

Publications of the Neural Networks Research Centre

Publications are in alphabetical order by the first author.

2004

1. Beliaev, I.; Kozma, R.; Lendasse, A. Robust Time Series Prediction Using KIII Model. *Proc. of IDS'04 Symposium, FedEx Institute of Technology (FIT)*, University of Memphis, TN, USA, April 24-26, 2004.
2. Bochko, V.; Kalenova, D.; Harva, M.; Parkkinen, J. Spectral Color Picking Technique Using Nonlinear PCA. Lappeenranta, Finland: Lappeenranta University of Technology, 2004. (Technical Report).
3. Creutz, M.; Lagus, K. Induction of a Simple Morphology for Highly-Inflecting Languages. *Proc. of 7th Meeting of the ACL Special Interest Group in Computational Phonology (SIGPHON)*, Barcelona, Spain, July 26, 2004. pp. 43-51.
4. Creutz, M.; Lindén, K. Morpheme Segmentation Gold Standards for Finnish and English. Espoo, Finland: 2004. (Helsinki University of Technology, Publications in Computer and Information Science Report A77).
5. Girdziusas, R.; Laaksonen, J. Gaussian Process Regression with Fluid Hyperpriors. *Proc. of 11th International Conference on Neural Information Processing*, Calcutta, India, November 22-25, 2004. Berlin Heidelberg 2004, Springer-Verlag, pp. 567-572.
6. Harva, M.; Kaban, A. Bayesian Inference of Independent Components from Elliptical Stellar Population Spectra. Birmingham, U.K.: School of Computer Science, The University of Birmingham, 2004. (Technical Report).
7. Hiisilä, H.; Bingham, E. Dependencies Between Transcription Factor Binding Sites: Comparison Between ICA, NMF, PLSA and Frequent Sets. *Proc. of 4th IEEE International Conference on Data Mining*, Brighton, UK, November 1-4, 2004. pp. 114-121.
8. Himberg, J.; Hyvärinen, A.; Esposito, F. Validating the Independent Components of Neuroimaging Time-Series via Clustering and Visualization. *Neuroimage*, 2004. Vol. 22, No. 3, pp. 1214-1222.
9. Hirsimäki, T.; Kurimo, M. Decoder Issues in Unlimited Finnish Speech Recognition. *Proc. of 6th Nordic Signal Processing Symposium (Norsig 2004)*, Espoo, Finland, June 9-11, 2004. pp. 320-323.

10. Honkela, A. Approximating Nonlinear Transformations of Probability Distributions for Nonlinear Independent Component Analysis. *Proc. of 2004 IEEE International Joint Conference on Neural Networks (IJCNN 2004)*, Budapest, Hungary, July 25-29, 2004. pp. 2169-2174.
11. Honkela, A.; Harmeling, S.; Lundqvist, L.; Valpola, H. Using Kernel PCA for Initialisation of Variational Bayesian Nonlinear Blind Source Separation Method. *Proc. of Fifth International Conference Independent Component Analysis and Blind Signal Separation (ICA 2004)*, Granada, Spain, September 22-24, 2004. Springer-Verlag, pp. 790-797.
12. Honkela, A.; Valpola, H. Variational Learning and Bits-Back Coding: An Information-Theoretic View to Bayesian Learning. *IEEE Transactions on Neural Networks*, 2004. Vol. 15, No. 4, pp. 800-810.
13. Honkela, T.; Hyvärinen, A. Linguistic Feature Extraction using Independent Component Analysis. *Proc. of International Joint Conference on Neural Networks, IJCNN 2004*, Budapest, Hungary, July 25-29, 2004. pp. 279-284.
14. Honkela, T.; Nordfors, R.; Tuuli, R. Document Maps for Competence Management. *Proc. of Symposium on Professional Practice in AI, IFIP 18th World Computer Congress*, Toulouse, France, August 22-27, 2004. pp. 31-39.
15. Härmä, A.; Somervuo, P. Classification of the Harmonic Structure in Bird Vocalization. *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'04)*, Montreal, Canada, May 17-21, 2004. Vol. V, pp. 701-704.
16. Iivarinen, J.; Pakkanen, J.; Rauhamaa, J. SOM-based System for Web Surface Inspection. *Proc. SPIE 5303, Machine Vision Applications in Industrial Inspection XII*, San Jose, California, January 21-22, 2004. pp. 178-187.
17. Iivarinen, J.; Rautkorpi, R.; Pakkanen, J.; Rauhamaa, J. Content-Based Retrieval of Surface Defect Images with PicSOM. *International Journal of Fuzzy Systems*, 2004. Vol. 6, No. 3, pp. 160-166.
18. Ilin, A.; Achard, S.; Jutten, S. Bayesian versus Constrained Structure Approaches for Source Separation in Post-Nonlinear Mixtures. *Proc. of International Joint Conference on Neural Networks (IJCNN 2004)*, Budapest, Hungary, July 25-29, 2004. pp. 2181-2186.
19. Ilin, A.; Honkela, A. Post-Nonlinear Independent Component Analysis by Variational Bayesian Learning. *Proc. of 5th Int. Symp. on Independent Component Analysis and Blind Signal Separation (ICA2004)*, Granada, Spain, September 22-24, 2004. pp. 766-773.
20. Ilin, A.; Valpola, H.; Oja, E. Nonlinear Dynamical Factor Analysis for State Change Detection. *IEEE Transactions on Neural Networks*, 2004. Vol. 15, No. 3, pp. 559-575.
21. Inki, M. A Model for Analyzing Dependencies Between Two ICA Features in Natural Images. *Proc. of Fifth International Conference on Independent Component Analysis (ICA2004)*, Granada, Spain, Sept. 22-24, 2004. pp. 914-921.

22. Inki, M. Natural Image Patch Statistics Conditioned on Activity of an Independent Component. Espoo, Finland: Helsinki University of Technology, 2004. (Publications in Computer and Information Science Report A79).
23. Jutten, C.; Karhunen, J. Advances in Blind Source Separation (BSS) and Independent Component Analysis (ICA) for Nonlinear Mixtures. *International Journal of Neural Systems*, 2004. Vol. 14, No. 5, pp. 267-292.
24. Jørgensen, A.C.; Rantanen, J.; Luukkonen, P.; Laine, S.; Yliruusi, J. Visualization of a Pharmaceutical Unit Operation: Wet Granulation. *Analytical Chemistry*, 2004. Vol. 76, No. 18, pp. 5331-5338.
25. Kaban, A.; Bingham, E.; Hirsimäki, T. Learning to Read Between the Lines: The Aspect Bernoulli Model. *Proc. of 4th SIAM International Conference on Data Mining*, Lake Buena Vista, Florida, USA, April 22-24, 2004. pp. 462-466.
26. Karp, E.; Gävert, H.; Särelä, J.; Vigário, R. Independent Component Analysis Decomposition of Structural MRI. *Proc. of 2nd IASTED International Conference on Biomedical Engineering (BioMED 04)*, Innsbruck, Austria, Feb. 16-18, 2004. pp. 83-87.
27. Karp, E.; Vigário, R. Unsupervised MRI Tissue Classification by Support Vector Machines. *Proc. of 2nd IASTED International Conference on Biomedical Engineering (BioMED 04)*, Innsbruck, Austria, Feb. 16-18, 2004. pp. 88-91.
28. Kaski, S.; Sinkkonen, J. Principle of Learning Metrics for Data Analysis. *Journal of VLSI Signal Processing*, Special Issue on Machine Learning for Signal Processing, 2004. Vol. 37, pp. 177-188.
29. Kohonen, T. Self-Organizing Tactile Maps. Espoo, Finland: Helsinki University of Technology, 2004. (Publications in Computer and Information Science, Report A76).
30. Koskela, M.; Laaksonen, J.; Oja, E. Entropy-Based Measures for Clustering and SOM Topology Preservation Applied to Content-Based Image Indexing and Retrieval. *Proc. of 17th International Conference on Pattern Recognition (ICPR 2004)*, Cambridge, UK, August 2004. pp. 1005-1008.
31. Koskela, M.; Laaksonen, J.; Oja, E. Use of Image Subset Features in Image Retrieval with Self-Organizing Maps. *Proc. of 3rd International Conference on Image and Video Retrieval (CIVR 2004)*, Dublin, Ireland, July 2004. pp. 508-516.
32. Kurimo, M.; Turunen, V.; Ekman, I. An Evaluation of a Spoken Document Retrieval Baseline System in Finnish. *Proc. of International Conference on Spoken Language Processing (ICSLP 2004)*, Jeju Island, Korea, Oct. 4-8, 2004. pp. II-1585-1588.
33. Kurimo, M.; Turunen, V.; Ekman, I. Speech Transcription and Spoken Document Retrieval in Finnish. *Proc. of Workshop on Multimodal Interaction and Related Machine Learning Algorithms (MLMI 2004)*, Martigny, Switzerland, June 21-23, 2004.
34. Kurimo, M.; Zhou, B.; Huang, R.; Hansen, J. H. L. Language Modeling Structures in Audio Transcription for Retrieval of Historical Speeches. *Proc. of European Signal Processing Conference, EUSIPCO 2004*, Vienna, Austria, Sept. 6-10, 2004. pp. 557-560.

