künstlichen Intelligenz*, 3rd Edition, Oldenbourg.

- T. Joachims (1999). Making Large-Scale SVM Learning Practical. In Schölkopf et al., Eds., *Advances in Kernel Methods - Support Vector Learning*, chapter 11, pages 169 – 184, MIT-Press.

- R. Armstrong, D. Freitag, T. Joachims, T. Mitchell (1998). WebWatcher: A Learning Apprentice for the World Wide Web. In Michalski et al., Eds., *Machine Learning and Data Mining*, pages 297 – 312, Wiley. Reprint of workshop paper.

Other Publications

- P. Bennett, K. El-Arini, T. Joachims, K. Svore (2011). Enriching Information Retrieval. *SIGIR Forum*, 45(2):60 – 65.

- F. Radlinski, P. Bennett, B. Carterette, T. Joachims (2009). Redundancy, Diversity and Interdependent Document Relevance. *SIGIR Forum*, 43(2):46 – 52.

- P. Bennett, B. Carterette, O. Chapelle, T. Joachims (2008). Beyond Binary Relevance: Preferences, Diversity, and Set-level Judgments. *SIGIR Forum*, 42(2):53 – 58.

- T. Joachims, Hang Li, Tie-Yan Liu, ChengXiang Zhai (2007). Learning to Rank for Information Retrieval. *SIGIR Forum*, 41(2):58 – 62.

- R. Caruana, T. Joachims, L. Backstrom (2004). KDDCup 2004: Results and Analysis. *ACM SIGKDD Newsletter*, 6(2):95 – 108.

- S. Dumais, T. Joachims, K. Bharat, A. Weigend (2003). Implicit Measures of User Interests and Preferences. *SIGIR Forum*, 37(2):50 – 54.

- T. Joachims (1999). Aktuelles Schlagwort: Support Vector Machines. *Künstliche Intelligenz*, 33(4):54 – 55.

- T. Joachims (1996). Einsatz eines intelligenten, lernenden Agenten für das World Wide Web. Diplom Thesis, Fachbereich Informatik, Universität Dortmund.

Edited Special Journal Issues

- T. Joachims, Hang Li, Tie-Yan Liu, ChengXiang Zhai (2010). Editors, Special Issue on Learning to Rank for Information Retrieval. *Information Retrieval Journal*, 12(3), Springer.

- T. Joachims, F. Sebastiani (2002). Editors, Special Issue on Automated Text Categorization, *Journal on Intelligent Information Systems*, 18(2-3), Kluwer.

- T. Joachims, E. Leopold (2002). Editors, Special Issue on Text-Mining, *Künstliche Intelligenz*, 16(2).

INVITED PLENARY CONFERENCE PRESENTATIONS

- Beyond Engagement: Optimizing the Long-Term Sustainability of Online Platforms. Keynote at *International Conference on AI-ML Systems*, October 2022.

- Fairness and Control of Exposure in Two-Sided Markets. Keynote at *ACM Conference on the Theory of Information Retrieval (ICTIR)*, July 2021.

- SIGKDD Innovations Award Lecture. *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, August 2020.

- Fair Ranking with Biased Data. Keynote at *BAAI Conference*, Beijing, October, 2019.

- Unbiased Learning from Biased User Feedback. Invited plenary talk at the *AI Summit of Re:Invent*, Las Vegas, NV, 2018.

- Learning from Rational Behavior. Invited keynote talk at the *Microsoft Computing in the 21st Century Conference (21CCC)*, Beijing, China, 2015.

- Online and Batch Learning with Interventions. Invited keynote talk at the *Pacific Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*, Ho Chi Minh City, Vietnam, 2015.

- Learning from User Interactions. Invited keynote talk at the *International Conference on Web Search and Data Mining (WSDM)*, Shanghai, China, 2015.

- Learning from Rational Behavior. Invited keynote talk at the *Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Doha, Qatar, 2014.

- Learning with Humans in the Loop. Invited keynote talk at the *European Conference on Machine Learning (ECML)*, Prague, Czech Republic, 2013.

- The Value of User Feedback. Invited keynote talk at the *European Conference on Information Retrieval (ECIR)*, Dublin, Ireland, 2011.

- Retrospective on Transductive Inference for Text Classification using Support Vector Machines. *International Conference on Machine Learning (ICML)*, Montreal, Canada, 2009.

