

I am a data scientist and a professor of Software and Information Systems Engineering. I currently serve as the chair of the Department of Software and Information System Engineering. I have established the machine learning lab and the big data lab which promote innovative adaptations of machine learning and data science methods to create the next generation of intelligent systems. I currently serve as an as an editorial board member of ACM TIST and an area editor for Information Fusion (Elsevier). My research interests lie in the areas of Data Science, Machine Learning, Big Data, Deep Learning and Data Mining and their applications to:

- Recommender Systems
- Cyber Security
- Information Retrieval
- Information Extraction
- Medical Informatics

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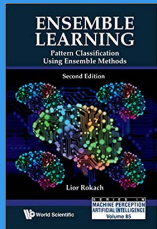
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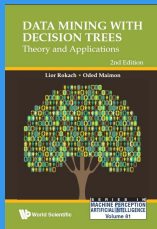


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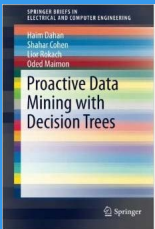


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Lior Rokach and Oded Maimon
Series in Machine Perception and Artificial Intelligence - Vol. 81
World Scientific Publishing, 2015, 380 p. Hardcover,
ISBN: 978-981-4590-07-5



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Recommendation System: Technology, Evaluation, and Efficient Algorithms (Chinese edition)
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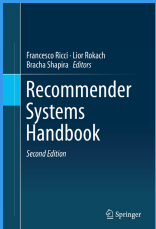
Proactive Data Mining with Decision Trees
Haim Dahan, Shahar Cohen, Lior Rokach, Oded Maimon
SpringerBriefs in Computer Science
Springer, 2014, softcover,
ISBN: 978-1493905386
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模式分类的集成方法
Pattern Classification Using Ensemble Methods (Chinese edition)
罗卡赫 (Lior Rokach)
National Defence Industry Press, 2015, 177 p. Hardcover,
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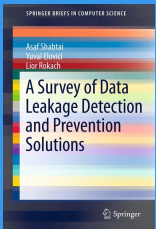


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Recommender Systems Handbook, 2nd Edition
Francesco Ricci, Lior Rokach and Bracha Shapira
Springer, 2015, 1003 p. Hardcover,
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A Survey of Data Leakage Detection and Prevention Solutions
Asaf Shabtai, Yuval Elovici, Lior Rokach
SpringerBriefs in Computer Science
Springer, 2012, Hardcover, ISBN: 978-1-4614-2052-1
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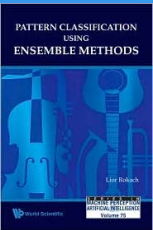
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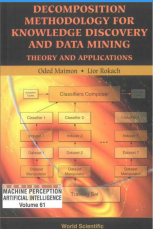
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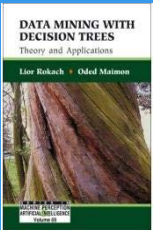
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布拉哈·皮拉 (Bracha Shapira), 保罗·坎特 (Paul B. Kantor),

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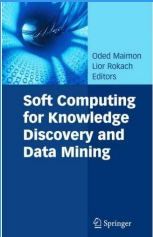
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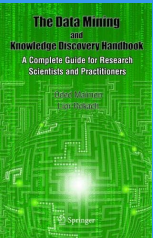
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The Data Mining and Knowledge Discovery Handbook