35. Kylväjä, M.; Hätönen, K.; Kumpulainen, P.; Laiho, J.; Lehtimäki, P.; Raivio, K.; Vehviläinen, P. Trial Report on Self-Organizing Map based Analysis Tool for Radio Networks. *Proc. of IEEE Semiannual Vehicular Technology Conference*, Milan, Italy, May 17-19, 2004.
36. Könönen, V. Asymmetric Multiagent Reinforcement Learning. *Web Intelligence and Agent Systems: An International Journal (WIAS)*, 2004. Vol. 2, No. 2, pp. 105-121.
37. Könönen, V. Gradient Descent for Symmetric and Asymmetric Multiagent Reinforcement Learning. Espoo, Finland: 2004. 18 p. (Helsinki University of Technology, Publications in Computer and Information Science, Report A78).
38. Könönen, V. Hybrid Model for Multiagent Reinforcement Learning. *Proc. of International Joint Conference on Neural Networks (IJCNN-2004)*, Budapest, Hungary, July 25-29, 2004. pp. 1793-1798.
39. Könönen, V. Policy Gradient Method for Team Markov Games. *Proc. of Fifth International Conference on Intelligent Data Engineering and Automated Learning (IDEAL-2004)*, Exeter, UK, August 25-27, 2004. pp. 733-739.
40. Könönen, V.; Oja, E. Asymmetric Multiagent Reinforcement Learning in Pricing Applications. *Proc. of International Joint Conference on Neural Networks (IJCNN-2004)*, Budapest, Hungary, July 25-29, 2004. pp. 1097-1102.
41. Laakso, M.-L.; Leinonen, L.; Lindblom, N.; Joutsiniemi, S.-L.; Kaski, M. Wrist Actigraphy in Estimation of Sleep and Wake in Intellectually Disabled Subjects with Motor Handicaps. *Sleep Medicine*, 2004. Vol. 5, pp. 541-550.
42. Laaksonen, J.; Koskela, M.; Oja, E. Class Distributions on SOM Surfaces for Feature Extraction and Object Retrieval. *Neural Networks*, 2004. Vol. 17, No. 8-9, pp. 1121-1133.
43. Lagus, K.; Kaski, S.; Kohonen, T. Mining Massive Document Collections by the WEBSOM Method. *Information Sciences*, 2004. Vol. 163, No. 1-3, pp. 135-156.
44. Laine, S.; Similä, T. Using SOM-Based Data Binning to Support Supervised Variable Selection. *Proc. of 11th International Conference on Neural Information Processing (ICONIP 2004)*, Calcutta, India, Nov. 22-25, 2004. pp. 172-180.
45. Lendasse, A.; François, D.; Rossi, F.; Wertz, V.; Verleysen, M. Mutual Information for the Selection of Relevant Variables in Spectrometric Nonlinear Modeling. *Proc. of Chimieométrie 2004*, Paris, France, November 30 - December 1, 2004.
46. Lendasse, A.; Oja, E.; Simula, O.; Verleysen, M. Time Series Benchmarking Competition: The CATS Benchmark. *Proc. of International Joint Conference on Neural Networks (IJCNN'04)*, Budapest, Hungary, July 26-29, 2004. pp. 1615-1620.
47. Lendasse, A.; Simon, G.; Wertz, V.; Verleysen, M. Fast Bootstrap for Least-Square Support Vector Machines. *Proc. of European Symposium on Artificial Neural Networks (ESANN 2004)*, Bruges, Belgium, April 28-30, 2004. pp. 525-530.
48. Lendasse, A.; Wertz, V.; Simon, G.; Verleysen, M. Fast Bootstrap Applied to LS-SVM for Long Term Prediction of Time Series. *Proc. of International Joint Conference on Neural Networks (IJCNN 2004)*, Budapest, Hungary, July 25-29, 2004. pp. 705-710.

49. Lindén, K. Evaluation of Linguistic Features for Word Sense Disambiguation with Self-Organized Document Maps. *Journal of the Computers and the Humanities*, 2004. Vol. 38, No. 4, pp. 417-435.
50. Luysaert, S.; Sulkava, M.; Raitio, H.; Hollmén, J. Evaluation of Forest Nutrition Based on Large-Scale Foliar Surveys: Are Nutrition Profiles the Way of the Future? *Journal of Environmental Monitoring*, 2004. Vol. 6, No. 2, pp. 160-167.
51. Müller, K.-R.; Vigário, R.; Meinecke, F.; Ziehe, A. Blind Source Separation Techniques for Decomposing Event Related Brain Signals. *Int. Journal of Bifurcation and Chaos*, 2004. Vol. 14, No. 2, pp. 773-792 .
52. Mäntyjärvi, J.; Himberg, J.; Kangas, P.; Tuomela, U.; Huuskonen, P. Sensor Signal Data Set for Exploring Context Recognition of Mobile Devices. *Proc. of Workshop "Benchmarks and a database for context recognition"*, in conjunction with the 2nd Int. Conf. on Pervasive Computing (PERVASIVE 2004), Linz/Vienna, Austria, April 18-23, 2004. (Electronic publication, Swiss Federal Institute of Technology Zurich, Electronics laboratory)
53. Mäntyjärvi, J.; Nybergh, K.; Himberg, J.; Hjelt, K. Touch Detection System for Mobile Terminals. *Proc. of Mobile Human-Computer Interaction - MobileHCI 2004: 6th International Symposium*, Glasgow, UK, September 13-16, 2004. Heidelberg 2004, Springer-Verlag, pp. 331-336.
54. Nikkilä, J.; Roos, C.; Kaski, S. Exploring Dependencies Between Yeast Stress Genes and their Regulators. *Proc. of International Conference on Intelligent Data Engineering and Automated Learning (IDEAL 2004)*, Exeter, UK, August 25-27, 2004. Springer, pp. 92-98.
55. Oja, E. Applications of Independent Component Analysis. *Proc. of International Conference on Neural Information Processing (ICONIP'04)*, Calcutta, India, Nov. 22-25, 2004.
56. Oja, E. Blind Source Separation: Neural Net Principles and Applications. *Proc. of SPIE Defense and Security Symposium*, Orlando, USA, April 12-16, 2004. Vol. 5439, pp. 1-14.
57. Oja, E. Finding Clusters and Components by Unsupervised Learning. *Proc. of IAPR International Workshop on Statistical Pattern Recognition (SPR2004)*, Lisbon, Portugal, August 18-20, 2004. pp. 1-15.
58. Oja, E. Patterns, Clusters, and Components - What Data is Made of. *Proc. of International Joint Conference on Neural Networks (IJCNN'04)*, Budapest, Hungary, July 26-29, 2004. p. 3.
59. Oja, E.; Harmeling, S; Almeida, L. Independent Component Analysis and Beyond. *Signal Processing*, 2004. Vol. 84, No. 2, pp. 215-216.
60. Oja, E.; Plumbley, M. Blind Separation of Positive Sources by Globally Convergent Gradient Search. *Neural Computation*, 2004. Vol. 16, No. 9, pp. 1811-1825.
61. Oja, M.; Sperber, G.; Blomberg, J.; Kaski, S. Grouping and Visualizing Human Endogenous Retroviruses by Bootstrapping Median Self-organizing Maps. *Proc. of IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology*, San Diego, California, USA, October 7-8, 2004. pp. 95-101.

