

Multi-Label Classification Bibliography

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[1], [2], [3], [5], [4], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17], [18], [19], [20], [21], [22], [23], [24], [25], [26], [28], [27], [29], [30], [31], [32], [33], [34], [35], [36], [37], [38], [39], [40], [41], [42], [43], [44], [45], [46], [47], [48], [49], [50], [51], [52], [53], [54], [55], [56], [57], [58], [59], [60], [61], [62], [63], [64], [65].

References

- [1] Zafer Barutcuoglu, Robert E. Schapire, and Olga G. Troyanskaya. Hierarchical multi-label prediction of gene function. *Bioinformatics*, 22(7):830–836, 2006.
- [2] H. Blockeel, L. Schietgat, J. Struyf, S. Dz?eroski, and A. Clare. Decision trees for hierarchical multilabel classification: A case study in functional genomics. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 4213 LNAI:18–29, 2006.
- [3] M.R. Boutell, J. Luo, X. Shen, and C.M. Brown. Learning multi-label scene classification. *Pattern Recognition*, 37(9):1757–1771, 2004.
- [4] Klaus Brinker, Johannes Furnkranz, and Eyke Hullermeier. A unified model for multilabel classification and ranking. In *Proceedings of the 17th European Conference on Artificial Intelligence (ECAI '06)*, pages 489–493, Riva del Garda, Italy, Aug/Sept 2006.
- [5] Klaus Brinker and Eyke Hullermeier. Case-based multilabel ranking. In *Proceedings of the 20th International Conference on Artificial Intelligence (IJCAI '07)*, pages 702–707, Hyderabad, India, Jan 2007.

- [6] Nicolo Cesa-Bianchi, Claudio Gentile, and Luca Zaniboni. Incremental algorithms for hierarchical classification. *Journal of Machine Learning Research*, 7:31–54, 2006.
- [7] Yu-Chuan Chang, Shyi-Ming Chen, and Churn-Jung Liao. A new inductive learning method for multilabel text categorization. In *Proceedings of the 19th International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems (IEA/AIE'06)*, pages 1249–1258, 2006.
- [8] Yu-Chuan Chang, Shyi-Ming Chen, and Churn-Jung Liao. Multilabel text categorization based on a new linear classifier learning method and a category-sensitive refinement method. *Expert Systems with Applications*, In Press, 2007.
- [9] Junli Chen, Xuezhong Zhou, and Zhaohui Wu. A multi-label chinese text categorization system based on boosting algorithm. In *Proceedings of the 4th International Conference on Computer and Information Technology (CIT'04)*, pages 1153–1158, 2004.
- [10] Weizhu Chen, Jun Yan, Benyu Zhang, Zheng Chen, and Qiang Yang. Document transformation for multi-label feature selection in text categorization. *icdm*, 0:451–456, 2007.
- [11] A. Clare and R.D. King. Knowledge discovery in multi-label phenotype data. In *Proceedings of the 5th European Conference on Principles of Data Mining and Knowledge Discovery (PKDD 2001)*, pages 42–53, Freiburg, Germany, 2001.
- [12] Koby Crammer and Yoram Singer. A family of additive online algorithms for category ranking. *Journal of Machine Learning Research*, 3:1025–1058, 2003.
- [13] F. de Comite, R. Gilleron, and M. Tommasi. Learning multi-label alternating decision trees from texts and data. In *Proceedings of the 3rd International Conference on Machine Learning and Data Mining in Pattern Recognition (MLDM 2003)*, pages 35–49, Leipzig, Germany, July 5-7 2003.
- [14] S. Diplaris, G. Tsoumakas, P. Mitkas, and I. Vlahavas. Protein classification with multiple algorithms. In *Proceedings of the 10th Panhellenic Conference on Informatics (PCI 2005)*, pages 448–456, Volos, Greece, November 2005.
- [15] A. Elisseeff and J. Weston. A kernel method for multi-labelled classification. In *Advances in Neural Information Processing Systems 14*, 2002.
- [16] S. Gao, W. Wu, C.-H. Lee, and T.-S. Chua. A MFoM learning approach to robust multiclass multi-label text categorization. In *Proceedings of the 21st international conference on Machine learning (ICML '04)*, page 42, Banff, Alberta, Canada, 2004.

