

# List of Publications

Samuel Kaski

December 30, 2024

## Summary

346 peer-reviewed scientific articles. Google Scholar h-index 73, i10-index 277 (data of December 30, 2024).

## A Peer-reviewed scientific articles

### A1 Journal article, original research

- [1] A. Aushev, T. Tran, H. Pesonen, A. Howes, and S. Kaski. Likelihood-free inference in state-space models with unknown dynamics. *Statistics and Computing*, 34:27, 2024.
- [2] P. Blomstedt, D. Mesquita, O. Rivasplata, J. Lintusaari, T. Sivula, J. Corander, and S. Kaski. Meta-analysis of Bayesian analyses. *Bayesian Analysis*, Advance Publication:1–26, 2024.
- [3] L. Filstroff, I. Sundin, P. Mikkola, A. Tiulpin, J. Kylmäoja, and S. Kaski. Targeted active learning for Bayesian decision-making. *Transactions on Machine Learning Research*, 2024. <https://openreview.net/forum?id=KxPjuiMgmm>
- [4] J. Haakana, S. Merz, S. Kaski, H. Renvall, and R. Salmelin. Bayesian reduced rank regression models generalisable neural fingerprints that differentiate between individuals in magnetoencephalography data. *European Journal of Neuroscience*, 59:2320–2335, 2024.
- [5] I. H. Haraldsen, C. Hatlestad-Hall, C. Marra, H. Renvall, F. Maestu, J. Acosta-Hernandez, S. Alfonsin, V. Andersson, A. Anand, V. Ayllon, A. Babic, A. Belhadi, C. Birck, R. Bruna, N. Caraglia, C. Carrarini, E. Christensen, A. Cicchetti, S. Daugbjerg, R. Di Bidino, A. Diaz-Ponce, A. Drews, G. M. Giuffre, J. Georges, P. Gil-Gregorio, D. Gove, T. M. Govers, H. Hallock, M. Hietanen, L. Holmen, J. Hotta, S. Kaski, R. Khadka, A. S. Kinnunen, A. M. Koivisto, S. Kulashekhar, D. Larsen, M. Liljestrom, P. G. Lind, A. Marcos Dolado, S. Marshall, S. Merz, F. Miraglia, J. Montonen, V. Mantynen, A. R. Oksengard, J. Olazaran, T. Paaajanen, J. M. Pena, L. Pena, D. Irabien Peniche, A. S. Perez, M. Radwan, F. Ramírez-Torano, A. Rodríguez-Pedrero, T. Saarinen, M. Salas-Carrillo, R. Salmelin, S. Sousa, A. Suyuthi, M. Toft, P. Toharia, T. Tveitstol, M. Tveter, R. Upreti, R. J. Vermeulen, F. Vecchio, A. Yazidi, and P. M. Rossini. Intelligent digital tools for screening of brain connectivity and dementia risk estimation in people affected by mild cognitive impairment: the ai-mind clinical study protocol. *Frontiers in Neurobotics*, 17, 2024. doi:10.3389/fnbot.2023.1289406,
- [6] A. Klami, T. Damoulas, O. Engkvist, P. Rinke, and S. Kaski. Virtual laboratories: Transforming research with AI. *Data-Centric Engineering*, 5:e19, 2024.
- [7] J. Menke, Y. Nahal, E. J. Bjerrum, M. Kabeshov, S. Kaski, and O. Engkvist. Metis - a python-based user interface to collect expert feedback for generative chemistry models. *Journal of Chemoinformatics*, 16:100, 2023.
- [8] P. Mikkola, O. A. Martin, S. Chandramouli, M. Hartmann, O. A. Pla, O. Thomas, H. Pesonen, J. Corander, A. Vehtari, S. Kaski, P.-C. Bürkner, and A. Klami. Prior knowledge elicitation: The past, present, and future. *Bayesian Analysis*, 19:1129 – 1161, 2024.
- [9] Y. Nahal, J. Menke, J. Martinelli, M. Heinonen, M. Kabeshov, J. P. Janet, E. Nittinger, O. Engkvist, and S. Kaski. Human-in-the-loop active learning for goal-oriented molecule generation. *Journal of Chemoinformatics*, 16:138, 2024.
- [10] L. Prediger, J. Jälkö, A. Honkela, and S. Kaski. Collaborative learning from distributed data with differentially private synthetic data. *BMC Medical Informatics and Decision Making*, 24:167, 2024.

- [11] Z. R. Yousefi, T. Vuong, M. Alghossein, T. Ruotsalo, G. Jacucci, and S. Kaski. Entity footprinting: Modeling contextual user states via digital activity monitoring. *ACM Transactions on Interactive Intelligent Systems*, 14:9, 2024.
- [12] A. Aushev, A. Putkonen, G. Clarté, S. Chandramouli, L. Acerbi, S. Kaski, and A. Howes. Online simulator-based experimental design for cognitive model selection. *Computational Brain & Behavior*, 6:719–737, 2023.
- [13] M. M. Çelikok, P.-A. Murena, and S. Kaski. Modeling needs user modeling. *Frontiers in Artificial Intelligence*, 6:1097891, 2023.
- [14] S. De Peuter, A. Oulasvirta, and S. Kaski. Toward AI assistants that let designers design. *AI Magazine*, 44(1):85–96, 2023.
- [15] J. Jälkö, L. Prediger, A. Honkela, and S. Kaski. DPVIm: Differentially private variational inference improved. *Transactions on Machine Learning Research*, 2023. <https://openreview.net/forum?id=G1hM6XX1wv>
- [16] M. Moein, M. Heinonen, N. Mesens, R. Chamanza, C. Amuzie, Y. Will, H. Ceulemans, S. Kaski, and D. Herman. Chemistry-based modeling on phenotype-based drug-induced liver injury annotation: From public to proprietary data. *Chemical Research in Toxicology*, 36:1238–1247, 2023.
- [17] H. Pesonen, U. Simola, A. Köhn-Luque, H. Vuollekoski, X. Lai, A. Frigessi, S. Kaski, D. T. Frazier, W. Maneesoonthorn, G. M. Martin, and J. Corander. ABC of the future. *International Statistical Review*, 91:243–268, 2023.
- [18] S. Wharrie, Z. Yang, V. Raj, R. Monti, R. Gupta, Y. Wang, A. Martin, L. J. O’Connor, S. Kaski, P. Marttinen, P. F. Palamara, C. Lippert, and A. Ganna. HAPNEST: efficient, large-scale generation and evaluation of synthetic datasets for genotypes and phenotypes. *Bioinformatics*, 39:btad535, 2023.
- [19] N. Williams, A. Ojanperä, F. Siebenhühner, B. Toselli, S. Palva, G. Arnulfo, S. Kaski, and J.M. Palva. The influence of inter-regional delays in generating large-scale brain networks of phase synchronization. *NeuroImage*, 279:120318, 2023.
- [20] Z. Yang, Y. Chen, D. Sedov, S. Kaski, and J. Corander. Stochastic cluster embedding. *Statistics and Computing*, 33:12, 2023.
- [21] A. Aushev, H. Pesonen, M. Heinonen, J. Corander, and S. Kaski. Likelihood-free inference with deep Gaussian processes. *Computational Statistics and Data Analysis*, 174:107529, 2022.
- [22] T. Cui, K. El Mekkaoui, J. Reinval, A. Havulinna, P. Marttinen, and S. Kaski. Gene-gene interaction detection with deep learning. *Communications Biology*, 5:1238, 2022.
- [23] T. Cui, A. Havulinna, P. Marttinen, and S. Kaski. Informative Bayesian neural network priors for weak signals. *Bayesian Analysis*, 17:1121–1151, 2022.
- [24] B. Güvenç Paltun, S. Kaski, and H. Mamitsuka. DIVERSE: Bayesian data integrative learning for precise drug response prediction. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 19:2197–2207, 2022.
- [25] D. Kiciatovas, Q. Guo, M. Kailas, H. Pesonen, J. Corander, S. Kaski, E. Pitkänen, and V. Mustonen. Identification of multiplicatively acting modulatory mutational signatures in cancer. *BMC Bioinformatics*, 23:522, 2022.
- [26] T. Mononen, J. Kujala, M. Liljeström, E. Leppäaho, S. Kaski, and R. Salmelin. The relationship between electrophysiological and hemodynamic measures of neural activity varies across picture naming tasks: A multimodal magnetoencephalography–functional magnetic resonance imaging study. *Frontiers in Neuroscience*, 16:1019572, 2022.
- [27] U. Simola, A. Bonfanti, X. Dumusque, J. Cisewski-Kehe, S. Kaski, and J. Corander. Accounting for stellar activity signals in radial-velocity data by using change point detection techniques. *Astronomy & Astrophysics*, 664:A127, 2022.