- Support Vector Machines for Structured Outputs. Invited plenary talk at the *Conference of the German Classification Society (GfKl)*, Magdeburg, Germany, 2005.

- Learning to Predict Complex Objects. Invited plenary talk at the *IEEE International Conference on Data Mining (ICDM)*, Brighton, United Kingdom, 2004.

- A Support Vector Approach to Supervised Grammar Learning. Invited plenary talk at the *International Colloquium on Grammatical Inference (ICGI)*, Athens, Greece, 2004.

- Support Vector Methods for Complex Outputs. Invited plenary talk at the *Belgium and Netherlands Conference on Machine Learning (BENELEARN)*, Brussels, Belgium, 2004.

INVITED TALKS AT CONFERENCES, WORKSHOPS, AND AT OTHER INSTITUTIONS

2023

- Learning from Pairwise Preferences: From Search Rankings to ChatBots. Invited talk at the *ICML Workshop on The Many Facets of Preference-Based Learning*, July, 2023.

- Fair Ranking with Biased Data on Online Platforms. Invited talk at *Cornell ILR CAHRS Meeting*, October, 2023.

- Fair Ranking with Biased Data. *Cornell Statistics Graduate Seminar*, October, 2023.

- Beyond Engagement: Optimizing the Long-Term Sustainability of Online Platforms. *Cornell Econometrics Seminar*, October, 2023.

2022

- Fair and Effective Ranking Policies for Two-Sided Markets. Invited talk at the *WSDM Workshop on Decision Making in Modern Information Retrieval Systems*, Arizona, February, 2022.

- Fair Ranking with Biased Data in Two-Sided Markets. *Microsoft Research*, February, 2022.

- Fair Ranking with Biased Data in Two-Sided Markets, *Meta*, February, 2022.

- Fair Ranking with Biased Data in Two-Sided Markets, *Google Brain*, March, 2022.

- Learning from Preference Feedback in Combinatorial Action Spaces, Invited talk at the *ICML 2022 Workshop on Complex Feedback in Online Learning*, July, 2022.

- Nachhaltiges Design von KI Plattformen. Keynote talk at the *Lamarr AI Institute Opening Ceremony*, September, 2022.

- Fair Ranking with Biased Data in Two-Sided Markets, Keynote talk at *IDSC of IZA Workshop: Matching Workers and Jobs Online*, September, 2022.

- Fair Ranking with Biased Data in Two-Sided Markets, Colloquium talk at *Universitaet Dortmund, Fakultaet fuer Informatik*, September, 2022.

- Designing AI Systems with Steerable Long-Term Dynamics. Distinguished Lecture at the *Max Planck Institute for Software Systems*, November, 2022.

- Designing AI Systems with Steerable Long-Term Dynamics. Distinguished Lecture in the *MSR-IISc Lecture Series*, November, 2022.

2021

- Fair and Desirable Allocation of Exposure in Ranking. Invited plenary lecture at the *Forum for Information Retrieval Evaluation (FIRE)*, December 2021.

- Fair Recommendations with Biased Data. Invited lecture at the *Institute of Science and Technology Austria*, December 2021.

- Batch Learning from Logged Bandit Feedback. *Booking.com*, Amsterdam, Netherlands, November, 2021.

- Batch Learning from Logged Bandit Feedback. *Siemens*, Munich, Germany, October, 2021.

- Batch Learning from Logged Action Data. Keynote lecture at the *German Conference on Pattern Recognition (GCPR)*, Bonn, Germany, September, 2021.

- Fair Recommendations with Biased Data. Invited talk at *Netflix Workshop on Personalization, Recommendation, and Search*, Los Gatos, June, 2021.

- Fair Recommendations with Biased Data. Distinguished Lecture at *UC Santa Barbara*, May, 2021.

- Fair Ranking with Biased Data. Invited talk *Search Engines Amsterdam*, Amsterdam, February, 2021.

2020

- Fair Ranking with Biased Data. Invited keynote talk at the *Dutch-Belgian Information Retrieval Workshop (BIR)*, Antwerp, December, 2020.

- Fair Ranking with Biased Data. Invited keynote talk at the *LinkedIn AI Conference*, Sunnyvale, October, 2020.

- Ranking Systems for Individuals and Society. *University of Dortmund*, Dortmund, October 2020.

- Fair Ranking with Biased Data. *University of Michigan - MIDAS Seminar*, Ann Arbor, October, 2020.