62. Ojala, T.; Koskela, M.; Matinmikko, E.; Rautiainen, M.; Laaksonen, J.; Oja, E. Task-Based User Evaluation of Content-Based Image Database Browsing Systems. *Proc. of 3rd International Conference on Image and Video Retrieval (CIVR 2004)*, Dublin, Ireland, July 2004. pp. 234-242.
63. Pakkanen, J.; Iivarinen, J. A Novel Self-Organizing Neural Network for Defect Image Classification. *Proc. of International Joint Conference on Neural Networks*, Budapest, Hungary, July 25-29, 2004. pp. 2553-2558.
64. Pakkanen, J.; Iivarinen, J.; Oja, E. The Evolving Tree - a Novel Self-Organizing Network for Data Analysis. *Neural Processing Letters*, 2004. Vol. 20, No. 3, pp. 199-211.
65. Pakkanen, J.; Turkulainen, P. The Evolving Tree Software Package. 2004. <http://www.cis.hut.fi/research/etree/>
66. Peltonen, J.; Klami, A.; Kaski, S. Improved Learning of Riemannian Metrics for Exploratory Data Analysis. *Neural Networks*, 2004. Vol. 17, pp. 1087-1100.
67. Peltonen, J.; Sinkkonen, J.; Kaski, S. Sequential Information Bottleneck for Finite Data. *Proc. of Twenty-First International Conference on Machine Learning (ICML 2004)*, Banff, Alberta, Canada, July 4-8, 2004. pp. 647-654.
68. Plumbley, M.; Oja, E. A "Non-negative PCA" Algorithm for Independent Component Analysis. *IEEE Trans. on Neural Networks*, 2004. Vol. 15, No. 1, pp. 66-76.
69. Principe, J.; Oja, E.; Xu, L.; Cichocki, A.; Erdogmus, D. Guest Editorial - Special issue on information theoretic learning. *IEEE Trans. on Neural Networks*, 2004. Vol. 15, No. 4, pp. 789-791.
70. Puolamäki, K.; Savia, E.; Sinkkonen, J.; Kaski, S. Two-Way Latent Grouping Model for User Preference Prediction. Espoo, Finland: Helsinki University of Technology, 2004. (Publications in Computer and Information Science, Report A80).
71. Pylkkönen, J.; Kurimo, M. Duration Modeling Techniques for Continuous Speech Recognition. *Proc. of 8th International Conference on Spoken Language Processing (Interspeech 2004)*, Jeju Island, Korea, October 4-8, 2004. pp. 385-388.
72. Pylkkönen, J.; Kurimo, M. Using Phone Durations in Finnish Large Vocabulary Continuous Speech Recognition. *Proc. of 6th Nordic Signal Processing Symposium (Norsig 2004)*, Espoo, Finland, June 9-11, 2004. pp. 324-327.
73. Raiko, T. Partially Observed Values. *Proc. of International Joint Conference on Neural Networks (IJCNN 2004)*, Budapest, Hungary, July 25-29, 2004. pp. 2825-2830.
74. Raiko, T. The Go-Playing Program Called Go81. *Proc. of Finnish Artificial Intelligence Conference (STeP 2004)*, Helsinki, Finland, September 1-3, 2004. pp. 197-206.
75. Raitio, J.; Vigário, R.; Särelä, J.; Honkela, T. Assessing Similarity of Emergent Representations Based on Unsupervised Learning. *Proc. of International Joint Conference on Neural Networks (IJCNN 2004)*, Budapest, Hungary, July 25-29, 2004. pp. 597-602.

76. Raju, K.; Phani Sudheer, B. Blind Source Separation for Interference Cancellation - A Comparison of Several Spatial and Temporal Statistics Based Techniques. *Proc. of 3rd Int. Workshop on the Internet, Telecommunications and Signal Processing*, Adelaide, Australia, Dec. 20-22, 2004.
77. Raju, K.; Ristaniemi, T.; Karhunen, J. Semi-Blind Interference Suppression on Coherent Multipath Environments. *Proc. of First Int. Symposium on Control Communications and Signal Processing (ISCCSP 2004)*, Hammamet, Tunisia, March 21-24, 2004. pp. 283-286.
78. Raju, K.; Särelä, J. A Denoising Source Separation Based Approach to Interference Cancellation for DS-CDMA Array Systems. *Proc. of 38th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, Nov. 07-10, 2004. pp. 1111-1114.
79. Rautkorpi, R.; Iivarinen, J. A Novel Shape Feature for Image Classification and Retrieval. *Proc. of International Conference on Image Analysis and Recognition*, Porto, Portugal, September 29-October 1, 2004. pp. 753-760.
80. Rautkorpi, R.; Iivarinen, J. Content-Based Image Retrieval of Web Surface Defects with PicSOM. *Proc. of International Joint Conference on Neural Networks*, Budapest, Hungary, July 25-29, 2004. pp. 1863-1868.
81. Rytönen, K.; Valpola, H.; Särelä, J. DSS Matlab Package, Software Package. 2004. <http://www.cis.hut.fi/projects/dss/>
82. Salojärvi, J.; Puolamäki, K.; Kaski, S. Relevance Feedback from Eye Movements for Proactive Information Retrieval. *Proc. of Workshop on Processing Sensory Information for Proactive Systems (PSIPS 2004)*, Oulu, Finland, June 14-15, 2004. pp. 37-42.
83. Savia, E.; Kaski, S.; Tuulos, V.; Myllymäki, P. On Text-Based Estimation of Document Relevance. *International Joint Conference on Neural Networks 2004*, Budapest, Hungary, July 25-29, 2004. pp. 3275-3280.
84. Simon, G.; Lendasse, A.; Cottrell, M.; Fort, J.-C.; Verleysen, M. Double Quantization of the Regressor Space for Long-Term Time Series Prediction: Method and Proof of Stability. *Neural Networks*, 2004. No. 8-9, pp. 1169-1181.
85. Sinkkonen, J.; Nikkilä, J.; Lahti, L.; Kaski, S. Associative Clustering. *Proc. of 15th European Conference on Machine Learning (ECML 2004)*, Pisa, Italy, Sept. 20-24, 2004. pp. 396-406.
86. Sirola, M. Decision Concepts. *International Scientific Journal of Computing*, 2004. Vol. 3, No. 2, pp. 18-22.
87. Sirola, M.; Lampi, G.; Parviainen, J. Neuro Computing in Knowledge-Based Decision Support Systems. *Proc. of EHPG-Meeting of OECD Halden Reactor Project*, Sandefjord, Norway, May 9-14, 2004. 9 p.
88. Sirola, M.; Lampi, G.; Parviainen, J. Using Self-Organizing Map in a Computerized Decision Support System. *Proc. of International Conference on Neural Information Processing (ICONIP)*, Calcutta, India, November 22-25, 2004.
89. Skripal, P.; Honkela, T. Framework for Modeling Emotions in Communities of Agents. *Proc. of 11th Finnish Artificial Intelligence Conference*, Vantaa, Finland, September 1-3, 2004. pp. 163-172.