- [28] I. Sundin, A. Voronov, H. Xiao, K. Papadopoulos, E. Jannik Bjerrum, M. Heinonen, A. Patronov, S. Kaski, and O. Engkvist. Human-in-the-loop assisted de novo molecular design. *Journal of Cheminformatics*, 14:86, 2022.
- [29] O. Thomas, R. Dutta, J. Corander, S. Kaski, and M. U. Gutmann. Likelihood-free inference by ratio estimation. *Bayesian Analysis*, 17:1–31, 2022.
- [30] G. Jacucci, P. Dae, T. Vuong, S. Andolina, K. Klouche, M. Sjöberg, T. Ruotsalo, and S. Kaski. Entity recommendation for everyday digital tasks. *ACM Transactions on Human-Computer Interaction*, 28:29, 2021.
- [31] J. Jälkö, E. Lagerspetz, J. Haukka, S. Tarkoma, A. Honkela, and S. Kaski. Privacy-preserving data sharing via probabilistic modelling. *Patterns*, 2:100271, 2021.
- [32] N. B. Marvasti, J.-P. Huhtala, Z. R. Yousefi, I. Vaniala, B. Upreti, P. Malo, S. Kaski, and H. Tikkanen. Is this company a lead customer? Estimating stages of B2B buying journey. *Industrial Marketing Management*, 97:126–133, 2021.
- [33] B. R. Upreti, J.-P. Huhtala, H. Tikkanen, P. Malo, N. Marvasti, S. Kaski, I. Vaniala, and P. Mattila. Online content match-making in B2B markets: Application of neural content modeling. *Industrial Marketing Management*, 93:32–40, 2021.
- [34] H. Afrabandpey, T. Peltola, J. Piironen, A. Vehtari, and S. Kaski. A decision-theoretic approach for model interpretability in Bayesian framework. *Machine Learning*, 109:1855–1876, 2020.
- [35] S. Arredondo-Alonso, J. Top, A. McNally, S. Puranen, M. Pesonen, J. Pensar, P. Marttinen, J. Braat, M. Rogers, W. Van Schaik, S. Kaski, R. Willems, J. Corander, and A. Schürch. Plasmids shaped the recent emergence of the major nosocomial pathogen *Enterococcus faecium*. *mBio*, 11(1):e03284–19, 2020.
- [36] T. Ruotsalo, G. Jacucci, and S. Kaski. Interactive faceted query suggestion for exploratory search: Whole-session effectiveness and interaction engagement. *Journal of the Association for Information Science and Technology (JASIST)*, 71:742–756, 2020.
- [37] J. Sirén and S. Kaski. Local dimension reduction of summary statistics for likelihood-free inference. *Statistics and Computing*, 30:559–570, 2020.
- [38] S. Voutilainen, M. Heinonen, M. Andberg, E. Jokinen, H. Maaheimo, J. Pääkkönen, N. Hakulinen and J. Rouvinen, H. Lähdesmäki, S. Kaski, J. Rousu, M. Penttilä, and A. Koivula. Substrate specificity of 2-deoxy-d-ribose 5-phosphate aldolase (DERA) assessed by different protein engineering and machine learning methods. *Applied Microbiology and Biotechnology*, 104:10515–10529, 2020.
- [39] H. Climente-González, C.-A. Azencott, S. Kaski, and M. Yamada. Block HSIC lasso: model-free biomarker detection for ultra-high dimensional data. *Bioinformatics*, 35:i427–i435, 2019. ISMB/ECCB 2019.
- [40] J. Gillberg, P. Marttinen, H. Mamitsuka, and S. Kaski. Modelling  $G \times E$  with historical weather information improves genomic prediction in new environments. *Bioinformatics*, 35:4045–4052, 2019.
- [41] M. Heinonen, M. Osmala, H. Mannerström, J. Wallenius, S. Kaski, J. Rousu, and H. Lähdesmäki. Bayesian Metabolic Flux Analysis reveals intracellular flux couplings. *Bioinformatics*, 35:i548–i557, 2019. ISMB/ECCB 2019.
- [42] G. Jacucci, O. Barral, P. Dae, M. Wenzel, B. Serim, T. Ruotsalo, P. Pluchino, J. Freeman, L. Gamberini, S. Kaski, and B. Blankertz. Integrating neurophysiological relevance feedback in intent modeling for information retrieval. *Journal of the Association for Information Science and Technology*, 70:917–930, 2019.
- [43] A. Kangasräsiö, J. P. P. Jokinen, A. Oulasvirta, A. Howes, and S. Kaski. Parameter inference for computational cognitive models with approximate Bayesian computation. *Cognitive Science*, 43:e12738, 2019.

- [44] E. Leppäaho, H. Renvall, E. Salmela, J. Kere, R. Salmelin, and S. Kaski. Discovering heritable modes of MEG spectral power. *Human Brain Mapping*, 40:1391–1402, 2019.
- [45] J. Lintusaari, P. Blomstedt, B. Rose, T. Sivula, M. U. Gutmann, S. Kaski, and J. Corander. Resolving outbreak dynamics using approximate Bayesian computation for stochastic birth-death models. *Wellcome Open Research*, 4:14, 2019.
- [46] M. P. Menden, D. Wang, M. J. Mason, B. Szalai, K. C. Bulusu, Y. Guan, T. Yu, J. Kang, M. Jeon, R. Wolfinger, T. Nguyen, M. Zaslavskiy, AstraZeneca-Sanger Drug Combination DREAM Consortium, I. S. Jang, Z. Ghazoui, M. E. Ahsen, R. Vogel, E. C. Neto, T. Norman, E. K. Y. Tang, M. J. Garnett, G. Y. Di Veroli, S. Fawell, G. Stolovitzky, J. Guinney, J. R. Dry, and J. Saez-Rodriguez. Community assessment to advance computational prediction of cancer drug combinations in a pharmacogenomic screen. *Nature Communications*, 10:2674, 2019. (Part of the AstraZeneca-Sanger Drug Combination DREAM Consortium).
- [47] T. Niinimäki, M. Heikkilä, A. Honkela, and S. Kaski. Representation transfer for differentially private drug sensitivity prediction. *Bioinformatics*, 35:i218–i224, 2019. ISMB/ECCB 2019.
- [48] X. Qin, P. Blomstedt, E. Leppäaho, P. Parviainen, and S. Kaski. Distributed Bayesian matrix factorization with limited communication. *Machine Learning*, 108:1805–1830, 2019.
- [49] M. U. Gutmann, R. Dutta, S. Kaski, and J. Corander. Likelihood-free inference via classification. *Statistics and Computing*, 28:411–425, 2018.
- [50] A. Honkela, M. Das, A. Nieminen, O. Dikmen, and S. Kaski. Efficient differentially private learning improves drug sensitivity prediction. *Biology Direct*, 13:1, 2018.
- [51] A. Kangasrääsio and S. Kaski. Inverse reinforcement learning from summary data. *Machine Learning*, 8-10:1517–1535, 2018.
- [52] J. Lintusaari, H. Vuollekoski, A. Kangasrääsio, K. Skytén, M. Järvenpää, P. Marttinen, M. Gutmann, A. Vehtari, J. Corander, and S. Kaski. ELFI: engine for likelihood-free inference. *Journal of Machine Learning Research*, 19(16):1–7, 2018.
- [53] E. Marques, T. Peltola, S. Kaski, and J. Klefström. Phenotype-driven identification of epithelial signalling clusters. *Scientific Reports*, 8:4034, 2018.
- [54] I. Petersen, T. Peltola, S. Kaski, K. Walters, and S. Hardoon. Depression, depressive symptoms and treatments in women who have recently given birth: UK cohort study. *BMJ Open*, 8(e02215):1–8, 2018.
- [55] T. Ruotsalo, J. Peltonen, M. J. A. Eugster, D. Glowacka, P. Floréen, P. Myllymäki, G. Jacucci, and S. Kaski. Interactive intent modeling for exploratory search. *ACM Transactions on Information Systems*, 36(44), 2018.
- [56] I. Sundin, T. Peltola, L. Micallef, H. Afrabandpey, M. Soare, M. M. Majumder, P. Daeë, C. He, B. Serim, A. Havulinna, C. Heckman, G. Jacucci, P. Marttinen, and S. Kaski. Improving genomics-based predictions for precision medicine through active elicitation of expert knowledge. *Bioinformatics*, 34:i395–i403, 2018.
- [57] S. Bhadra, S. Kaski, and J. Rousu. Multi-view kernel completion. *Machine Learning*, 106:713–739, 2017.
- [58] P. Daeë, T. Peltola, M. Soare, and S. Kaski. Knowledge elicitation via sequential probabilistic inference for high-dimensional prediction. *Machine Learning*, 106:1599–1620, 2017.
- [59] M. Gönen, B. A. Weir, G. S. Cowley, F. Vazquez, Y. Guan, A. Jaiswal, M. Karasuyama, V. Uzunangelov, T. Wang, A. Tsherniak, S. Howell, D. Marbach, B. Hoff, T. C. Norman, A. Airola, A. Bivol, K. Bunte, D. Carlin, S. Chopra, A. Deran, K. Ellrott, P. Gopalacharyulu, K. Graim, S. Kaski, S. A. Khan, Y. Newton, S. Ng, T. Pahikkala, E. Paull, A. Sokolov, H. Tang, J. Tang, K. Wennerberg, Y. Xie, X. Zhan, F. Zhu, T. Aittokallio, H. Mamitsuka, J. M. Stuart, J. S. Boehm, D. E. Root, G. Xiao, G. Stolovitzky, W. C. Hahn, and A. A. Margolin. A community challenge for inferring genetic predictors of gene essentialities through analysis of a functional screen of cancer cell lines. *Cell Systems*, 5:485–497, 2017.