- [17] N. Ghamrawi and A. McCallum. Collective multi-label classification. In *Proceedings of the 3005 ACM Conference on Information and Knowledge Management (CIKM '05)*, pages 195–200, Bremen, Germany, 2005.
- [18] S. Godbole and S. Sarawagi. Discriminative methods for multi-labeled classification. In *Proceedings of the 8th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2004)*, pages 22–30, 2004.
- [19] T. Goncalves and P. Quaresma. A preliminary approach to the multilabel classification problem of portuguese juridical documents. In *Proceedings of the 11th Portuguese Conference on Artificial Intelligence (EPIA '03)*, pages 435–444, 2003.
- [20] Shuiwang Ji, Lei Tang, Shipeng Yu, and Jieping Ye. Extracting shared subspace for multi-label classification. In *Proceedings of the 14th SIGKDD International Conference on Knowledge Discovery and Data Mining*, Las Vegas, USA, 2008.
- [21] Matthew Johnson and Roberto Cipolla. Improved image annotation and labelling through multi-label boosting. In *Proceedings of 2005 British Machine Vision Conference (BMVC '05)*, 2005.
- [22] Feng Kang, Rong Jin, and Rahul Sukthankar. Correlated label propagation with application to multi-label learning. In *CVPR '06: Proceedings of the 2006 IEEE Computer Society Conference on Computer Vision and Pattern Recognition*, pages 1719–1726, New York City, NY, USA, 2006. IEEE Computer Society.
- [23] Ioannis Katakis, Grigorios Tsoumakias, and Ioannis Vlahavas. Multilabel text classification for automated tag suggestion. In *Proceedings of the ECML/PKDD 2008 Discovery Challenge*, Antwerp, Belgium, 2008.
- [24] B. Lauser and A. Hotho. Automatic multi-label subject indexing in a multilingual environment. In *Proceedings of the 7th European Conference in Research and Advanced Technology for Digital Libraries (ECDL 2003)*, pages 140–151, 2003.
- [25] T. Li and M. Ogihara. Detecting emotion in music. In *Proceedings of the International Symposium on Music Information Retrieval*, pages 239–240, Washington D.C., USA, 2003.
- [26] T. Li and M. Ogihara. Toward intelligent music information retrieval. *IEEE Transactions on Multimedia*, 8(3):564–574, 2006.
- [27] Tao Li, Chengliang Zhang, and Shenghuo Zhu. Empirical studies on multi-label classification. In *ICTAI '06: Proceedings of the 18th IEEE International Conference on Tools with Artificial Intelligence*, pages 86–92, Washington, DC, USA, 2006. IEEE Computer Society.

- [28] Xuchun Li, Lei Wang, and Eric Sung. Multi-label svm active learning for image classification. In *IEEE 2004 International Conference on Image Processing (ICIP '04)*, pages 2207–2210, 2004.
- [29] X. Luo and A.N. Zincir-Heywood. Evaluation of two systems on multi-class multi-label document classification. In *Proceedings of the 15th International Symposium on Methodologies for Intelligent Systems*, pages 161–169, 2005.
- [30] A. McCallum. Multi-label text classification with a mixture model trained by em. In *Proceedings of the AAAI' 99 Workshop on Text Learning*, 1999.
- [31] R. McDonald, K. Crammer, and F. Pereira. Flexible text segmentation with structured multilabel classification. In *Proceedings of Human Language Technology Conference and Conference on Empirical Methods in Natural Language Processing (HLT/EMNLP 2005)*, pages 987–994, Vancouver, British Columbia, Canada, 2005. Association for Computational Linguistics.
- [32] Eneldo Loza Mencia and Johannes Furnkranz. Efficient pairwise multilabel classification for large scale problems in the legal domain. In *12th European Conference on Principles and Practice of Knowledge Discovery in Databases, PKDD 2008*, Antwerp, Belgium, 2008.
- [33] A. Montejó-Ráez, R. Steinberger, and L. A. Ureña López. Adaptive selection of base classifiers in one-against-all learning for large multi-labeled collections. In *Advances in Natural Language Processing: 4th International Conference, EsTAL 2004*, pages 1–12, 2004.
- [34] A. Montejó-Ráez and L. A. Ureña López. Selection strategies for multi-label text categorization. In *5th International Conference on Natural Language Processing, FinTAL 2006*, pages 585–592, 2006.
- [35] John P. Pestian, Christopher Brew, Pawel Matykiewicz, DJ Hovermale, Neil Johnson, K. Brettonel Cohen, and Wlodzislaw Duch. A shared task involving multi-label classification of clinical free text. In *BioNLP 2007: Biological, translational, and clinical language processing*, pages 97–104, Prague, 2007.
- [36] J. P. Pons, F. Segonne, J. D. Boissonnat, L. Rineau, M. Yvinec, and R. Keriven. High quality consistent meshing of multi-label datasets. *Information Processing in Medical Imaging*, pages 198–210, 2007.
- [37] Guo-Jun Qi, Xian-Sheng Hua, Yong Rui, Jinhui Tang, Tao Mei, and Hong-Jiang Zhang. Correlative multi-label video annotation. In *MULTIMEDIA '07: Proceedings of the 15th international conference on Multimedia*, pages 17–26, New York, NY, USA, 2007. ACM.
- [38] Volker Roth and Bernd Fischer. Improved functional prediction of proteins by learning kernel combinations in multilabel settings. In *Proceeding of*