90. Somervuo, P. Comparison of ML, MAP, and VB Based Acoustic Models in Large Vocabulary Speech Recognition. *Proc. of 8th International Conference on Spoken Language Processing (ICSLP)*, Jeju Island, Korea, October 5-8, 2004. Vol. I, pp. 701-704.
91. Somervuo, P. Online Algorithm for the Self-Organizing Map of Symbol Strings. *Neural Networks*, 2004. Vol. 17, pp. 1231-1239.
92. Somervuo, P.; Härmä, A. Bird Song Recognition Based on Syllable Histograms. *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'04)*, Montreal, Canada, May 17-21, 2004. Vol. V, pp. 825-828.
93. Sorjamaa, A.; Lendasse, A.; François, D.; Verleysen, M. Business Plans Classification with Locally Pruned Lazy Learning Models. *Proc. of ACSEG 2004, Connectionist Approaches in Economics and Management Sciences*, Lille, France, November 18-19, 2004. pp. 112-119.
94. Sulkava, M.; Tikka, J.; Hollmén, J. Sparse Regression for Analyzing the Development of Foliar Nutrient Concentrations in Coniferous Trees. *Proc. of Fourth International Workshop on Environmental Applications of Machine Learning (EAML 2004)*, Bled, Slovenia, September 2004. pp. 57-58.
95. Tikka, J.; Hollmén, J. Learning Linear Dependency Trees from Multivariate Time-series Data. *Proc. of Workshop on Temporal Data Mining: Algorithms, Theory and Applications*, in conjunction with The Fourth IEEE International Conference on Data Mining, Brighton, UK, November 2004.
96. Valpola, H., Harva, M. & Karhunen, J. Hierarchical Models of Variance Sources. *Signal Processing*, 2004. Vol. 84, No. 2, pp. 267-282.
97. Valpola, H.; Särelä, J. Accurate, Fast and Stable Denoising Source Separation Algorithms. *Proc. of 5th International Conference on Independent Component Analysis and Blind Signal Separation (ICA 2004)*, Granada, Spain, Sept. 22-24, 2004. pp. 65-72.
98. Vesanto, J. & Hollmén, J. An Automated Report Generation Tool for the Data Understanding Phase. In: Abraham, A. , Jain, L. & van der Zwaag, B. J. (eds.), *Innovations in Intelligent Systems: Design, Management and Applications, Studies in Fuzziness and Soft Computing Vol. 140*. Heidelberg 2004, Springer (Physica) Verlag, chapter 5.
99. Väyrynen, J. J.; Honkela, T. Word Category Maps based on Emergent Features Created by ICA. *Proc. of 11th Finnish Artificial Intelligence Conference*, Vantaa, Finland, September 1-3, 2004. pp. 173-185.
100. Väyrynen, J. J.; Honkela, T.; Hyvärinen, A. Independent Component Analysis of Word Contexts and Comparison with Traditional Categories. *Proc. of 6th Nordic Signal Processing Symposium - NORSIG 2004*, Espoo, Finland, June 9-11, 2004. pp. 300-303. (Electronic publication, <http://wooster.hut.fi/publications/norsig2004/>)
101. Ylipaavalniemi, J.; Vigário, R. Analysis of Auditory fMRI Recordings via ICA: A Study on Consistency. *Proc. of International Joint Conference on Neural Networks (IJCNN 2004)*, Budapest, Hungary, July 25-29, 2004. pp. 249-254.

102. Yuan, Z.; Oja, E. A FastICA Algorithm for Non-Negative Independent Component Analysis. *Proc. of 5th International Symposium on Independent Component Analysis and Blind Source Separation*, Granada, Spain, Sep. 22-24, 2004. pp. 1-8.

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1. Aksela, M.; Laaksonen, J. On Adaptive Confidences for Critic-Driven Classifier Combining. *Proc. of 3rd International Conference on Advances in Pattern Recognition 2005*, Bath, United Kingdom, August 22-25, 2005. pp. 71-80.
2. Bas, P. A Quantization Watermarking Technique Robust to Linear and Non-Linear Volumetric Distortions Using a Fractal Set of Floating Quantizers. *Proc. of Information Hiding Workshop 2005*, Barcelona, Spain, June 6-8, 2005. pp. 106-117.
3. Bas, P.; Hurri, J. Security of DM Quantization Watermarking Scheme: A Practical Study for Digital Images. *Proc. of International Workshop of Digital Watermarking*, Sienna, Italy, September 15-17, 2005. pp. 186-200.
4. Borisov, S.; Ilin, A.; Vigário, R.; Kaplan, A. Source Localization of Low- and High-Amplitude Alpha Activity: A Segmental and DSS Analysis. *Proc. of 11th Annual Meeting of Organization for Human Brain Mapping*, Toronto, Canada, June 12-16, 2005; Neuroimage, V. 26., Suppl. 1. p. 38.
5. Bounsaythip, C.; Hollmén, J.; Kaski, S.; Oresic, M. (eds.) *Proceedings of KRBIO05, Symposium on Knowledge Representation in Bioinformatics*, Espoo, Finland, June 15-17, 2005. Espoo, Finland 2005, Helsinki University of Technology. 50 p.
6. Broman, S.; Kurimo, M. Methods for Combining Language Models in Speech Recognition. *Proc. of 9th European Conference on Speech Communication and Technology, Interspeech 2005*, Lisbon, Portugal, September 4-8, 2005. pp. 1317-1320.
7. Corona, F.; Lendasse, A. Input Selection and Function Approximation using the SOM: an Application to Spectrometric Modeling. *Proc. of 5th Workshop on Self-Organizing Maps (WSOM'05)*, Paris, France, September 5-8, 2005. pp. 653-660.
8. Creutz, M.; Lagus, K. Inducing the Morphological Lexicon of a Natural Language from Unannotated Text. *Proc. of International and Interdisciplinary Conference on Adaptive Knowledge Representation and Reasoning (AKRR'05)*, Espoo, Finland, June 15-17, 2005. pp. 106-113.
9. Creutz, M.; Lagus, K. Unsupervised Morpheme Segmentation and Morphology Induction from Text Corpora Using Morfessor 1.0. Espoo, Finland: Helsinki University of Technology, 2005. (Publications in Computer and Information Science, Report A81).
10. Creutz, M.; Lagus, K.; Lindén, K.; Virpioja, S. Morfessor and Hutmegs: Unsupervised Morpheme Segmentation for Highly-Inflecting and Compounding Languages. *Proc. of Second Baltic Conference on Human Language Technologies*, Tallinn, Estonia, April 4-5, 2005. pp. 107-112.
11. Duch, W.; Kacprzyk, J.; Oja, E.; Zadrozny, S. (eds.) *Artificial Neural Networks: Biological Inspirations - ICANN 2005*. Lecture Notes in Computer Science 3696. Berlin, Germany 2005, Springer.