- [60] C. He, L. Micallef, Z.-U.-R. Tanoli, S. Kaski, T. Aittokallio, and G. Jacucci. MediSyn: Uncertainty-aware visualization of multiple biomedical datasets to support drug treatment selection. *BMC Bioinformatics*, 18(Suppl 10):393, 2017.
- [61] P. Kohonen, J. A. Parkkinen, E. L. Willighagen, R. Ceder, K. Wennerberg, S. Kaski, and R. C. Grafström. A transcriptomics data-driven gene space accurately predicts liver cytopathology and drug-induced liver injury. *Nature Communications*, 8:15932, 2017.
- [62] E. Leppäaho, M. Ammad-ud-din, and S. Kaski. GFA: Exploratory analysis of multiple data sources with group factor analysis. *Journal of Machine Learning Research*, 18(39):1–5, 2017.
- [63] P. Parviainen and S. Kaski. Learning structures of Bayesian networks for variable groups. *International Journal of Approximate Reasoning*, 88:110–127, 2017.
- [64] M. Ammad-Ud-Din, S. A. Khan, D. Malani, A. Murumägi, O. Kallioniemi, T. Aittokallio, and S. Kaski. Drug response prediction by inferring pathway-response associations with kernelized Bayesian matrix factorization. *Bioinformatics*, 32:i455–i463, 2016.
- [65] O. Barral, I. Kosunen, T. Ruotsalo, M. M. Spapé, M. J. A. Eugster, N. Ravaja, S. Kaski, and G. Jacucci. Extracting relevance and affect information from physiological text annotation. *User Modeling and User-Adapted Interaction*, 26:493–520, 2016.
- [66] P. Blomstedt, R. Dutta, S. Seth, A. Brazma, and S. Kaski. Modelling-based experiment retrieval: A case study with gene expression clustering. *Bioinformatics*, 32:1388–1394, 2016.
- [67] K. Bunte, E. Leppäaho, I. Saarinen, and S. Kaski. Sparse group factor analysis for biclustering of multiple data sources. *Bioinformatics*, 32:2457–2463, 2016.
- [68] M. J. A. Eugster, T. Ruotsalo, M. M. Spapé, O. Barral, N. Ravaja, G. Jacucci, and S. Kaski. Natural brain-information interfaces: Recommending information by relevance inferred from human brain signals. *Scientific Reports*, 6:38580, 2016.
- [69] J. Gillberg, P. Marttinen, M. Pirinen, A. J. Kangas, P. Soininen, M. Ali, A. S. Havulinna, M.-R. Järvelin, M. Ala-Korpela, and S. Kaski. Multiple output regression with latent noise. *Journal of Machine Learning Research*, 17(122):1–31, 2016.
- [70] S. A. Khan, E. Leppäaho, and S. Kaski. Bayesian multi-tensor factorization. *Machine Learning*, 105:233–253, 2016.
- [71] J. Lintusaari, M. U. Gutmann, S. Kaski, and J. Corander. On the identifiability of transmission dynamic models for infectious disease. *GENETICS*, 202:911–918, 2016.
- [72] S. K. Sieberts, F. Zhu, J. García-García, E. Stahl, A. Pratap, G. Pandey, D. Pappas, D. Aguilar, B. Anton, J. Bonet, R. Eksi, O. Fornés, E. Guney, H. Li, M. A. Marín, B. Panwar, J. Planas-Iglesias, D. Poglayen, J. Cui, A. O. Falcao, C. Suver, B. Hoff, Venkat S. K. Balagurusamy, D. Dillenberger, E. Chaibub Neto, T. Norman, T. Aittokallio, M. Ammad ud din, C.-A. Azencott, V. Bellón, V. Boeva, K. Bunte, H. Chheda, L. Cheng, J. Corander, M. Dumontier, A. Goldenberg, P. Gopalacharyulu, M. Hajiloo, D. Hidru, A. Jaiswal, S. Kaski, B. Khalfaoui, S. Ali Khan, E. R. Kramer, P. Marttinen, A. M. Mezlini, B. Molparia, M. Pirinen, J. Saarela, M. Samwald, V. Stoven, H. Tang, J. Tang, A. Torkamani, J.-P. Vert, B. Wang, T. Wang, K. Wennerberg, N. E. Wineinger, G. Xiao, Y. Xie, R. Yeung, X. Zhan, C. Zhao, The Rheumatoid Arthritis Challenge Consortium, J. Greenberg, J. Kremer, K. Michaud, A. Barton, M. Coenen, X. Mariette, C. Miceli, N. Shadick, M. Weinblatt, N. de Vries, P. P. Tak, D. Gerlag, T. W. J. Huizinga, F. Kurreeman, C. F. Allaart, S. L. Bridges Jr., L. Criswell, L. Moreland, L. Klareskog, S. Saevarsdottir, L. Padyukov, P. K. Gregersen, S. Friend, R. Plenge, G. Stolovitzky, B. Oliva, Y. Guan, and L. M. Mangravite. Crowdsourced assessment of common genetic contribution to predicting anti-TNF treatment response in rheumatoid arthritis. *Nature Communications*, 7:12460, 2016.
- [73] F. Eduati, L. M. Mangravite, T. Wang, H. Tang, J. C. Bare, R. Huang, T. Norman, M. Kellen, M. P. Menden, J. Yang, X. Zhan, R. Zhong, G. Xiao, M. Xia, N. Abdo, O. Kosyk, the NIEHS-NCATS-UNC DREAM Toxicogenetics Collaboration, S. Friend, A. Dearry, A. Simeonov, R. R. Tice, I. Rusyn, F. A. Wright, G. Stolovitzky, Y. Xie, and J. Saez-Rodriguez. Prediction of human population responses to toxic compounds by a collaborative competition. *Nature Biotechnology*,

- 33:933–940, 2015. (Part of the NIEHS-NCATS-UNC DREAM Toxicogenetics Collaboration community.)
- [74] R. C. Grafström, P. Nymark, V. Hongisto, O. Spjuth, R. Ceder, E. Willighagen, B. Hardy, S. Kaski, and P. Kohonen. Toward the replacement of animal experiments through the bioinformatics-driven analysis of 'omics' data from human cell cultures. *ATLA: Alternatives to Laboratory Animals*, 43:325–332, 2015.
- [75] A. Klami, S. Virtanen, E. Leppäaho, and S. Kaski. Group factor analysis. *IEEE Transactions on Neural Networks and Learning Systems*, 26:2136–2147, 2015.
- [76] J.-P. Kauppi, M. Kandemir, V.-M. Saarinen, L. Hirvenkari, L. Parkkonen, A. Klami, R. Hari, and S. Kaski. Towards brain-activity-controlled information retrieval: Decoding image relevance from MEG signals. *NeuroImage*, 112:288–298, 2015.
- [77] T. Ruotsalo, G. Jacucci, P. Myllymäki, and S. Kaski. Interactive intent modeling: Information discovery beyond search. *Communications of the ACM*, 58(1):86–92, 2015.
- [78] M. Ammad-ud-din, E. Georgii, M. Gönen, T. Laitinen, O. Kallioniemi, K. Wennerberg, A. Poso, and S. Kaski. Integrative and personalized QSAR analysis in cancer by kernelized Bayesian matrix factorization. *Journal of Chemical Information and Modeling*, 54:2347–2359, 2014.
- [79] M. Bansal, J. Yang, C. Karan, M. P. Menden, J. C. Costello, H. Tang, G. Xiao, Y. Li, J. Allen, R. Zhong, B. Chen, M. Kim, T. Wang, L. M. Heiser, R. Realubit, M. Mattioli, M. J. Alvarez, Y. Shen, NCI-DREAM Community, D. Gallahan, D. Singer, J. Saez-Rodriguez, Y. Xie, G. Stolovitzky, and A. Califano. A community computational challenge to predict the activity of pairs of compounds. *Nature Biotechnology*, 32:1213–1222, 2014. (Part of the NCI-DREAM Community.)
- [80] J. C. Costello, L. M. Heiser, E. Georgii, M. Gönen, M. P. Menden, N. J. Wang, M. Bansal, M. Ammad-ud din, P. Hintsanen, S. A. Khan, J.-P. Mpindi, O. Kallioniemi, A. Honkela, T. Aitokallio, K. Wennerberg, N. D. Community, J. J. Collins, D. Gallahan, D. Singer, J. Saez-Rodriguez, S. Kaski, J. W. Gray, and G. Stolovitzky. A community effort to assess and improve drug sensitivity prediction algorithms. *Nature Biotechnology*, 32:1202–1212, 2014.
- [81] A. Faisal, J. Peltonen, E. Georgii, J. Rung, and S. Kaski. Toward computational cumulative biology by combining models of biological datasets. *PLOS ONE*, 9(11):e113053, 2014.
- [82] M. Gönen and S. Kaski. Kernelized Bayesian matrix factorization. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 36:2047–2060, 2014.
- [83] M. Kandemir, A. Vetek, M. Gönen, A. Klami, and S. Kaski. Multi-task and multi-view learning of user state. *Neurocomputing*, 139:97–106, 2014.
- [84] S. A. Khan, S. Virtanen, O. P. Kallioniemi, K. Wennerberg, A. Poso, and S. Kaski. Identification of structural features in chemicals associated with cancer drug response: A systematic data-driven analysis. *Bioinformatics*, 30:i497–i504, 2014.
- [85] P. Marttinen, M. Pirinen, A.-P. Sarin, J. Gillberg, J. Kettunen, I. Surakka, A. J. Kangas, P. Soinen, P. O'Reilly, M. Kaakinen, M. Kähönen, T. Lehtimäki, M. Ala-Korpela, O. T. Raitakari, V. Salomaa, M.-R. Järvelin, S. Ripatti, and S. Kaski. Assessing multivariate gene-metabolome associations with rare variants using Bayesian reduced rank regression. *Bioinformatics*, 30:2026–34, 2014.
- [86] J. Parkkinen and S. Kaski. Probabilistic drug connectivity mapping. *BMC Bioinformatics*, 15:113, 2014.
- [87] S. Seth, N. Välimäki, S. Kaski, and A. Honkela. Exploration and retrieval of whole-metagenome sequencing samples. *Bioinformatics*, 30:2471–2479, 2014.
- [88] T. Suvitaival, J. Parkkinen, S. Virtanen, and S. Kaski. Cross-organism toxicogenomics with group factor analysis. *Systems Biomedicine*, 2:e29291, 2014.