2006 Workshop on Probabilistic Modeling and Machine Learning in Structural and Systems Biology (PMSB 2006), Tuusula, Finland, 2006.

- [39] Juho Rousu, Craig Saunders, Sandor Szedmak, and John Shawe-Taylor. Kernel-based learning of hierarchical multilabel classification methods. *Journal of Machine Learning Research*, 7:1601–1626, 2006.
- [40] Y. Schapire, R.E. Singer. Boostexter: a boosting-based system for text categorization. *Machine Learning*, 39(2/3):135–168, 2000.
- [41] X. Shen, M. Boutell, J. Luo, and C. Brown. Multi-label machine learning and its application to semantic scene classification. In *International Symposium on Electronic Imaging*, San Jose, CA, January 2004.
- [42] E. Spyromitros, G. Tsoumakas, and I. Vlahavas. An empirical study of lazy multilabel classification algorithms. In *Proc. 5th Hellenic Conference on Artificial Intelligence (SETN 2008)*, 2008.
- [43] Andreas P. Streich and Joachim M. Buhmann. Classification of multi-labeled data: A generative approach. In *12th European Conference on Principles and Practice of Knowledge Discovery in Databases, PKDD 2008*, Antwerp, Belgium, 2008.
- [44] Liang Sun, Shuiwang Ji, and Jieping Ye. Hypergraph spectral learning for multi-label classification. In *Proceedings of the 14th SIGKDD International Conference on Knowledge Discovery and Data Mining*, Las Vegas, USA, 2008.
- [45] F.A. Thabtah, P. Cowling, and Y. Peng. Mmac: A new multi-class, multi-label associative classification approach. In *Proceedings of the 4th IEEE International Conference on Data Mining, ICDM '04*, pages 217–224, 2004.
- [46] K. Trohidis, G. Tsoumakas, G. Kalliris, and I. Vlahavas. Multilabel classification of music into emotions. In *Proc. 9th International Conference on Music Information Retrieval (ISMIR 2008), Philadelphia, PA, USA, 2008*, 2008.
- [47] G. Tsoumakas and I. Katakis. Multi-label classification: An overview. *International Journal of Data Warehousing and Mining*, 3(3):1–13, 2007.
- [48] G. Tsoumakas, I. Katakis, and I. Vlahavas. A review of multi-label classification methods. In *Proceedings of the 2nd ADBIS Workshop on Data Mining and Knowledge Discovery (ADMKD 2006)*, pages 99–109, 2006.
- [49] G. Tsoumakas, I. Katakis, and I. Vlahavas. Effective and efficient multilabel classification in domains with large number of labels. In *Proc. ECML/PKDD 2008 Workshop on Mining Multidimensional Data (MMD'08)*, pages XX–XX, 2008.