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Recent Publications

- **Gautam Kunapuli, Rich Maclin & Jude Shavlik (2011).**
[Advice Refinement for Knowledge-Based Support Vector Machines](#). *Proceedings of the Twenty-Fifth Conference on Neural Information Processing Systems (NIPS 2011)*.
- **G. Kunapuli, R. Maclin & J. Shavlik (2011).**
[Advice Refinement for Knowledge-Based Support Vector Machines](#). *Workshop on Combining Learning Strategies for Reducing Label Cost at ICML 2011*.
- **Gautam Kunapuli, Kristin P. Bennett, Rich Maclin & Jude Shavlik (2010).**
[The Adviceptron: Giving Advice To The Perceptron](#). *Proceedings of the Conference on Artificial Neural Networks In Engineering (ANNIE 2010)*, St. Louis, MO.
- **Trevor Walker, Ciaran O'Reilly, Gautam Kunapuli, Sriraam Natarajan, Richard Maclin, David Page & Jude Shavlik (2010).**
[Automating the ILP Setup Task: Converting User Advice about Specific Examples into General Background Knowledge](#). *Proceedings of the 20th International Conference on Inductive Logic Programming*, Florence, Italy.
- **G. Kunapuli, K.P. Bennett, A. Shabbeer, R. Maclin & J. Shavlik (2010).**
[Online Knowledge-Based Support Vector Machines](#). *Proceedings of the European Conference on Machine Learning (ECML 2010)*, Barcelona, Spain.
- **S. Natarajan, G. Kunapuli, R. Maclin, D. Page, C. O'Reilly, T. Walker & J. Shavlik (2010).**
[Learning from Human Teachers: Issues and Challenges in Bootstrap Learning](#). *AAMAS 2010 Workshop on Agents Learning Interactively from Human Teachers*, Toronto, Canada.
- **L. Torrey, J. Shavlik, T. Walker & R. Maclin (2009).**
[Transfer Learning via Advice Taking](#). In J. Koronacki, S. Wierzchon, Z. Ras & J. Kacprzyk, editors, *Recent Advances in Machine Learning, dedicated to the memory of Ryszard S. Michalski*. Springer Studies in Computational Intelligence.
- **S. Natarajan, G. Kunapuli, C. O'Reilly, R. Maclin, T. Walker, D. Page & J. Shavlik (2009).**
[ILP for Bootstrapped Learning: A Layered Approach to Automating the ILP Setup Problem](#). Presented at the *Nineteenth Conference on Inductive Logic Programming*, Leuven, Belgium.
- **L. Torrey, J. Shavlik, T. Walker & R. Maclin (2008).**
[Rule Extraction for Transfer Learning](#). In J. Diederich, editor, *Rule Extraction from Support Vector Machines*, pp. 67-82. Springer.
- **L. Torrey, T. Walker, R. Maclin & J. Shavlik (2008).**
[Advice Taking and Transfer Learning: Naturally Inspired Extensions to Reinforcement Learning](#). *AAAI Fall Symposium on Naturally Inspired AI*, Washington, DC.
- **R. Maclin, E. Wild, J. Shavlik, L. Torrey and T. Walker (2007).**
[Refining Rules Incorporated into Knowledge-Based Support Vector Learners Via Successive Linear Programming \(PDF\)](#). *Proceedings of the Twenty Second National Conference on Artificial Intelligence (AAAI'07)*, Vancouver, BC.
- **L. Torrey, J. Shavlik, T. Walker and R. Maclin (2007).**
[Relational Macros for Transfer in Reinforcement Learning. \(PDF\)](#). *Proceedings of the Seventeenth Conference on Inductive Logic Programming (ILP'07)*, Corvallis, Oregon.
- **T. Walker, L. Torrey, J. Shavlik, and R. Maclin (2007).**
[Building Relational World Models for Reinforcement Learning. \(PDF\)](#). *Proceedings of the Seventeenth Conference on Inductive Logic Programming (ILP'07)*, Corvallis, Oregon.
- **R. Maclin, J. Shavlik, T. Walker and L. Torrey (2006).**
[A Simple and Effective Method for Incorporating Advice into Kernel Methods \(PDF\)](#). *Proceedings of the Twenty First National Conference on Artificial Intelligence (AAAI'06)*, Boston, MA.