- [89] T. Suviataival, S. Rogers, and S. Kaski. Stronger findings for metabolomics through Bayesian modeling of multiple peaks and compound correlations. *Bioinformatics*, 30:i461–i467, 2014.
- [90] T. Suviataival, S. Rogers, and S. Kaski. Stronger findings from mass spectral data through multi-peak modeling. *BMC Bioinformatics*, 15:208, 2014.
- [91] A. Klami, S. Virtanen, and S. Kaski. Bayesian canonical correlation analysis. *Journal of Machine Learning Research*, 14:899–937, 2013.
- [92] M. Koskinen, J. Viinikanoja, M. Kurimo, A. Klami, S. Kaski, and R. Hari. Identifying fragments of natural speech from the listener’s MEG signals. *Human Brain Mapping*, 34:1477–1489, 2013.
- [93] R. Louhimo, V. Aittomäki, A. Faisal, M. Laakso, P. Chen, K. Ovaska, E. Valo, L. Lahti, V. Rogojin, S. Kaski, and S. Hautaniemi. Systematic use of computational methods allows stratification of treatment responders in glioblastoma multiforme. *Systems Biomedicine*, 1:130–136, 2013.
- [94] P. Marttinen, J. Gillberg, A. Havulinna, J. Corander, and S. Kaski. Genome-wide association studies with high-dimensional phenotypes. *Statistical Applications in Genetics and Molecular Biology*, 12(4):413–431, 2013.
- [95] J. Caldas, N. Gehlenborg, E. Kettunen, A. Faisal, M. Rönty, A. G. Nicholson, S. Knuutila, A. Brazma, and S. Kaski. Data-driven information retrieval in heterogeneous collections of transcriptomics data links SIM2s to malignant pleural mesothelioma. *Bioinformatics*, 28:246–253, 2012.
- [96] E. Georgii, J. Salojärvi, M. Brosché, J. Kangasjärvi, and S. Kaski. Targeted retrieval of gene expression measurements using regulatory models. *Bioinformatics*, 28:2349–2356, 2012.
- [97] S. A. Khan, A. Faisal, J. P. Mpindi, J. A. Parkkinen, T. Kalliokoski, A. Poso, O. P. Kallioniemi, K. Wennerberg, and S. Kaski. Comprehensive data-driven analysis of the impact of chemoinformatic structure on the genome-wide biological response profiles of cancer cells to 1159 drugs. *BMC Bioinformatics*, 13:112, 2012.
- [98] G. Leen, J. Peltonen, and S. Kaski. Focused multi-task learning in a Gaussian process framework. *Machine Learning*, 89:157–182, 2012.
- [99] A. Ajanki, M. Billinghamurst, H. Gamper, T. Järvenpää, M. Kandemir, S. Kaski, M. Koskela, M. Kurimo, J. Laaksonen, K. Puolamäki, T. Ruokolainen, and T. Tossavainen. An augmented reality interface to contextual information. *Virtual Reality*, 15:161–173, 2011.
- [100] J. Caldas and S. Kaski. Hierarchical generative biclustering for microRNA expression analysis. *Journal of Computational Biology*, 18:251–261, 2011.
- [101] L. Lahti, L. L. Elo, T. Aittokallio, and S. Kaski. Probabilistic analysis of probe reliability in differential gene expression studies with short oligonucleotide arrays. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 8:217–225, 2011.
- [102] M. Sysi-Aho, A. Ermolov, P. V. Gopalacharyulu, A. Tripathi, T. Seppänen-Laakso, J. Maukonen, I. Mattila, S. T. Ruohonen, L. Vähätalo, L. Yetukuri, T. Härkönen, E. Lindfors, J. Nikkilä, J. Ilonen, O. Simell, M. Saarela, M. Knip, S. Kaski, E. Savontaus, and M. Orešič. Metabolic regulation in progression to autoimmune diabetes. *PLoS Computational Biology*, 7:e1002257, 2011.
- [103] A. Tripathi, A. Klami, M. Orešič, and S. Kaski. Matching samples of multiple views. *Data Mining and Knowledge Discovery*, 23:300–321, 2011.
- [104] L. Yetukuri, I. Huopaniemi, A. Koivuniemi, M. Maranghi, A. Hiukka, H. Nygren, S. Kaski, M.-R. Taskinen, I. Vattulainen, M. Jauhiainen, and M. Orešič. High density lipoprotein structural changes and drug response in lipidomic profiles following the long-term fenofibrate therapy in the FIELD substudy. *PLoS ONE*, 6(8):e23589, 2011.
- [105] I. Huopaniemi, T. Suviataival, J. Nikkilä, M. Orešič, and S. Kaski. Multivariate multi-way analysis of multi-source data. *Bioinformatics*, 26:i391–i398, 2010. (ISMB 2010).

- [106] L. Lahti, J. E. A. Knuutila, and S. Kaski. Global modeling of transcriptional responses in interaction networks. *Bioinformatics*, 26:2713–2720, 2010.
- [107] J. Parkkinen and S. Kaski. Searching for functional gene modules with interaction component models. *BMC Systems Biology*, 4:4, 2010.
- [108] J. Peltonen, Y. Yaslan, and S. Kaski. Relevant subtask learning by constrained mixture models. *Intelligent Data Analysis*, 14:641–662, 2010.
- [109] S. Rogers, A. Klami, J. Sinkkonen, M. Girolami, and S. Kaski. Infinite factorization of multiple non-parametric views. *Machine Learning*, 79(1-2):201–226, 2010.
- [110] J. Venna, J. Peltonen, K. Nybo, H. Aidos, and S. Kaski. Information retrieval perspective to nonlinear dimensionality reduction for data visualization. *Journal of Machine Learning Research*, 11:451–490, 2010.
- [111] A. Ajanki, D. R. Hardoon, S. Kaski, K. Puolamäki, and J. Shawe-Taylor. Can eyes reveal interest?—Implicit queries from gaze patterns. *User Modeling and User-Adapted Interaction: The Journal of Personalization Research*, 19:307–339, 2009.
- [112] F. Benachenhou, P. Jern, M. Oja, G. Sperber, V. Blikstad, P. Somervuo, S. Kaski, and J. Blomberg. Evolutionary conservation of orthoretroviral long terminal repeats (LTRs) and *ab initio* detection of single LTRs in genomic data. *PLoS ONE*, 4(4):e5179, 2009.
- [113] J. Caldas, N. Gehlenborg, A. Faisal, A. Brazma, and S. Kaski. Probabilistic retrieval and visualization of biologically relevant microarray experiments. *Bioinformatics*, 25:i145–i153, 2009. (ISMB/ECCB 2009).
- [114] I. Huopaniemi, T. Suvitaival, J. Nikkilä, M. Orešič, and S. Kaski. Two-way analysis of high-dimensional collinear data. *Data Mining and Knowledge Discovery*, 19:261–276, 2009.
- [115] J. Peltonen, J. Venna, and S. Kaski. Visualizations for assessing convergence and mixing of Markov chain Monte Carlo simulations. *Computational Statistics and Data Analysis*, 53:4453–4470, 2009.
- [116] E. Savia, K. Puolamäki, and S. Kaski. Latent grouping models for user preference prediction. *Machine Learning*, 74:75–109, 2009.
- [117] S. Savola, A. Klami, A. Tripathi, T. Niini, M. Serra, P. Picci, S. Kaski, D. Zambelli, K. Scotlandi, and S. Knuutila. Combined use of expression and CGH arrays pinpoints novel candidate genes in ewing sarcoma family of tumors. *BMC Cancer*, 9:17, 2009.
- [118] J. Ylipaavalniemi, E. Savia, S. Malinen, R. Hari, R. Vigário, and S. Kaski. Dependencies between stimuli and spatially independent fMRI sources: Towards brain correlates of natural stimuli. *NeuroImage*, 48:176–185, 2009.
- [119] A. Klami and S. Kaski. Probabilistic approach to detecting dependencies between data sets. *Neurocomputing*, 72:39–46, 2008.
- [120] J. Nikkilä, M. Sysi-Aho, A. Ermolov, T. Seppänen-Laakso, O. Simell, S. Kaski, and M. Orešič. Gender dependent progression of systemic metabolic states in early childhood. *Molecular Systems Biology*, 4:197, 2008.
- [121] A. Tripathi, A. Klami, and S. Kaski. Simple integrative preprocessing preserves what is shared in data sources. *BMC Bioinformatics*, 9:111, 2008.
- [122] P. Nymark, P. M. Lindholm, M. V. Korpela, L. Lahti, S. Ruosaari, S. Kaski, J. Hollmen, S. Anttila, V. L. Kinnula, and S. Knuutila. Gene expression profiles in asbestos-exposed epithelial and mesothelial lung cell lines. *BMC Genomics*, 8:62, 2007.
- [123] M. Oja, J. Peltonen, J. Blomberg, and S. Kaski. Methods for estimating human endogenous retrovirus activities from EST databases. *BMC Bioinformatics*, 8(Suppl 2):S11, 2007.
- [124] J. Venna and S. Kaski. Comparison of visualization methods for an atlas of gene expression data sets. *Information Visualization*, 6:139–154, 2007.