12. Duch, W.; Kacprzyk, J.; Oja, E.; Zadrozny, S. (eds.) *Artificial Neural Networks: Formal Models and Their Applications - ICANN 2005*. Lecture Notes in Computer Science 3697. Berlin, Germany 2005, Springer.
13. Elo, L. L.; Lahti, L.; Skottman, H.; Kyläniemi, M.; Lahesmaa, R.; Aittokallio, T. Integrating Probe-Level Expression Changes Across Generations of Affymetrix Arrays. *Nucleic Acids Research*, 2005. Vol. 33, No. 22, pp. e193.
14. Esposito, F.; Scarabino, T.; Hyvärinen, A.; Himberg, J.; Formisano, E.; Comani, S.; Tedeschi, G.; Goebel, R.; Seifritz, E.; Di Salle, F. Independent Component Analysis of fMRI Group Studies by Self-Organizing Clustering. *Neuroimage*, 2005. Vol. 25, No. 1, pp. 193-205.
15. Girdziusas, R.; Laaksonen, J. Gaussian Processes of Nonlinear Diffusion Filtering. *Proc. of IEEE-INNS-ENNS Int. Joint Conference on Neural Networks*, Montréal, Canada, July 31 - August 4, 2005. pp. 1012-1017.
16. Girdziusas, R.; Laaksonen, J. Jacobi Alternative to Bayesian Evidence Maximization in Diffusion Filtering. *Proc. of Int. Conf. on Artificial Neural Networks (ICANN 2005)*, Warsaw, Poland, September 2005. Lecture Notes in Computer Science 3697. Berlin 2005, Springer, pp. 247-252.
17. Girdziusas, R.; Laaksonen, J. Optimal Ratio of Lamé Moduli with Application to Motion of Jupiter Storms. *Proc. of 14th Scandinavian Conference on Image Analysis*, Joensuu, Finland, June 19-22, 2005. Springer-Verlag, pp. 1096-1106.
18. Girdziusas, R.; Laaksonen, J. Optimal Stopping and Constraints for Diffusion Models of Signals with Discontinuities. *Proc. of 16th European Conference on Machine Learning*, Porto, Portugal, October 3-7, 2005. pp. 576-583.
19. Girdziusas, R.; Laaksonen, J. Use of Input Deformations with Brownian Motion Filters for Discontinuous Regression. *Proc. of 3rd Int. Conf. on Advances in Pattern Recognition*, Bath, U.K., August 22-25, 2005. Springer-Verlag, pp. 219-228.
20. Hansen, J.H.L.; Huang, R.; Zhou, B.; Seadle, M.; Deller Jr., J.R.; Gurijala, A.R.; Kurimo, M.; Angkititrakul, P. SpeechFind: Advances in Spoken Document Retrieval for a National Gallery of the Spoken Word. *IEEE Transactions on Speech and Audio Processing*, 2005. Vol. 13, No. 5, pp. 712-730.
21. Harva, M.; Kabán, A. A Variational Bayesian Method for Rectified Factor Analysis. *Proc. of Int. Joint Conf. on Neural Networks (IJCNN'05)*, Montreal, Canada, July 31 - August 4, 2005. pp. 185-190.
22. Harva, M.; Raiko, T.; Honkela, A.; Valpola, H.; Karhunen, J. Bayes Blocks: An Implementation of the Variational Bayesian Building Blocks Framework. *Proc. of 21st Conference on Uncertainty in Artificial Intelligence*, Edinburgh, Scotland, July 26-29, 2005. pp. 259-266.
23. Hirsimäki, T.; Creutz, M.; Siivola, V.; Kurimo, M. Morphologically Motivated Language Models in Speech Recognition. *Proc. of International and Interdisciplinary Conference on Adaptive Knowledge Representation and Reasoning (AKRR05)*, Espoo, Finland, June 15-17, 2005. pp. 121-126.

24. Honkela, A.; Valpola, H. Unsupervised Variational Bayesian Learning of Nonlinear Models. *Advances in Neural Information Processing Systems*, Vol. 17 (NIPS 2004, Vancouver & Whistler, BC, Canada, December 13-18, 2004). Cambridge, MA 2005, The MIT Press, pp. 593-600.
25. Honkela, A.; Östman, T.; Vigário, R. Empirical Evidence of the Linear Nature of Magnetoencephalograms. *Proc. of 13th European Symposium on Artificial Neural Networks (ESANN 2005)*, Bruges, Belgium, April 27-29, 2005. pp. 285-290.
26. Honkela, T. Von Foerster Meets Kohonen - Approaches to Artificial Intelligence, Cognitive Science and Information Systems Development. *Kybernetes*, 2005. Vol. 31, No. 1/2, pp. 40-53.
27. Honkela, T.; Hynnä, K.; Lagus, K.; Särelä, J. (eds.) Adaptive and Statistical Approaches in Conceptual Modeling. Espoo, Finland: Helsinki University of Technology, 2005. (Publications in Computer and Information Science Technical Report A75).
28. Honkela, T.; Hyvärinen, A.; Väyrynen, J. Emergence of Linguistic Features: Independent Component Analysis of Contexts. *Proc. of Ninth Neural Computation and Psychology Workshop: Modelling Language, Cognition and Action*, Plymouth, England, September 8-10, 2004. New Jersey 2005, World Scientific, pp. 129-138.
29. Honkela, T.; Könönen, V.; Pöllä, M.; Simula, O. (Eds.) *Proceedings of the International and Interdisciplinary Conference on Adaptive Knowledge Representation and Reasoning (AKRR'05)*, Espoo, Finland, June 15-17, 2005. Espoo, Finland 2005. 174 p.
30. Honkela, T.; Saarikko, P. Research Nations. *Proceedings of the Summit of Micronations*, 2005. Helsinki, Finland 2005, MUU, pp. 29-33.
31. Hyvärinen, A.; Karhunen, J.; Oja, E. *Independent Component Analysis*. Japanese translation. Tokyo, Japan 2005, Tokyo Denki University Press.
32. Hyvönen, S.; Junninen, H.; Laakso, L.; Dal Maso, M.; Grönholm, T.; Bonn, B.; Keronen, P.; Aalto, P.; Hiltunen, V.; Pohja, T.; Launiainen, S.; Hari, P.; Mannila, H.; Kulmala, M. A Look at Aerosol Formation using Data Mining Techniques. *Atmos. Chem. Phys.*, 2005. Vol. 5, pp. 3345-3356.
33. Ilin, A.; Valpola, H. Frequency-Based Separation of Climate Signals. *Proc. of 9th European Conf. on Principles and Practice of Knowledge Discovery in Databases (PKDD 2005)*, Porto, Portugal, October 2005. pp. 519-526.
34. Ilin, A.; Valpola, H. On the Effect of the Form of the Posterior Approximation in Variational Learning of ICA Models. *Neural Processing Letters*, 2005. Vol. 22, No. 2, pp. 183-204.
35. Ilin, A.; Valpola, H.; Oja, E. Semiblind Source Separation of Climate Data Detects El Niño as the Component with the Highest Interannual Variability. *Proc. of Int. Joint Conf. on Neural Networks (IJCNN 2005)*, Montréal, Québec, Canada, August 2005. pp. 1722-1727.
36. Ji, Y.; Hao, J.; Reyhani, N.; Lendasse, A. Direct and Recursive Prediction of Time Series Using Mutual Information Selection. *Lecture Notes in Computer Science 3512*,

Computational Intelligence and Bioinspired Systems: 8th International Workshop on Artificial Neural Networks (IWANN 2005), Vilanova i la Geltrú, Barcelona, Spain, June 8-10, 2005. Berlin 2005, Springer, pp. 1010-1017.