2019

- Unbiased Learning-to-Rank with Biased Feedback. *Google*, Mountain View, August, 2019.

- Unbiased Evaluation for Unbiased Rankings. Invited Talk at *KDD Workshop on Offline and Online Evaluation of Interactive Systems*, 2019.

- Learning Recommendation Policies from Logged Interventions. Keynote at *KDD Workshop on Intelligent Information Feed*, 2019.

- Fair Ranking with Biased Data. Invited talk at *NeurIPS Workshop on Safety and Robustness in Decision-Making*, December, 2019.

- Batch Learning from Bandit Feedback. *California Institute of Technology*, Los Angeles, CA, 2019.

- Batch Learning from Bandit Feedback. *Duke University*, Durham, NC, 2019.

- Unbiased Learning-to-Rank with Biased Feedback. *Public Talk at Amazon*, Berlin, 2019.

- Learning from and for Interventions. *Kickoff of German National Excellence Center for Machine Learning*, Dortmund, 2019.

2018

- Learning from Logged Interventions. *Amazon*, Seattle, WA, 2018.

- Deep Learning from Logged Interventions. Invited talk at the *Recsys Workshop on Deep Learning for Recommender Systems*, Vancouver, 2018.

- Batch Learning from Bandit Feedback. *University of Illinois*, Chicago, IL, 2018.

2017

- Deep Learning from Logged Interventions. Invited talk at the *Machine Learning in the Real World Workshop*, Paris, France, 2017.

- Unbiased Learning with Biased User Feedback. *Spotify*, New York, NY, 2017.

- Learning from Logged Interventions. Invited talk at the *AdKDD and TargetAd Workshop at KDD*, Halifax, Canada, 2017.

- Machine Learning with Biased User Feedback. *Bloomberg*, New York, NY, 2017.

- Unbiased Learning with Biased Feedback. *Etsy*, New York, NY, 2017.

2016

- Structured Prediction with Logged Bandit Feedback. Invited talk at the *NIPS Workshop on Constructive Machine Learning*, Barcelona, Spain, 2016.

- Label Ranking with Biased Partial Feedback. Invited talk at the *NIPS Workshop on Extreme Classification*, Barcelona, Spain, 2016.

- Structured Prediction with Weak Feedback from Interaction Logs. Invited keynote talk at the *Dutch Society for Pattern Recognition Meeting*, Rotterdam, Netherlands, 2016.

2015

- Designing Human Feedback Data for Machine Learning. Invited keynote talk at the *Dutch-Belgian Information Retrieval Workshop*, Amsterdam, Netherlands, 2015.

- Learning from Users through Interventions. Invited keynote talk at the *Amazon Machine Learning Conference*, Seattle, WA, 2015.

- Batch Learning from Bandit Feedback. *Microsoft Research*, Cambridge, UK, 2015.

- From Contextual Bandits to Conditional Treatment Effects. *Erasmus Universiteit Rotterdam, Economics Department*, Rotterdam, Netherlands, 2015.

- From Conditional Treatment Effects to Batch Learning from Bandit Feedback. *Universitaet Dortmund*, Dortmund, Germany, 2015.

- Modeling Intransitive Preferences. Invited talk at the *KDD Workshop on Large-Scale Sports Analytics*, Sydney, Australia, 2015.

- Machine Learning with Humans in the Loop. *Jiaotong University*, Shanghai, China.

2014

- Learning from Rational Behavior. *Carnegie Mellon University*, Pittsburgh, PA.

- Harvesting Knowledge through Machine Learning. *AAAI Invited "What's Hot" Talk*, Conference on Artificial Intelligence (AAAI), Quebec City, Canada.

- Learning from Rational Behavior. *University of Indiana at Bloomington*, Bloomington, IN.

- Machine Learning with Humans in the Loop. *Bloomberg*, New York, NY.

2013

- Learning with Humans in the Loop. *University of Illinois*, Urbana-Champaign, IL.

- Modeling User Preferences in Connective Media. *Cornell-Technion Workshop on Connective Media*, New York, NY.

2012

- Learning Ranking Functions from Implicit Feedback. *Netflix*, Los Gatos, CA.

- Online Learning with Implicit User Preferences. Invited talk the *IPAM Workshop on Large-Scale Multimedia Search*, Los Angeles, CA.