- [125] J. Venna and S. Kaski. Local multidimensional scaling. *Neural Networks*, 19:889–899, 2006.
- [126] S. Kaski, J. Nikkilä, J. Sinkkonen, L. Lahti, J. Knuuttila, and C. Roos. Associative clustering for exploring dependencies between functional genomics data sets. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2:203–216, 2005.
- [127] S. Kaski, J. Sinkkonen, and A. Klami. Discriminative clustering. *Neurocomputing*, 69:18–41, 2005.
- [128] J. Nikkilä, C. Roos, E. Savia, and S. Kaski. Explorative modeling of yeast stress response and its regulation with gCCA and associative clustering. *International Journal of Neural Systems*, 15:237–246, 2005.
- [129] M. Oja, G. O. Sperber, J. Blomberg, and S. Kaski. Self-organizing map-based discovery and visualization of human endogenous retroviral sequence groups. *International Journal of Neural Systems*, 15:163–180, 2005.
- [130] J. Peltonen and S. Kaski. Discriminative components of data. *IEEE Transactions on Neural Networks*, 16:68–83, 2005.
- [131] S. Kaski and J. Sinkkonen. Principle of learning metrics for exploratory data analysis. *Journal of VLSI Signal Processing, special issue on Machine Learning for Signal Processing*, 37:177–188, 2004.
- [132] K. Lagus, S. Kaski, and T. Kohonen. Mining massive document collections by the WEBSOM method. *Information Sciences*, 163:135–156, 2004.
- [133] J. Peltonen, A. Klami, and S. Kaski. Improved learning of Riemannian metrics for exploratory analysis. *Neural Networks*, 17:1087–1100, 2004. Invited paper.
- [134] S. Kaski, J. Nikkilä, M. Oja, J. Venna, P. Törönen, and E. Castrén. Trustworthiness and metrics in visualizing similarity of gene expression. *BMC Bioinformatics*, 4:48, 2003.
- [135] J. Nikkilä, P. Törönen, S. Kaski, J. Venna, E. Castrén, and G. Wong. Analysis and visualization of gene expression data using self-organizing maps. *Neural Networks*, 15:953–966, 2002.
- [136] V. Ollikainen, C. Bäckström, and S. Kaski. Electronic editor: Automatic content-based sequential compilation of newspaper articles. *Neurocomputing*, 43:91–106, 2002.
- [137] J. Salojärvi and S. Kaski. Mixture density from autonomous experts. *International Journal of Knowledge Based Intelligent Engineering Systems*, 6:48–55, 2002.
- [138] J. Sinkkonen and S. Kaski. Clustering based on conditional distributions in an auxiliary space. *Neural Computation*, 14:217–239, 2002.
- [139] S. Kaski, J. Sinkkonen, and J. Peltonen. Bankruptcy analysis with self-organizing maps in learning metrics. *IEEE Transactions on Neural Networks*, 12:936–947, 2001.
- [140] S. Kaski, J. Venna, and T. Kohonen. Coloring that reveals cluster structures in multivariate data. *Australian Journal of Intelligent Information Processing Systems*, 6:82–88, 2000.
- [141] T. Kohonen, S. Kaski, K. Lagus, J. Salojärvi, J. Honkela, V. Paatero, and A. Saarela. Self organization of a massive document collection. *IEEE Transactions on Neural Networks*, 11:574–585, 2000.
- [142] K. Lagus, T. Honkela, S. Kaski, and T. Kohonen. WEBSOM for textual data mining. *Artificial Intelligence Review*, 13:345–364, 1999.
- [143] S. Kaski, T. Honkela, K. Lagus, and T. Kohonen. WEBSOM—self-organizing maps of document collections. *Neurocomputing*, 21:101–117, 1998.
- [144] S. Kaski. Computationally efficient approximation of a probabilistic model for document representation in the WEBSOM full-text analysis method. *Neural Processing Letters*, 5:139–151, 1997.

- [145] T. Kohonen, S. Kaski, and H. Lappalainen. Self-organized formation of various invariant-feature filters in the Adaptive-Subspace SOM. *Neural Computation*, 9:1319–1342, 1997.
- [146] J. Sinkkonen, S. Kaski, M. Huottilainen, R. J. Ilmoniemi, R. Näätänen, and K. Kaila. Optimal resource allocation for novelty detection in a human auditory memory. *Neuroreport*, 7:2479–2482, 1996.
- [147] S.-L. Joutsiniemi, S. Kaski, and A. Larsen. Self-organizing map in recognition of topographic patterns of EEG spectra. *IEEE Transactions on Biomedical Engineering*, 42:1062–1068, 1995.
- [148] S. Kaski and T. Kohonen. Winner-take-all networks for physiological models of competitive learning. *Neural Networks*, 7:973–984, 1994.

## **A2 Review article, literature review, systematic review**

- [149] B. Güvenç Paltun, H. Mamitsuka, and S. Kaski. Improving drug response prediction by integrating multiple data sources: matrix factorization, kernel and network-based approaches. *Briefings in Bioinformatics*, 22:346–359, 2019.
- [150] J. Lintusaari, M. U. Gutmann, R. Dutta, S. Kaski, and J. Corander. Fundamentals and recent developments in approximate Bayesian computation. *Systematic Biology*, syw077, 2016.
- [151] J. Corander, T. Aittokallio, S. Ripatti, and S. Kaski. The rocky road to personalized medicine: computational and statistical challenges. *Personalized Medicine*, 9:109–114, 2012.
- [152] S. Kaski and J. Peltonen. Dimensionality reduction for data visualization. *IEEE Signal Processing Magazine*, 28(2):100–104, 2011.
- [153] M. Oja, S. Kaski, and T. Kohonen. Bibliography of self-organizing map (SOM) papers: 1998–2001 addendum. *Neural Computing Surveys*, 3:1–156, 2003. Available in electronic form at <http://www.soe.ucsc.edu/NCS/>.
- [154] S. Kaski, J. Kangas, and T. Kohonen. Bibliography of self-organizing map (SOM) papers: 1981–1997. *Neural Computing Surveys*, 1(3&4):1–176, 1998. Available in electronic form at <http://www.icsi.berkeley.edu/~jagota/NCS/>: Vol 1, pp. 102–350.

## **A3 Book section, chapters in research books**

- [155] I. Huopaniemi and S. Kaski. Computational statistics approaches to study metabolic syndrome. In M. Orešič and A. Vidal-Puig, editors, *A Systems Biology Approach to Study Metabolic Syndrome*, pages 319–340. Springer, 2014.
- [156] S. Kaski. Self-organizing maps. In Claude Sammut and Geoffrey I. Webb, editors, *Encyclopedia of Machine Learning*, pages 886–888. Springer, Berlin, 2010.
- [157] S. Kaski, J. Nikkilä, E. Savia, and C. Roos. Discriminative clustering of yeast stress response. In U. Seiffert, L. Jain, and P. Schweizer, editors, *Bioinformatics using Computational Intelligence Paradigms*, pages 75–92. Springer, Berlin, 2005.
- [158] S. Kaski, J. Nikkilä, and T. Kohonen. Methods for exploratory cluster analysis. In P. S. Szczepaniak, J. Segovia, J. Kacprzyk, and L. A. Zadeh, editors, *Intelligent Exploration of the Web*, pages 136–151. Physica-Verlag, Heidelberg, 2003. (Reprint of S. Kaski, J. Nikkilä, and T. Kohonen. Methods for exploratory cluster analysis. In *Proceedings of SSGRR 2000, International Conference on Advances in Infrastructure for Electronic Business, Science, and Education on the Internet, L’Aquila, July 31–August 6*. Scuola Superiore G. Reiss Romoli, 2000. Proceedings on CD-ROM, ISBN 88-85280-52-8.)
- [159] M. Oja, J. Nikkilä, P. Törönen, G. Wong, E. Castrén, and S. Kaski. Exploratory clustering of gene expression profiles of mutated yeast strains. In W. Zhang and I. Shmulevich, editors, *Computational and Statistical Approaches to Genomics*, pages 65–78. Kluwer, Boston, MA, 2002.

- [160] T. Honkela, S. Kaski, T. Kohonen, and K. Lagus. Self-organizing maps of very large document collections: Justification for the WEBSOM method. In I. Balderjahn, R. Mathar, and M. Schader, editors, *Classification, Data Analysis, and Data Highways*, pages 245–252. Springer, Berlin, 1998.
- [161] T. Honkela, K. Lagus, and S. Kaski. Self-organizing maps of large document collections. In G. Deboeck and T. Kohonen, editors, *Visual Explorations in Finance with Self-Organizing Maps*, pages 168–178. Springer, London, 1998.
- [162] S. Kaski and T. Kohonen. Tips for processing and color-coding of self-organizing maps. In G. Deboeck and T. Kohonen, editors, *Visual Explorations in Finance with Self-Organizing Maps*, pages 195–202. Springer, London, 1998.