- [50] G. Tsoumakas and I. Vlahavas. Random k-labelsets: An ensemble method for multilabel classification. In *Proceedings of the 18th European Conference on Machine Learning (ECML 2007)*, pages 406–417, Warsaw, Poland, September 17-21 2007.
- [51] Rosane M.M. Vallim, David E. Goldberg, Xavier Llorà, Thyago S.P.C. Duque, and André C.P.L.F. Carvalho. A new approach for multi-label classification based on default hierarchies and organizational learning. In *GECCO '08: Proceedings of the 2008 GECCO conference companion on Genetic and evolutionary computation*, pages 2017–2022, 2008.
- [52] A. Veloso, M. Jr. Wagner, M. Goncalves, and M. Zaki. Multi-label lazy associative classification. In *Proceedings of the 11th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD 2007)*, volume LNAI 4702, pages 605–612, Warsaw, Poland, September 17-21 2007. Springer.
- [53] Shu-Peng Wan and Jian-Hua Xu. A multi-label classification algorithm based on triple class support vector machine. In *Proc. 2007 International Conference on Wavelet Analysis and Pattern Recognition (ICWAPR'07)*, Beijing, China, November 2-4 2007.
- [54] L. Wang, M. Chang, and J. Feng. Parallel and sequential support vector machines for multi-label classification. *International Journal of Information Technology*, 11(9):11–18, 2005.
- [55] A. Wiczorkowska, P. Synak, and Z.W. Ras. Multi-label classification of emotions in music. In *Proceedings of the 2006 International Conference on Intelligent Information Processing and Web Mining (IIPWM'06)*, pages 307–315, 2006.
- [56] M. Wu, W. Li, Q. Chen, and Q. Lu. Normalizing chinese temporal expressions with multi-label classification. In *Proceedings of 2005 IEEE International Conference on Natural Language Processing and Knowledge Engineering*, pages 318–323, 2005.
- [57] Kai Yu, Shipeng Yu, and Volker Tresp. Multi-label informed latent semantic indexing. In *SIGIR '05: Proceedings of the 28th annual international ACM SIGIR conference on Research and development in information retrieval*, pages 258–265, Salvador, Brazil, 2005. ACM Press.
- [58] Jian Zhang, Zoubin Ghahramani, and Yiming Yang. Learning multiple related tasks using latent independent component analysis. In Y. Weiss, B. Schölkopf, and J. Platt, editors, *Advances in Neural Information Processing Systems 18*, pages 1585–1592. MIT Press, Cambridge, MA, 2006.
- [59] M-L Zhang and Z-H Zhou. A k-nearest neighbor based algorithm for multi-label classification. In *Proceedings of the 1st IEEE International Conference on Granular Computing*, pages 718–721, 2005.

- [60] M-L Zhang and Z-H Zhou. Multi-label neural networks with applications to functional genomics and text categorization. *IEEE Transactions on Knowledge and Data Engineering*, 18(10):1338–1351, 2006.
- [61] M-L Zhang and Z-H Zhou. Ml-knn: A lazy learning approach to multi-label learning. *Pattern Recognition*, 40(7):2038–2048, 2007.
- [62] Min-Ling Zhang and Zhi-Hua Zhou. Multi-label learning by instance differentiation. In *Proceedings of the Twenty-Second AAAI Conference on Artificial Intelligence*, pages 669–674, Vancouver, British Columbia, Canada, 2007. AAAI Press.
- [63] Yin Zhang and Zhi-Hua Zhou. Multi-label dimensionality reduction via dependence maximization. In *Proceedings of the Twenty-Third AAAI Conference on Artificial Intelligence, AAAI 2008*, pages 1503–1505, Chicago, Illinois, USA, 2008. AAAI Press.
- [64] Z. Zhou and M. Zhang. Multi-instance multi-label learning with application to scene classification. In *Advances in Neural Information Processing Systems*, pages 1609–1616, 2007.
- [65] Shenghuo Zhu, Xiang Ji, Wei Xu, and Yihong Gong. Multi-labelled classification using maximum entropy method. In *Proceedings of the 28th annual international ACM SIGIR conference on Research and development in Information Retrieval*, pages 274–281, 15-19 August 2005.