2011

- Online Learning with Implicit User Preferences. Invited talk the *NIPS Workshop on Choice Models and Preference Learning*, Sierra Nevada, Spain.

- Learning with Humans in the Loop. *Purdue University*, Lafayette, IN.

- Support Vector Machines for Predicting Structured Outputs. *Tsinghua University*, Beijing, China.

2010

- Learning with Humans in the Loop. *Carnegie Mellon University*, Pittsburgh, PA, 2011.

- Optimizing Search Engines as a Dueling Bandits Problem. Invited talk at the *ICML Workshop on Reinforcement Learning and Search in Very Large Spaces*, Haifa, Israel, 2010.

- Support Vector Machines for Structured Output Prediction. *Georgia Institute of Technology*, Atlanta, GA, 2010.

2009

- Support Vector Machines for Predicting Structured Outputs. Invited talk at the *New York Academy of Sciences Symposium on Machine Learning*, New York, NY.

- Evaluating and Optimizing Search Engines through Interactive Experiments. *Microsoft Research*, Cambridge, UK.

- Measuring Result Utility through Interactive Experiments. *Seminar on Interactive Information Retrieval*, Dagstuhl, Germany.

- Support Vector Machines for Predicting Structured Outputs, *University of Bonn*, Bonn, Germany.

- How does Clickthrough Data Reflect Retrieval Quality? *University of Glasgow*, Glasgow, UK.

- Search Engines that Learn. *Fraunhofer IAIS*, Sankt Augustin, Germany.

- Support Vector Machines for Predicting Structured Outputs. Invited talk at the *Statistics Symposium of the SFB475*, Dortmund, Germany.

2008

- Structured Output Prediction with Structural SVMs. Invited talk at the *Symposium on Machine Learning with Graphs (MLG)*, Helsinki, Finland.

- A Support Vector Method for Multivariate Performance Measures. *Erasmus University Rotterdam*, Rotterdam, Netherlands.

- Eliciting Preferences in Information Retrieval. Invited talk at the *ECML 2008 Workshop on Preference Learning*, Antwerp, Belgium.

- How does Clickthrough Data Reflect Retrieval Quality?

  - *Yahoo Research*, San Jose, CA.
  - *Google*, Mountain View, CA.

2007

- Large-Margin Training for Predicting Structured Outputs. Invited talk at the *BIRS Workshop on Mathematical Programming in Data Mining*, Banff, AB.

- Support Vector Machines for Structured Outputs.

  - *Yahoo Research*, San Jose, CA.
  - *Columbia University*, Center for Computational Learning Systems, New York, NY.

2006

- Structured Output Prediction with Support Vector Machines. Invited talk at the *Joint IAPR International Workshops on Structural and Syntactic Pattern Recognition (SSPR) and Statistical Techniques in Pattern Recognition (SPR)*, Hong Kong, China.

- Support Vector Machines for Structured Outputs.

  - *Max-Planck Institut fuer Informatik*, Saarbruecken, Germany.
  - *University of Texas at Austin*, Dept. of Computer Science, Austin, TX.
  - *Carnegie Mellon University*, School of Computer Science, Pittsburgh, PA.

2005

- Optimizing Loss Functions for Predicting Rankings. Invited talk at the *NIPS 2005 Workshop on Learning to Rank*, Whistler, BC.

- Generating Accurate Training Data from Implicit Feedback. Invited talk at the *ICML 2005 Workshop on Learning in Web Search*, Bonn, Germany.

- Reliable Feedback from Clicking Behavior in WWW Search. *Microsoft Research*, Redmont, WA.

- Support Vector Machines for Structured Outputs.

  - *Microsoft Research*, Redmont, WA.
  - *University of Alberta*, Dept. of Computing Science, Edmonton, AB.

- Optimizing Search Engines using Clickthrough Data. *Swedish Institute for Computer Science*, Stockholm, Sweden.

2004

- Learning to Cluster. *Dagstuhl Seminar on Detecting Local Patterns*, Dagstuhl, Germany.
- Learning to Predict Complex Outputs.
  - *Indian Institute of Technology*, Kanpur, India.
  - *Google*, Palo Alto, CA.
  - *IBM TJ Watson Research Center*, Hawthorne, NY.
  - *Fraunhofer Institut FIRST*, Berlin, Germany.