#### A4 Conference proceedings

- [163] A. Nikitin, L. Iannucci, and S. Kaski. TSGM: A flexible framework for generative modeling of synthetic time series. In *Advances in Neural Information Processing Systems*, 2024. in press.
- [164] Q. T. Trinh, M. Heinonen, L. Acerbi, and S. Kaski. Improving robustness to corruptions with multiplicative weight perturbations. In *Advances in Neural Information Processing Systems*, 2024. in press.
- [165] S. De Peuter, S. Zhu, Y. Guo, A. Howes, and S. Kaski. Preference learning of latent decision utilities with a human-like model of preferential choice. In *Advances in Neural Information Processing Systems*, 2024. in press.
- [166] D. Huang, Y. Guo, L. Acerbi, and S. Kaski. Amortized Bayesian experimental design for decision-making. In *Advances in Neural Information Processing Systems*, 2024. in press.
- [167] M. Haussmann, T. M. S. Le, V. Halla-aho, S. Kurki, J. Leinonen, M. Koskinen, S. Kaski, and H. Lähdesmäki. Estimating treatment effects from single-arm trials via latent-variable modeling. In S. Dasgupta, S. Mandt, and Y. Li, editors, *Proceedings of AISTATS 2024, The 27th International Conference on Artificial Intelligence and Statistics*, volume 238 of *Proceedings of Machine Learning Research*, pages 2926–2934. PMLR, 2024.
- [168] R. Loftin, M. M. Çelikok, H. van Hoof, S. Kaski, and F. Oliehoek. Uncoupled learning of differential Stackelberg equilibria with commitments. In *Proceedings of AAMAS 2024, the 23rd International Conference on Autonomous Agents and Multiagent Systems*, pages 1265–1273. International Foundation for Autonomous Agents and Multiagent Systems, 2024.
- [169] J. Martinelli, A. Bharti, A. Tiihonen, S. T. John, L. Filstroff, S. J. Sloman, P. Rinke, and S. Kaski. Learning relevant contextual variables within Bayesian optimization. In N. Kiyavash and J. M. Mooij, editors, *Proceedings of UAI 2024, the Fortieth Conference on Uncertainty in Artificial Intelligence*, volume 244 of *Proceedings of Machine Learning Research*, pages 2450–2470. PMLR, 2024.
- [170] T. Silva, A. H. Souza, L. M. Carvalho, S. Kaski, and D. Mesquita. Embarrassingly parallel GFlowNets. In R. Salakhutdinov, Z. Kolter, K. Heller, A. Weller, N. Oliver, J. Scarlett, and F. Berkenkamp, editors, *Proceedings of ICML 2024, the 41st International Conference on Machine Learning*, volume 235 of *Proceedings of Machine Learning Research*, pages 45406–45431. PMLR, 2024.
- [171] S. J. Sloman, A. Bharti, J. Martinelli, and S. Kaski. Bayesian active learning in the presence of nuisance parameters. In N. Kiyavash and J. M. Mooij, editors, *Proceedings of UAI 2024, the Fortieth Conference on Uncertainty in Artificial Intelligence*, volume 244 of *Proceedings of Machine Learning Research*, pages 3245–3263. PMLR, 2024.
- [172] T. Trinh, M. Heinonen, L. Acerbi, and S. Kaski. Input-gradient space particle inference for neural network ensembles. In *Proceedings of ICLR 2024, the Twelfth International Conference on Learning Representations*. OpenReview.net, 2024. <https://openreview.net/forum?id=nLWiR5P3wr>

- [173] J. Wang, Y. Li, Y. Zhang, W. Pan, and S. Kaski. Open ad hoc teamwork with cooperative game theory. In R. Salakhutdinov, Z. Kolter, K. Heller, A. Weller, N. Oliver, J. Scarlett, and F. Berkenkamp, editors, *Proceedings of ICML 2024, the 41st International Conference on Machine Learning*, volume 235 of *Proceedings of Machine Learning Research*, pages 50902–50930. PMLR, 2024.
- [174] A. Bharti, M. Naslidnyk, O. Key, S. Kaski, and F. X. Briol. Optimally-weighted estimators of the maximum mean discrepancy for likelihood-free inference. In A. Krause, E. Brunskill, K. Cho, B. Engelhardt, S. Sabato, and J. Scarlett, editors, *Proceedings of ICML 2023, the 40th International Conference on Machine Learning*, volume 202 of *Proceedings of Machine Learning Research*, pages 2289–2312. PMLR, 2023.
- [175] M. M. Çelikok, P.-A. Murena, and S. Kaski. Teaching to learn: Sequential teaching of learners with internal states. In *Proceedings of AAAI-23, the AAAI Conference on Artificial Intelligence*, volume 37, pages 5939–5947. AAAI, 2023.
- [176] S. De Peuter and S. Kaski. Zero-shot assistance in sequential decision problems. In *Proc. AAAI-23, the Thirty-Seventh AAAI Conference on Artificial Intelligence*, pages 11551–11559. AAAI, 2023.
- [177] T. Garipov, S. De Peuter, G. Yang, V. Garg, S. Kaski, and T. Jaakkola. Compositional sculpting of iterative generative processes. In *Advances in Neural Information Processing Systems*, volume 36, pages 12665–12702. Curran Associates, Inc., 2023.
- [178] A. Hämäläinen, M. M. Çelikok, and S. Kaski. Differentiable user models. In *Proceedings of UAI 2023, the Thirty-Ninth Conference on Uncertainty in Artificial Intelligence*, volume 216 of *PMLR*, pages 798–808, 2023. Best paper award in NeurIPS HILL 2022 workshop, for a preliminary version.
- [179] D. Huang, A. Bharti, A. Souza, L. Acerbi, and S. Kaski. Learning robust statistics for simulation-based inference under model misspecification. In *Advances in Neural Information Processing Systems*, volume 36, pages 7289–7310. Curran Associates, Inc., 2023.
- [180] D. Huang, M. Haussmann, U. Remes, S. John, G. Clarté, K. S. Luck, S. Kaski, and L. Acerbi. Practical equivariances via relational conditional neural processes. In *Advances in Neural Information Processing Systems*, volume 36, pages 29201–29238. Curran Associates, Inc., 2023.
- [181] A. Khoshvishkaie, P. Mikkola, P.-A. Murena, and S. Kaski. Cooperative Bayesian optimization for imperfect agents. In *Proceedings of ECMLPKDD 2023, Machine Learning and Knowledge Discovery in Databases: Research Track*, volume 14169 of *Lecture Notes in Computer Science*, pages 475–490. Springer, 2023.
- [182] P. Mikkola, J. Martinelli, L. Filstroff, and S. Kaski. Multi-fidelity Bayesian optimization with unreliable information sources. In *Proceedings of the 26th International Conference on Artificial Intelligence and Statistics (AISTATS) 2023*, volume 206 of *PMLR*, pages 7425–7454, 2023.
- [183] O. Räisä, J. Jälkö, S. Kaski, and A. Honkela. Noise-aware statistical inference with differentially private synthetic data. In *Proceedings of the 26th International Conference on Artificial Intelligence and Statistics (AISTATS) 2023*, volume 206, pages 3620–3643, 2023.
- [184] S. Wharrie, Z. Yang, A. Ganna, and S. Kaski. Characterizing personalized effects of family information on disease risk using graph representation learning. In *Proceedings of the 8th Machine Learning for Healthcare Conference*, volume 219 of *PMLR*, pages 824–845, 2023.
- [185] S. Zhu, R. Kaushik, S. Kaski, and V. Kyrki. Imitation-guided multimodal policy generation from behaviourally diverse demonstrations. In *Proceedings of IROS 2023, IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 1675–1682. IEEE, 2023.
- [186] A. Bharti, L. Filstroff, and S. Kaski. Approximate Bayesian computation with domain expert in the loop. In *Proceedings of the 39th International Conference on Machine Learning*, volume 162 of *PMLR*, pages 1893–1905, 2022.
- [187] M. M. Çelikok, F. A. Oliehoek, and S. Kaski. Best-response Bayesian reinforcement learning with BA-POMDPs for centaurs. In *Proc. of the 21st International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2022)*, pages 235–243, 2022.