37. Kaplan, A.Ya.; Fingelkurts, An.A.; Fingelkurts, Al.A.; Borisov, S.V.; Darkhovsky, B.S. Nonstationary Nature of the Brain Activity as Revealed by EEG/MEG: Methodological, Practical and Conceptual Challenges. *Signal Processing*, 2005. Vol. 85, pp. 2190-2212.
38. Kaski, S. From Learning Metrics Towards Dependency Exploration. *Proc. of 5th Workshop On Self-Organizing Maps (WSOM'05)*, Paris, France, September 5-8, 2005. pp. 307-314.
39. Kaski, S. Proactive Information Retrieval by Monitoring Eye Movements. *Abstracts of BrainIT, The Second International Conference on Brain-Inspired Information Technology*, Kyushu Institute of Technology, Kitakyushu, Japan, October 7-9, 2005. p. 28.
40. Kaski, S.; Myllymäki, P.; Kojo, I. User Models from Implicit Feedback for Proactive Information Retrieval. *Proc. of Workshop 4 of the 10th International Conference on User Modeling; Machine Learning for User Modeling: Challenges*, Edinburgh, Scotland, July 24-25, 2005. pp. 25-26.
41. Kaski, S.; Nikkilä, J.; Savia, E.; Roos, C. Discriminative Clustering of Yeast Stress Response. In: Seiffert, U.; Jain, L.; Schweizer, P. (eds.), *Bioinformatics using Computational Intelligence Paradigms*. Berlin 2005, Springer, pp. 75-92.
42. Kaski, S.; Nikkilä, J.; Sinkkonen, J.; Lahti, L.; Knuuttila, J.; Roos, C. Associative Clustering for Exploring Dependencies between Functional Genomics Data Sets. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2005. Vol. 2, pp. 203-216.
43. Kaski, S.; Sinkkonen, J.; Klami, A. Discriminative Clustering. *Neurocomputing*, 2005. Vol. 69, pp. 18-41.
44. Kersting, K.; Raiko, T. 'Say EM' for Selecting Probabilistic Models for Logical Sequences. *Proc. of 21st Conference on Uncertainty in Artificial Intelligence (UAI 2005)*, Edinburgh, Scotland, July 26-29, 2005. pp. 300-307.
45. Kimmelma, O.; Parviainen, J.; Välimäki, V. Musiikkiäänitteiden digitaalinen vanhentaminen. *Suomen Musiikintutkijoiden 9. Valtakunnallinen Symposium*, Jyväskylä, Finland, March 17-19, 2005. pp. 55-58.
46. Klami, A.; Kaski, S. Non-Parametric Dependent Components. *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'05)*, Philadelphia, PA, USA, March 18-23, 2005. pp. V-209-V-212.
47. Kohonen, O.; Katajamäki, S.; Honkela, T. In Search for Volta: Statistical Analysis of Word Patterns in Shakespeare's Sonnets. *Proc. of International Symposium on Adaptive Models of Knowledge, Language and Cognition (AMKLC'05)*, Espoo, Finland, June 15-17, 2005. pp. 44-47.
48. Kohonen, T. Pointwise Organizing Projections. *Proc. of 5th Workshop On Self-Organizing Maps (WSOM'05)*, Paris, France, September 5-8, 2005. (CD-ROM)

49. Koldovský, Z.; Tichavský, P.; Oja, E. Cramér-Rao Lower Bound for Linear Independent Component Analysis. *Proc. of Int. Conf. on Acoustics, Speech, and Signal Proc. (ICASSP'05)*, Philadelphia, USA, March 20-23, 2005. Vol. III, pp. 581-584.
50. Koskela, M.; Laaksonen, J. Semantic Annotation of Image Groups with Self-Organizing Maps. *Proc. of 4th International Conference on Image and Video Retrieval (CIVR 2005)*, Singapore, July 2005. pp. 518-527.
51. Koskela, M.; Laaksonen, J.; Sjöberg, M.; Muurinen, H. PicSOM Experiments in TRECVID 2005. *Proc. of TRECVID 2005 Workshop*, Gaithersburg, MD, USA, November 2005. pp. 262-270.
52. Kurimo, M.; Turunen, V. Retrieving Speech Correctly Despite the Recognition Errors. *Proc. of 2nd Joint Workshop on Multimodal Interaction and Related Machine Learning Algorithms*, Edinburgh, UK, July 11-13, 2005. (<http://groups.inf.ed.ac.uk/mlmi05/> ; 2-page abstract available online)
53. Kurimo, M.; Turunen, V. To Recover from Speech Recognition Errors in Spoken Document Retrieval. *Proc. of 9th European Conference on Speech Communication and Technology, Interspeech 2005*, Lisbon, Portugal, September 4-8, 2005. pp. 605-608.
54. Kurimo, M.; Turunen, V.; Ekman, I. Speech Transcription and Spoken Document Retrieval in Finnish. In: *Machine Learning for Multimodal Interaction, Revised Selected Papers of the MLMI 2004 Workshop*, Lecture Notes in Computer Science, Vol. 3361. Berlin 2005, Springer, pp. 253-262.
55. Könönen, V. Gradient Descent for Symmetric and Asymmetric Multiagent Reinforcement Learning. *Web Intelligence and Agent Systems: An International Journal (WIAS)*, 2005. Vol. 3, pp. 17-30.
56. Könönen, V. Hierarchical Multiagent Reinforcement Learning in Markov Games. *Proc. of International and Interdisciplinary Conference on Adaptive Knowledge Representation and Reasoning (AKRR05)*, Espoo, Finland, June 15-17, 2005. pp. 71-77.
57. Laaksonen, J.; Viitaniemi, V.; Koskela, M. Application of Self-Organizing Maps and Automatic Image Segmentation to 101 Object Categories Database. *Proc. of Fourth International Workshop on Content-Based Multimedia Indexing (CBMI 2005)*, Riga, Latvia, June 2005.
58. Laaksonen, J.; Viitaniemi, V.; Koskela, M. Emergence of Semantic Concepts in Visual Databases. *Proc. of International and Interdisciplinary Conference on Adaptive Knowledge Representation and Reasoning (AKRR 05)*, Espoo, Finland, June 2005. pp. 127134.
59. Lagus, K. Miten hermoverkkomallit selittävät kielen oppimista. Kielen ja kognition suhde, *Puheen ja kielen tutkimuksen yhdistyksen julkaisuja 37*, 2005 (Puheen ja kielen tutkimuksen yhdistyksen päivät, 17.-18.3. 2005).
60. Lagus, K.; Alhoniemi, E.; Seppä, J.; Honkela, A.; Wagner, P. Independent Variable Group Analysis in Learning Compact Representations for Data. *Proc. of International and Interdisciplinary Conference on Adaptive Knowledge Representation and Reasoning (AKRR'05)*, Helsinki, Finland, June 15-17, 2005. pp. 49-56.

61. Lagus, K.; Creutz, M.; Virpioja, S. Latent Linguistic Codes for Morphemes using Independent Component Analysis. *Proc. of Ninth Neural Computation and Psychology Workshop: Modelling Language, Cognition and Action*, Plymouth, England, September 8-10, 2004. New Jersey etc. 2005, World Scientific.
62. Laiho, J.; Raivio, K.; Lehtimäki, P.; Hätönen, K.; Simula, O. Advanced Analysis Methods for 3G Cellular Networks. *IEEE Transactions on Wireless Communications*, 2005. Vol. 4, No. 3, pp. 930-942.
63. Lehtimäki, P.; Raivio, K. A Knowledge-Based Model for Analyzing GSM Network Performance. *Proc. of 6th International Symposium on Intelligent Data Analysis (IDA)*, Madrid, Spain, September 8-10, 2005. pp. 204-215.
64. Lehtimäki, P.; Raivio, K. A SOM Based Approach for Visualization of GSM Network Performance Data. *Proc. of 18th International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems (IEA/AIE)*, Bari, Italy, June 22-25, 2005. pp. 588-598.
65. Lendasse, A.; François, D.; Wertz, V.; Verleysen, M. Nonparametric Noise Estimation to Build Nonlinear Model in Chemometry. *Proc. of Chimio-métrie 2005*, Lille, France, Nov. 30 - Dec. 1, 2005. pp. 44-47.
66. Lendasse, A.; François, D.; Wertz, V.; Verleysen, M. Nonlinear Time Series Prediction by Weighted Vector Quantization. *Future Generation Computer Systems*, 2005. Vol. 21, No. 7, pp. 1056-1067.
67. Lendasse, A.; Ji, Y.; Reyhani, N.; Verleysen, M. LS-SVM Hyperparameter Selection with a Nonparametric Noise Estimator. *Artificial Neural Networks: Formal Models and Their Applications, Lecture Notes in Computer Science 3697, International Conference on Artificial Neural Networks (ICANN'05)*, Warsaw, Poland, September 11-15, 2005. Berlin 2005, Springer, pp. 625-630.
68. Lendasse, A.; Simon, G.; Wertz, V.; Verleysen, M. Fast Bootstrap Methodology for Model Selection. *Neurocomputing*, 2005. Vol. 64, pp. 161-181.
69. Luysaert, S.; Sulkava, M.; Raitio, H.; Hollmén, J. Are N and S Deposition Altering the Chemical Composition of Norway Spruce and Scots Pine Needles in Finland? *Environmental Pollution*, 2005. Vol. 138, No. 1, pp. 5-17.
70. Molinier, M.; Laaksonen, J.; Ahola, J.; Häme, T. Self-Organizing Map Application for Retrieval of Man-Made Structures in Remote Sensing Data. *Proc. of ESA-EUSC 2005: Image Information Mining Theory and Application to Earth Observation*, Frascati, Italy, October 2005.
71. Nikkilä, J.; Roos, C.; Kaski, S. Integration of Transcription Factor Binding and Gene Expression by Associative Clustering. *Proc. of Symposium of Knowledge Representation in Bioinformatics (KRBIO05)*, Espoo, Finland, June 15-17, 2005. pp. 22-29.
72. Nikkilä, J.; Roos, C.; Savia, E.; Kaski, S. Explorative Modeling of Yeast Stress Response and its Regulation with gCCA and Associative Clustering. *International Journal of Neural Systems*, 2005. Vol. 15, No. 4, pp. 237-246.