- **L. Torrey, J. Shavlik, T. Walker and R. Maclin (2006).**
[Skill Acquisition via Transfer Learning and Advice Taking. \(PDF\)](#) . *Proceedings of the Seventeenth European Conference on Machine Learning (ECML'06)*, Berlin, Germany.
- **R. Maclin, J. Shavlik, L. Torrey, T. Walker and E. Wild (2005).**
[Giving Advice about Preferred Actions to Reinforcement Learners Via Knowledge-Based Kernel Regression \(PDF\)](#) . *Proceedings of the Twentieth National Conference on Artificial Intelligence (AAAI'05)*, Pittsburgh, PA.
- **R. Maclin, J. Shavlik, L. Torrey and T. Walker (2005).**
[Knowledge Based Support Vector Regression for Reinforcement Learning \(PDF\)](#) . *IJCAI'05 Workshop on Reasoning, Representation, and Learning in Computer Games*, Edinburgh, Scotland.
- **L. Torrey, T. Walker, J. Shavlik and R. Maclin (2005).**
[Using Advice to Transfer Knowledge Acquired in One Reinforcement Learning Task to Another. \(PDF\)](#) . *Proceedings of the Sixteenth European Conference on Machine Learning (ECML'05)*, Porto, Portugal.
- **L. Torrey, T. Walker, J. Shavlik and R. Maclin (2005).**
[Knowledge Transfer Via Advice Taking \(PDF\)](#) . *Proceedings of the Third International Conference on Knowledge Capture (KCAP'05)*, Banff, Canada. Poster (PDF). Abstract.
- **M. Joshi, T. Pedersen and R. Maclin (2005).**
[A Comparative study of support vector machines applied to the supervised word sense disambiguation problem in the medical domain \(PDF\)](#) . *Proceedings of the 2nd Indian International conference on Artificial Intelligence (IICAI-05)*, Pune, India.
- **T. Walker, J. Shavlik and R. Maclin (2004).**
[Relational Reinforcement Learning via Sampling the Space of First-Order Conjunctive Features \(PDF\)](#) . *Proceedings of the ICML Workshop on Relational Reinforcement Learning*, Banff, Canada.
- **Bennett, K., Demiriz, A. and Maclin, R. (2002).**
[Exploiting Unlabeled Data in Ensemble Methods \(PDF\)](#) *Proceedings of the Eighth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, Edmonton, Alberta, Canada.
- **Opitz, D. and Maclin, R. (1999).**
[Popular ensemble methods: An empirical study \(PDF\)](#) [\(Postscript\)](#) . *Journal of AI Research*, 11, 169-198.
- **Maclin, R. (1998).**
[Boosting classifiers regionally. \(PDF\)](#) [\(Postscript\)](#) . *Proceedings of the Fifteenth National Conference on Artificial Intelligence*, pp. 700-705, Madison, WI.
- **Maclin, R. and Shavlik, J. W. (1998).**
[Creating advice-taking reinforcement learners. \(PDF\)](#) [\(Postscript\)](#) . in S. Thrun and L. Pratt (eds) *Learning to Learn*, Kluwer Academic.
- **Maclin, R. and Opitz, D. (1997).**
[An empirical comparison of bagging and boosting. \(PDF\)](#) [\(Postscript\)](#) . *Proceedings of the Fourteenth National Conference on Artificial Intelligence*, Providence, RI.
- **Asker, L. and Maclin, R. (1997).**
[Feature engineering and classifier selection: A case study in Venusian volcano detection. \(PDF\)](#) [\(Postscript\)](#) . *Proceedings of the Fourteenth International Conference on Machine Learning*, Nashville, TN.
- **Asker, L. and Maclin, R. (1997).**
[Ensembles as a sequence of classifiers. \(PDF\)](#) [\(Postscript\)](#) . *Proceedings of the Fifteenth International Joint Conference on Artificial Intelligence*, Nagoya, Japan.
- **Maclin, R. and Shavlik, J. W. (1996).**
[Creating advice-taking reinforcement learners. \(PDF\)](#) [\(Postscript\)](#) . *Machine Learning*, 22, 251-281.

- **Maclin, R. and Shavlik, J. W. (1995).**
[Combining the predictions of multiple classifiers: Using competitive learning to initialize neural networks. \(PDF\)](#) [\(Postscript\)](#). *Proceedings of the Fourteenth International Joint Conference on Artificial Intelligence*, Montreal, Canada.
- **Maclin, R. (1995).**
 Learning from Instruction and Experience: Methods for Incorporating Procedural Domain Theories into Knowledge-Based Neural Networks. Ph.D. Thesis, Department of Computer Sciences, University of Wisconsin-Madison. (Also appears as UW Technical Report CS-TR-95-1285)
[First half \(Postscript\)](#)
[First half \(PDF\)](#)
[Second half \(Postscript\)](#)
[Second half \(PDF\)](#)
- **Maclin, R. and Shavlik, J. W. (1994).**
[Incorporating Advice into Agents that Learn from Reinforcements. \(PDF\)](#) [\(Postscript\)](#). *Proceedings of the Twelfth National Conference on Artificial Intelligence*, pp. 694-699, Seattle, WA. (A longer version appears as UW-CS [TR 1227 \(PDF\)](#) [\(Postscript\)](#).)
- **Maclin, R. and Shavlik, J. W. (1993).**
[Using Knowledge-Based Neural Networks to Improve Algorithms: Refining the Chou-Fasman Algorithm for Protein Folding. \(PDF\)](#) [\(Postscript\)](#). *Machine Learning*, 11 (2/3), pp. 195-215. Other versions of this paper appear in the *Proceedings of the Tenth National Conference on Artificial Intelligence*, 1992, pp. 165-170, and in Hanson, S., Drastal, G. and Rivest, R., eds., *Computational Learning Theory and Natural Learning Systems*, 1994, MIT Press.
- **Maclin, R. and Shavlik, J. W. (1991).**
[Refining Domain Theories Expressed as Finite-State Automata. \(PDF\)](#) [\(Postscript\)](#). *Machine Learning: Proceedings of the Eighth International Conference*, pp. 524-528, Chicago, IL.
- **Stewart, J. and Maclin, R. (1990).**
 Representing Genotype-to-Phenotype Mappings. *Journal of Biological Education*, 24 (2), pp. 113-116.
- **Maclin, R. and Shavlik, J. W. (1989).**
 Enriching Vocabularies Using Explanation-Based Learning. *Machine Learning: Proceedings of the Sixth International Conference*, pp. 444-446, Ithaca, NY.
- **Koedinger, K., Maclin, R., Streibel, M. and Stewart, J. (1987).**
 Intelligent Tutoring Systems Design Issues for a Genetics Laboratory Called MENDEL. *Proceedings of the Third International Conference on Artificial Intelligence and Education*, Pittsburgh, PA.