- [188] T. Cui, Y. Kumar, P. Marttinen, and S. Kaski. Deconfounded representation similarity for comparison of neural networks. In S. Koyejo, S. Mohamed, A. Agarwal, D. Belgrave, K. Cho, and A. Oh, editors, *Advances in Neural Information Processing Systems. Proc. 36th Conference on Neural Information Processing Systems (NeurIPS 2022)*, volume 35, pages 19138–19151. Curran Associates, Inc., 2022.
- [189] P. Hegde, C. Yildiz, H. Lähdesmäki, S. Kaski, and M. Heinonen. Variational multiple shooting for Bayesian ODEs with Gaussian processes. In *Proceedings of the 38th Conference on Uncertainty in Artificial Intelligence (UAI 2022)*, volume 180 of *PMLR*, pages 790–799, 2022.
- [190] A. Nikitin, St John, A. Solin, and S. Kaski. Non-separable spatio-temporal graph kernels via SPDEs. In *Proceedings of AISTATS 2022, The 25th International Conference on Artificial Intelligence and Statistics*, volume 151 of *PMLR*, pages 10640–10660, 2022.
- [191] A. Nikitin and S. Kaski. Human-in-the-loop large-scale predictive maintenance of workstations. In *Proceedings of KDD’22, the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining*, pages 3682–3690, 2022.
- [192] L. Prediger, N. Loppi, S. Kaski, and A. Honkela. d3p - a python package for differentially-private probabilistic programming. *Proceedings on Privacy Enhancing Technologies*, (2):407–425, 2022.
- [193] D. de Souza, D. Mesquita, S. Kaski, and L. Acerbi. Parallel MCMC without embarrassing failures. In *Proceedings of The 25th International Conference on Artificial Intelligence and Statistics*, volume 151, pages 1786–1804. PMLR, 2022.
- [194] A. H. Souza, D. Mesquita, S. Kaski, and V. K. Garg. Provably expressive temporal graph networks. In S. Koyejo, S. Mohamed, A. Agarwal, D. Belgrave, K. Cho, and A. Oh, editors, *Advances in Neural Information Processing Systems. Proc. NeurIPS 2022, 36th Conference on Neural Information Processing Systems*, volume 35, pages 32257–32269. Curran Associates, Inc., 2022.
- [195] T. Tringh, M. Heinonen, L. Acerbi, and S. Kaski. Tackling covariate shift with node-based Bayesian neural networks. In *Proceedings of ICML 2022, the 39th International Conference on Machine Learning*, volume 162 of *PMLR*, pages 21751–21775, 2022.
- [196] Y. Verma, S. Kaski, M. Heinonen, and V. K. Garg. Modular flows: Differential molecular generation. In S. Koyejo, S. Mohamed, A. Agarwal, D. Belgrave, K. Cho, and A. Oh, editors, *Advances in Neural Information Processing Systems. Proc. NeurIPS 2022, 36th Conference on Neural Information Processing Systems*, volume 35, pages 12409–12421. Curran Associates, Inc., 2022.
- [197] K. El Mekkaoui, D. Parente, P. Blomstedt, and S. Kaski. Federated stochastic gradient Langevin dynamics. In *Proceedings of UAI 2021, the 37th Conference on Uncertainty in Artificial Intelligence*, pages 1703–1712, 2021.
- [198] A. Keurulainen, I. Westerlund, S. Kaski, and A. Ilin. Learning to assist agents by observing them. In *Proceedings of ICANN 2021, Artificial Neural Networks and Machine Learning*, volume 12894 of *LNTCS*, pages 519–530. Springer, 2021.
- [199] A. Keurulainen, I. Westerlund, A. Kwiatkowski, S. Kaski, and A. Ilin. Behaviour-conditioned policies for cooperative reinforcement learning tasks. In *Proceedings of ICANN 2021, Artificial Neural Networks and Machine Learning*, volume 12894 of *LNTCS*, pages 493–504. Springer, 2021.
- [200] T. Kulkarni, J. Jälkö, S. Kaski, A. Koskela, and A. Honkela. Differentially private Bayesian inference for generalized linear models. In *Proceedings of ICML 2021, the 38th International Conference on Machine Learning*, volume 139 of *PMLR*, pages 5838–5849, 2021.
- [201] A. Mallasto, M. Heinonen, and S. Kaski. Bayesian inference for optimal transport with stochastic cost. In *Proceedings of ACML 2021, Asian Conference on Machine Learning*, volume 157 of *PMLR*, pages 1601–1616, 2021.

- [202] A. Nikitin, N. Singh, and S. Kaski. Decision rule elicitation for domain adaptation. In *Proceedings of IUI 2021, the 26th International Conference on Intelligent User Interfaces*, pages 244–248, 2021.
- [203] Z. Shen, M. Heinonen, and S. Kaski. De-randomizing MCMC dynamics with the diffusion stein operator. In M. Ranzato, A. Beygelzimer, Y. Dauphin, P.S. Liang, and J. Wortman Vaughan, editors, *Advances in Neural Information Processing Systems. Proc. NeurIPS 2021*, volume 34, pages 17507–17517. Curran Associates, Inc., 2021.
- [204] T. Vuong, S. Andolina, G. Jacucci, P. Dae, K. Klouche, M. Sjöberg, T. Ruotsalo, and S. Kaski. EntityBot: Supporting everyday digital tasks with entity recommendations. In *Proceedings of RecSys’21, the 15th ACM Conference on Recommender Systems*, pages 753–756. ACM, 2021.
- [205] K. Blomqvist, S. Kaski, and M. Heinonen. Deep convolutional Gaussian processes. In *Proc. ECML PKDD 2019, Machine Learning and Knowledge Discovery in Databases*, pages 582–597. Springer, 2020.
- [206] F. Colella, P. Dae, J. Jokinen, A. Oulasvirta, and S. Kaski. Human strategic steering improves performance of interactive optimization. In *Proc. UMAP 2020, the 28th ACM Conference on User Modelling, Adaptation and Personalization*, pages 293–297, 2020.
- [207] T. Cui, P. Marttinen, and S. Kaski. Learning global pairwise interactions with Bayesian neural networks. In *Proc. ECAI 2020, 24th European Conference on Artificial Intelligence*, pages 1087–1094, 2020.
- [208] D. Mesquita, A. Souza, and S. Kaski. Rethinking pooling in graph neural networks. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, and H. Lin, editors, *Advances in Neural Information Processing Systems*, volume 33, pages 2220–2231. Curran Associates, Inc., 2020.
- [209] P. Mikkola, M. Todorovic, J. Järvi, P. Rinke, and S. Kaski. Projective preferential Bayesian optimization. In *Proc. ICML 2020, the 37th International Conference on Machine Learning*, volume 119 of *PMLR*, pages 6884–6892, 2020.
- [210] Z. Shen, M. Heinonen, and S. Kaski. Learning spectrograms with convolutional spectral kernels. In S. Chiappa and R. Calandra, editors, *Proceedings of AISTATS 2020, International Conference on Artificial Intelligence and Statistics*, volume 108 of *Proceedings of Machine Learning Research*, pages 3826–3836. PMLR, 2020.
- [211] J. Strahl, J. Peltonen, H. Mamitsuka, and S. Kaski. Scalable probabilistic matrix factorization with graph-based priors. In *Proc. AAAI-2020, the Thirty-Fourth AAAI Conference on Artificial Intelligence*, volume 34, pages 5851–5858, 2020.
- [212] T. Vander Aa, X. Qin, P. Blomstedt, R. Wuyts, W. Verachtert, and S. Kaski. A high-performance implementation of Bayesian matrix factorization with limited communication. In *Proceedings of ICCS 2020, International Conference on Computational Science*, pages 3–16. Springer, 2020.
- [213] H. Afrabandpey, T. Peltola, and S. Kaski. Human-in-the-loop active covariance learning for improving prediction in small data sets. In *Proceedings of IJCAI 2019, the Twenty-Eighth International Joint Conference on Artificial Intelligence*, pages 1959–1966, 2019.
- [214] P. R. Hegde, M. Heinonen, H. Lähdesmäki, and S. Kaski. Deep learning with differential Gaussian process flows. In K. Chaudhuri and M. Sugiyama, editors, *The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS)*, volume 89 of *Proceedings of Machine Learning Research*, pages 1812–1821. PMLR, 2019. **Notable paper award.**
- [215] Y. Lu, Z. Yang, J. Kannala, and S. Kaski. Learning image relations with contrast association networks. In *2019 International Joint Conference on Neural Networks (IJCNN)*. IEEE, 2019.
- [216] D. Mesquita, P. Blomstedt, and S. Kaski. Embarrassingly parallel MCMC using deep invertible transformations. In *Proceedings of UAI 2019, the 35th Uncertainty in Artificial Intelligence Conference*, ID: 496, 2019.