73. Nowé, A.; Honkela, T.; Könönen, V.; Verbeeck, K. (eds.) *Proceedings of the Workshop W9 on Reinforcement Learning in Nonstationary Environments*, Porto, Portugal, 2005 (in conjunction with the 16th ECML and 9th PKDD, Oct. 3-7, 2005). Portugal 2005. 81 p.
74. Oja, E. Finding Hidden Factors in Large Spatiotemporal Data Sets. *Proc. of 2005 International Conference on Neural Networks and Brain*, Beijing, China, Oct. 13 - 15, 2005.
75. Oja, M.; Sperber, G. O.; Blomberg, J.; Kaski, S. Self-Organizing Map-Based Discovery and Visualization of Human Endogeneous Retroviral Sequence Groups. *International Journal of Neural Systems*, 2005. Vol. 15, No. 3, pp. 163-179.
76. Pakkanen, J. Examining the Behaviour of the Evolving Tree . *Proc. of 5th Workshop on Self-Organizing Maps (WSOM 05)*, Paris, France, September 5-8, 2005. pp. 163-170.
77. Pakkanen, J.; Iivarinen, J. Analyzing Large Image Databases with the Evolving Tree. *Proc. of Third International Conference on Advances in Pattern Recognition*, LNCS 3686. Bath, UK, August 22-25, 2005. Part I, pp. 192-198.
78. Pakkanen, J.; Iivarinen, J.; Oja, E. The Evolving Tree, a Hierarchical Tool for Unsupervised Data Analysis. *Proc. of International Joint Conference on Neural Networks*, Québec, Canada, July 31-August 4, 2005. pp. 1395-1399.
79. Peltonen, J.; Kaski, S. Discriminative Components of Data. *IEEE Transactions on Neural Networks*, 2005. Vol. 16, pp. 68-83.
80. Puolamäki, K.; Salojärvi, J.; Savia, E.; Simola, J.; Kaski, S. Combining Eye Movements and Collaborative Filtering for Proactive Information Retrieval. *SIGIR 2005: Proceedings of the 28th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval*, Salvador, Brasil, August 15-19, 2005. New York, USA 2005, ACM Press, pp. 146-153.
81. Pylkkönen, J. An Efficient One-pass Decoder for Finnish Large Vocabulary Continuous Speech Recognition. *Proc. of 2nd Baltic Conference on Human Language Technologies (HLT'2005)*, Tallinn, Estonia, April 4-5, 2005. pp. 167-172.
82. Pylkkönen, J. New Pruning Criteria for Efficient Decoding. *Proc. of 9th European Conference on Speech Communication and Technology, Interspeech 2005*, Lisboa, Portugal, September 4-8, 2005. pp. 581-584.
83. Pöllä, M.; Lindh-Knuutila, T.; Honkela, T. Self-Refreshing SOM as a Semantic Memory Model. *Proc. of International and Interdisciplinary Conference on Adaptive Knowledge Representation and Reasoning (AKRR'05)*, Espoo, Finland, June 15-17, 2005. pp. 171-174.
84. Raiko, T. Nonlinear Relational Markov Networks with an Application to the Game of Go. *Proc. of 15th International Conference on Artificial Neural Networks (ICANN 2005)*, Warsaw, Poland, September 11-15, 2005. Lecture Notes in Computer Science 3697. Berlin 2005, Springer, pp. 989-996.
85. Raiko, T.; Tornio, M. Learning Nonlinear State-Space Models for Control. *Proc. of International Joint Conference on Neural Networks (IJCNN 2005)*, Montreal, Canada, July 31-August 4, 2005. pp. 815-820.

86. Raju, K.; Huovinen, T.; and Ristaniemi, T. Blind Interference Cancellation Scheme for DS-CDMA Systems. *Proc. of IEEE International Symposium on Antennas and Propagation and USNC/URSI National Radio Science Meeting*, Washington DC, USA, July 3-8, 2005.
87. Rautkorpi, R.; Iivarinen, J. Contour Co-occurrence Matrix - A Novel Statistical Shape Descriptor. *Proc. of 13th International Conference on Image Analysis and Processing*, LNCS 3617, Cagliari, Italy, September 6-8, 2005. pp. 253-260.
88. Rautkorpi, R.; Iivarinen, J. Shape-Based Co-occurrence Matrices for Defect Classification. *Proc. of 14th Scandinavian Conference on Image Analysis*, LNCS 3540, Joensuu, Finland, June 19-22, 2005. Berlin 2005, Springer, pp. 588-597.
89. Reyhani, N.; Hao, J.; Ji, Y.; Lendasse, A. Mutual Information and Gamma Test for Input Selection. *Proc. of European Symposium on Artificial Neural Networks (ESANN 2005)*, Bruges, Belgium, April 27-29, 2005. pp. 503-504.
90. Roue, B.; Bas, P.; Chassery, J-M. Influence des Vecteurs Caractéristiques en Stéganalyse par Séparateurs à Vastes Marges. *Proc. of GretsI 2005*, Louvain-la-Neuve, Belgique, Septembre 6-9, 2005.
91. Russell, A.; Honkela, T. Analysis of Interprofessional Collaboration in an Online Learning Environment using Self-Organizing Maps. *Proc. of International Symposium on Adaptive Models of Knowledge, Language and Cognition (AMKLC'05)*, Espoo, Finland, June 15-17, 2005. pp. 52-57.
92. Russell, A.; Honkela, T.; Lagus, K.; Pöllä, M. (eds.) *Proceedings of Symposium on Adaptive Models of Knowledge, Language and Cognition (AMKLC'05)*. Espoo, Finland, June 15-17, 2005. 61 p.
93. Salojärvi, J.; Puolamäki, K.; Kaski, S. Expectation Maximization Algorithms for Conditional Likelihoods. *Proc. of 22nd International Conference on Machine Learning (ICML 2005)*, Bonn, Germany, August 7-11, 2005. New York, USA 2005, ACM Press, pp. 753-760.
94. Salojärvi, J.; Puolamäki, K.; Kaski, S. Expectation Maximization Algorithms for Conditional Likelihoods. Espoo, Finland: Helsinki University of Technology, 2005. (Publications in Computer and Information Science Report A83).
95. Salojärvi, J.; Puolamäki, K.; Kaski, S. Implicit Relevance Feedback From Eye Movements. *Artificial Neural Networks: Biological Inspirations - ICANN 2005: 15th International Conference*, Warsaw, Poland, 11-15 September, 2005. Lecture Notes in Computer Science 3696. Berlin, Germany 2005, Springer-Verlag, pp. 513-518.
96. Salojärvi, J.; Puolamäki, K.; Kaski, S. On Discriminative Joint Density Modeling. *Machine Learning: ECML 2005, European Conference on Machine Learning*, Porto, Portugal, October 3-7, 2005. Lecture Notes in Artificial Intelligence 3270. Berlin, Germany 2005, Springer-Verlag, pp. 341-352.
97. Salojärvi, J.; Puolamäki, K.; Simola, J.; Kovanen, L.; Kojo, I; Kaski, S. Inferring Relevance from Eye Movements: Feature Extraction. Espoo, Finland: Helsinki University of Technology, 2005. 23 p. (Publications in Computer and Information Science Report A82).