2003

- Optimizing Search Engines using Clicktrough Data.
  - *Brown University*, Providence, RI.
  - *University of Illinois*, Urbana-Champaign, IL.
  - *Rochester Institute of Technology*, Rochester, NY.
- Transductive Learning via Spectral Graph Partitioning. Invited talk at the *IMA Workshop on Data Analysis and Optimization*, Minneapolis, MN.
- Learning Ranking Functions for Search. *Amazon Research*, Seattle, WA.
- Transductive Learning, Leave-One-Out, and Cuts. Invited talk at the *ALADDIN Workshop on Graph Partitioning in Vision and Machine Learning*, Pittsburgh, PA.

2002

- Optimizing Search Engines using Clicktrough Data.
  - *Google*, Palo Alto, CA.
  - *Cornell University*, Ithaca, NY.
  - *Daimler Benz Research*, Ulm, Germany.
  - *EURANDOM*, Eindhoven, Netherlands.
  - *Fraunhofer FIRST*, Berlin, Germany.
- The Maximum-Margin Approach to Learning Text Classifiers.
  - *Fraunhofer AIS*, Bonn, Germany.
  - *University College Dublin*, Dublin, Ireland.
  - *Universität Stuttgart*, Stuttgart, Germany.

2001

- Text Classification with SVMs. *Universität Duisburg*, Duisburg, Germany.
- Theory and Practice of SVMs. *Universität Freiburg*, Freiburg, Germany.
- The Maximum-Margin Approach to Learning Text Classifiers.

- *Stanford University*, Palo Alto, CA.
- *Cornell University*, Ithaca, NY.
- *Carnegie Mellon University*, Pittsburgh, PA.
- *DFKI*, Kaiserslautern, Germany.
- *Rutgers University*, New Brunswick, NJ.
- *Microsoft Research*, Redmont, WA.
- *Microsoft Research*, Cambridge, UK.
- *NEC Research*, Princeton, NJ.
- *IBM Watson Research Center*, Yorktown Heights, NY.
- *AT&T Research*, Florham Park, NJ.

2000

- Relating the Statistical Properties of Text to Transduction. *Royal Holloway University of London*, Egham, UK.

- The Maximum-Margin Approach to Learning Text Classifiers: Methods and Theory. *BBN Research*, Boston, MA.

- The Relation of Co-Training and Transduction. *Text-Learning Seminar, Carnegie Mellon University*, Pittsburgh, PA.

- The Web as the Bias. *Whizbang! Labs*, Pittsburgh, PA.

1999

- The Maximum-Margin Approach to Text Classification. *Microsoft Research*, Redmond, WA.

TUTORIALS

- Counterfactual Learning and Evaluation for Interactive Systems: Foundations, Implementations, and Recent Advances. With Yuta Saito. Tutorial at the *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, Washington, DC, 2022.

- Counterfactual Learning and Evaluation for Interactive Systems. Tutorial at the *REAML Summer School*, Dortmund, Germany, 2022.

- Counterfactual Learning and Evaluation for Recommender Systems: Foundations, Implementations, and Recent Advances. With Yuta Saito. Tutorial at the *ACM Conference on Recommender Systems (RecSys)*, Amsterdam, Netherlands, 2021.

- Counterfactual Evaluation and Learning for Search, Recommendation and Ad Placement. With Adith Swaminathan. Tutorial at the *ACM Conference on Research and Development in Information Retrieval (SIGIR)*, Pisa, Italy, 2016.

- Learning to Predict Trees, Sequences, and other Structured Outputs. Tutorial at the *North East Student Colloquium on Artificial Intelligence (NESCAI)*, Ithaca, NY, 2006.

- Tutorial on Support Vector and Kernel Methods. Tutorial at the *ACM Conference on Research and Development in Information Retrieval (SIGIR)*, Tampere, Finland, 2003.

- Tutorial on Support Vector and Kernel Methods. Tutorial at the *ACM Conference on Research and Development in Information Retrieval (SIGIR)*, Toronto, Canada, 2002.

- Tutorial on Support Vector Machines for Data Mining. Invited joint tutorial at the *European Conference on Machine Learning (ECML)* and the *European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD)*, Freiburg, Germany, 2001.

- Tutorial on Support Vector Machines. Invited tutorial at the *GI Fachgruppentreffen Maschinelles Lernen*, Bonn, Germany, 2000.

- Tutorial on Support Vector Machines. Invited tutorial at *BeneLearn*, Tilburg, Netherlands, 2000.