98. Savia, E.; Puolamäki, K.; Sinkkonen, J.; Kaski, S. Two-Way Latent Grouping Model for User Preference Prediction. *Proc. of 21st Conference on Uncertainty in Artificial Intelligence (UAI 2005)*, Edinburgh, Scotland, July 26-29, 2005. pp. 518-525.
99. Siivola, V. Building Compact Language Models Incrementally. *Proc. of Second Baltic Conference on Human Language Technologies*, Tallinn, Estonia, April 4-5, 2005. pp. 183-188.
100. Siivola, V.; Pellom, B. Growing an n-Gram Model. *Proc. of 9th European Conference on Speech Communication and Technology (Interspeech 2005)*, Lisboa, Portugal, September 4-8, 2005. pp. 1309-1312.
101. Similä, T. Self-Organizing Map Learning Nonlinearly Embedded Manifolds. *Information Visualization*, 2005. Vol. 4, No. 1, pp. 22-31.
102. Similä, T.; Laine, S. Visual Approach to Supervised Variable Selection by Self-Organizing Map. *International Journal of Neural Systems*, 2005. Vol. 15, No. 1-2, pp. 101-110.
103. Similä, T.; Tikka, J. Multiresponse Sparse Regression with Application to Multi-dimensional Scaling. *Proc. of 15th International Conference on Artificial Neural Networks (ICANN'05)*, Warsaw, Poland. September 11-15, 2005. Lecture Notes in Computer Science 3697. Berlin 2005, Springer, pp. 97-102.
104. Simon, G.; Lendasse, A.; Cottrell, C.; Fort, J.-C.; Verleysen, M. Time Series Forecasting: Obtaining Long Term Trends with Self-Organizing Maps. *Pattern Recognition Letters*, 2005. Vol. 26, No. 12, pp. 1795-1808.
105. Sinkkonen, J.; Kaski, S.; Nikkilä, L.; Lahti, L. Associative Clustering (AC): Technical Details. Espoo, Finland: Helsinki University of Technology, 2005. (Publications in Computer and Information Science Report A84).
106. Sirola, M.; Lampi, G.; Parviainen, J. SOM Based Decision Support in Failure Management. *Proc. of IEEE International Workshop on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS'2005)*, Sofia, Bulgaria, September 5-7, 2005. pp. 468-473.
107. Sirola, M.; Lampi, G.; Parviainen, J. SOM Based Decision Support in Failure Management. *International Journal of Computing*, 2005. Vol. 4, No. 3.
108. Sjöberg, M.; Laaksonen, J. Content-Based Retrieval of Web Pages and Other Hierarchical Objects with Self-Organizing Maps. *Artificial Neural Networks: Formal Models and Their Applications, International Conference on Artificial Neural Networks (ICANN'05)*, Warsaw, Poland, September 11-15, 2005. Lecture Notes in Computer Science 3697. Berlin 2005, Springer, pp. 841-846.
109. Sorjamaa, A.; Hao, J.; Lendasse, A. Mutual Information and k -Nearest Neighbors approximator for Time Series Predictions. *Artificial Neural Networks: Formal Models and Their Applications, International Conference on Artificial Neural Networks (ICANN'05)*, Warsaw, Poland, September 11-15, 2005. Lecture Notes in Computer Science 3697. Berlin 2005, Springer, pp. 553-558.
110. Sorjamaa, A.; Lendasse, A.; Verleysen, M. Pruned Lazy Learning Models for Time Series Prediction. *Proc. of European Symposium on Artificial Neural Networks (ESANN 2005)*, Bruges, Belgium, April 27-29, 2005. pp. 509-514.

111. Sorjamaa, A.; Reyhani, N.; Lendasse, A. Input and Structure Selection for k -NN Approximator. *Computational Intelligence and Bioinspired Systems: 8th International Workshop on Artificial Neural Networks (IWANN 2005)*, Vilanova i la Geltrú, Barcelona, Spain, June 8-10, 2005. Lecture Notes in Computer Science 3512. Berlin 2005, Springer, pp. 985-991.
112. Sulkava, M.; Rautio, P.; Hollmén, J. Combining Measurement Quality into Monitoring Trends in Foliar Nutrient Concentrations. *Artificial Neural Networks: Formal Models and Their Applications, International Conference on Artificial Neural Networks (ICANN'05)*, Warsaw, Poland, September 11-15, 2005. Lecture Notes in Computer Science 3697. Berlin 2005, Springer, pp. 761-767.
113. Särelä, J.; Valpola, H. Denoising Source Separation. *Journal of Machine Learning Research*, 2005. Vol. 6(Mar), pp. 233-272.
114. Tikka, J.; Hollmén, J.; Lendasse, A. Input Selection for Long-Term Prediction of Time Series. *Proc. of 8th International Work-Conference on Artificial Neural Networks (IWANN 2005)*, Barcelona, Spain, June 8-10, 2005. Berlin 2005, Springer-Verlag, pp. 1002-1009.
115. Venna, J.; Kaski, S. Local Multidimensional Scaling with Controlled Tradeoff Between Trustworthiness and Continuity. *Proc. of 5th Workshop On Self-Organizing Maps (WSOM'05)*, Paris, France, September 5-8, 2005. pp. 695-702.
116. Venna, J.; Kaski, S. Visualized Atlas of a Gene Expression Databank. *Proc. of Symposium of Knowledge Representation in Bioinformatics (KRBIO05)*, Espoo, Finland, June 15-17, 2005. pp. 30-36.
117. Viitaniemi, V.; Laaksonen, J. Keyword-Detection Approach to Automatic Image Annotation. *Proc. of 2nd European Workshop on the Integration of Knowledge, Semantic and Digital Media Technologies (EWIMT 2005)*, London, UK, November 2005. pp. 15-22.
118. Väyrynen, J.; Honkela, T. Comparison of Independent Component Analysis and Singular Value Decomposition in Word Context Analysis. *Proc. of International and Interdisciplinary Conference on Adaptive Knowledge Representation and Reasoning (AKRR'05)*, Espoo, Finland, June 15-17, 2005. pp. 135-140.
119. Yang, Z.; Laaksonen, J. Approximated Classification in Interactive Facial Image Retrieval. *Proc. of 14th Scandinavian Conference on Image Analysis (SCIA 2005)*, Joensuu, Finland, June 2005. Berlin, Germany 2005, Springer, pp. 770-779.
120. Yang, Z.; Laaksonen, J. Interactive Retrieval in Facial Image Database using Self-Organizing Maps. *Proc. of IAPR Conference on Machine Vision Applications (MVA 2005)*, Tsukuba Science City, Japan, May 2005. pp. 112-115.
121. Yang, Z.; Laaksonen, J. Partial Relevance in Interactive Facial Image Retrieval. *Proc. of 3rd International Conference on Advances in Pattern Recognition (ICAPR 2005)*, Bath, UK, August 2005. pp. 216-225.
122. Yuan, Z.; Oja, E. Projective Nonnegative Matrix Factorization for Image Compression and Feature Extraction. *Proc. of 14th Scandinavian Conference on Image Analysis (SCIA 2005)*, Joensuu, Finland, June 2005. Berlin, Germany 2005, Springer, pp. 333-342.