- [217] T. Peltola, M. M. Celikok, P. Daece, and S. Kaski. Machine teaching of active sequential learners. In H. Wallach, H. Larochelle, A. Beygelzimer, F. d'Alché-Buc, E. Fox, and R. Garnett, editors, *Advances in Neural Information Processing Systems 32*, pages 11204–11215. Curran Associates, Inc., 2019.
- [218] X. Qin, P. Blomstedt, and S. Kaski. Scalable Bayesian non-linear matrix completion. In *Proceedings of IJCAI 2019, the Twenty-Eighth International Joint Conference on Artificial Intelligence*, pages 3275–3281, 2019.
- [219] Z. Shen, M. Heinonen, and S. Kaski. Harmonizable mixture kernels with variational Fourier features. In K. Chaudhuri and M. Sugiyama, editors, *The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS)*, volume 89 of *Proceedings of Machine Learning Research*, pages 3273–3282. PMLR, 2019.
- [220] I. Sundin, P. Schulam, E. Siivola, A. Vehtari, S. Saria, and S. Kaski. Active learning for decision-making from imbalanced observational data. In Kamalika Chaudhuri and Ruslan Salakhutdinov, editors, *Proceedings of the 36th International Conference on Machine Learning*, volume 97 of *Proceedings of Machine Learning Research*, pages 6046–6055. PMLR, 2019.
- [221] P. Daece, T. Peltola, A. Vehtari, and S. Kaski. User modelling for avoiding overfitting in interactive knowledge elicitation for prediction. In *Proceedings of IUI 2018, The 23rd ACM International Conference on Intelligent User Interfaces*, pages 305–310, New York, NY, 2018. ACM.
- [222] P. Hegde, M. Heinonen, and S. Kaski. Variational zero-inflated Gaussian processes with sparse kernels. In *Proceedings of UAI 2018, the Thirty Fourth Conference of Uncertainty in Artificial Intelligence*, pages 361–371, 2018.
- [223] T. Peltola, J. Jokinen, and S. Kaski. Probabilistic formulation of the take the best heuristic. In *Proceedings of CogSci 2018, the 40th Annual Meeting of the Cognitive Science Society*, pages 2214–2219. Cognitive Science Society, 2018.
- [224] H. Afrabandpey, T. Peltola, and S. Kaski. Interactive prior elicitation of feature similarities for small sample size prediction. In *Proceedings of UMAP 2017, the 25th Conference on User Modeling, Adaptation and Personalization*, pages 265–269, New York, NY, USA, 2017. ACM.
- [225] O. Barral, I. Kosunen, T. Ruotsalo, M. M. Spapé, M. J. A. Eugster, N. Ravaja, S. Kaski, and G. Jacucci. BCI for physiological text annotation. In *Proceedings of BCIforReal'17, the 2017 ACM Workshop on An Application-oriented Approach to BCI out of the Laboratory*, pages 9–13, New York, NY, USA, 2017. ACM.
- [226] M. Heikkilä, E. Lagerspetz, S. Kaski, K. Shimizu, S. Tarkoma, and A. Honkela. Differentially private Bayesian learning on distributed data. In I. Guyon, U. V. Luxburg, S. Bengio, H. Wallach, R. Fergus, S. Vishwanathan, and R. Garnett, editors, *Advances in Neural Information Processing Systems 30*, pages 3229–3238. Curran Associates, Inc., 2017.
- [227] A. Kangasrääsio, K. Athukorala, A. Howes, J. Corander, S. Kaski, and A. Oulasvirta. Inferring cognitive models from data using approximate Bayesian computation. In *Proceedings of CHI 2017, the 2017 CHI Conference on Human Factors in Computing Systems*, pages 1295–1306, New York, NY, USA, 2017. ACM.
- [228] L. Micallef, I. Sundin, P. Marttinen, M. Ammad-ud-din, T. Peltola, M. Soare, G. Jacucci, and S. Kaski. Interactive elicitation of knowledge on feature relevance improves predictions in small data sets. In *Proceedings of IUI'17, the 22nd International Conference on Intelligent User Interfaces*, pages 547–552, New York, NY, USA, 2017. ACM.
- [229] S. Remes, M. Heinonen, and S. Kaski. Non-stationary spectral kernels. In I. Guyon, U. V. Luxburg, S. Bengio, H. Wallach, R. Fergus, S. Vishwanathan, and R. Garnett, editors, *Advances in Neural Information Processing Systems 30, Proceedings of NIPS2017*, pages 4645–4654. Curran Associates, Inc., 2017.
- [230] S. Remes, M. Heinonen, and S. Kaski. A mutually-dependent Hadamard kernel for modelling latent variable couplings. In M.-L. Zhang and Y.-K. Noh, editors, *Proceedings of ACML 2017, the 9th Asian Conference on Machine Learning*, volume 77 of *Proceedings of Machine Learning Research*, pages 455–470. PMLR, 2017.

- [231] M. Yamada, W. Lian, A. Goyal, J. Chen, K. Wimalawarne, S. A. Khan, S. Kaski, H. Mamitsuka, and Y. Chang. Convex factorization machine for toxicogenomics prediction. In *Proceedings of KDD 2017, the 23rd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, pages 1215–1224, New York, NY, USA, 2017. ACM.
- [232] M. Yamada, K. Takeuchi, T. Iwata, J. Shawe-Taylor, and S. Kaski. Localized Lasso for high-dimensional regression. In Aarti Singh and Jerry Zhu, editors, *Proceedings of AISTATS 2017, the 20th International Conference on Artificial Intelligence and Statistics*, volume 54 of *Proceedings of Machine Learning Research*, pages 325–333, Fort Lauderdale, FL, USA, 20–22 Apr 2017. PMLR.
- [233] P. Daece, J. Pyykkö, D. Glowacka, and S. Kaski. Interactive intent modeling from multiple feedback domains. In *Proceedings of IUI 2016, the 21st International Conference on Intelligent User Interfaces*, pages 71–75, New York, NY, 2016. ACM.
- [234] J. Gao, M. Yamada, S. Kaski, H. Mamitsuka, and S. Zhu. A robust convex formulation for ensemble clustering. In *Proceedings of IJCAI-16, the Twenty-Fifth International Joint Conference on Artificial Intelligence*, pages 1476–1482, Palo Alto, CA, 2016. AAAI Press.
- [235] M. Heinonen, H. Mannerström, J. Rousu, S. Kaski, and H. Lähdesmäki. Non-stationary Gaussian process regression with Hamiltonian Monte Carlo. In Arthur Gretton and Christian C. Robert, editors, *Proceedings of AISTATS 2016, the 19th International Conference on Artificial Intelligence and Statistics*, JMLR W&CP, pages 732–740. JMLR, 2016.
- [236] A. Kangasrääsio, Y. Chen, D. Glowacka, and S. Kaski. Interactive modelling of concept drift and errors in relevance feedback. In *Proceedings of UMAP2016, the 2016 Conference on User Modeling Adaptation and Personalization*, pages 185–193, New York, NY, 2016. ACM.
- [237] S. Remes, T. Mononen, and S. Kaski. Classification of weak multi-view signals by sharing factors in a mixture of Bayesian group factor analyzers. In *Proceedings of MLINI 2015, the 5th Workshop on Machine Learning and Interpretation in Neuroimaging at NIPS 2015*, 2016. <https://arxiv.org/abs/1605.04435>.
- [238] M. Soare, M. Ammad-ud-din, and S. Kaski. Regression with  $n \rightarrow 1$  by expert knowledge elicitation. In *Proceedings of ICMLA 2016, IEEE 15th International Conference on Machine Learning and Applications*, pages 734–739. IEEE, 2016.
- [239] R. Tavakoli, H. Poostchi, J. Peltonen, J. Laaksonen, and S. Kaski. Preliminary studies on personalized preference prediction from gaze in comparing visualizations. In *Advances in Visual Computing. Proceedings of ISVC 2016*, Part II. Lecture Notes in Computer Science, vol. 10073, pages 576–585. Springer, 2016.
- [240] S. Virtanen, H. Afrabandpey, and S. Kaski. Visualizations relevant to the user by multi-view latent variable factorization. In *Proceedings of ICASSP-2016, IEEE International Conference on Acoustics, Speech and Signal Processing*, pages 2464–2468. IEEE, 2016.
- [241] O. Barral, M.J.A. Eugster, T. Ruotsalo, M. Sovijärvi-Spapé, I. Kosunen, N. Ravaja, S. Kaski, and G. Jacucci. Exploring peripheral physiology as a predictor of perceived relevance in information retrieval. In *Proceedings of the 20th International Conference on Intelligent User Interfaces*, pages 389–399, New York, NY, 2015. ACM.
- [242] A. Kangasrääsio, D. Glowacka, and S. Kaski. Improving controllability and predictability of interactive recommendation interfaces for exploratory search. In *Proceedings of the 20th International Conference on Intelligent User Interfaces, IUI '15*, pages 247–251, New York, NY, USA, 2015. ACM.
- [243] T. Ruotsalo, J. Peltonen, M. J. A. Eugster, D. Glowacka, A. Reijonen, G. Jacucci, P. Myllymäki, and S. Kaski. SciNet: Interactive intent modeling for information discovery. In *Proceedings of SIGIR'15, the 38th International ACM SIGIR Conference on Research and Development in Information Retrieval*, pages 1043–1044. ACM, New York, NY, 2015.
- [244] Z. Yang, J. Peltonen, and S. Kaski. Majorization-minimization for manifold embedding. In Guy Lebanon and S. V. N. Vishwanathan, editors, *Proceedings of AISTATS-2015, the Eighteenth International Conference on Artificial Intelligence and Statistics*, JMLR W&CP, pages 1088–1097. JMLR, 2015.



- [245] K. Bunte, M. Järvisalo, J. Berg, P. Myllymäki, J. Peltonen, and S. Kaski. Optimal neighborhood preserving visualization by maximum satisfiability. In C. E. Brodley and P. Stone, editors, *Proceedings of AAAI-14, The Twenty-Eighth AAAI Conference on Artificial Intelligence*, pages 1694–1700. AAAI, 2014.
- [246] M. Eugster, T. Ruotsalo, M. Spapé, I. Kosunen, O. Barral, N. Ravaja, G. Jacucci, and S. Kaski. Predicting term-relevance from brain signals. In *Proceedings of the 37th International ACM SIGIR Conference on Research & Development in Information Retrieval*, pages 425–434, New York, NY, 2014. ACM.
- [247] S. A. Khan and S. Kaski. Bayesian multi-view tensor factorization. In T. Calders et al., editor, *Machine Learning and Knowledge Discovery in Databases, ECML PKDD 2014*, volume I, pages 656–671, Berlin, 2014. Springer.
- [248] S. Seth, J. Shawe-Taylor, and S. Kaski. Retrieval of experiments by efficient comparison of marginal likelihoods. In C. K. Loo, K. S. Yap, K. W. Wong, A. Teon, and K. Huang, editors, *Neural Information Processing, Proceedings of ICONIP 2014, Part II of Lecture Notes in Computer Science Volume 8835*, pages 135–142, Switzerland, 2014. Springer.
- [249] Z. Yang, J. Peltonen, and S. Kaski. Optimization equivalence of divergences improves neighbor embedding. In *Proceedings of ICML 2014, the 31st International Conference on Machine Learning*, volume 32 of *JMLR W&CP*, pages 460–468. JMLR, 2014.
- [250] A. Ajanki, M. Koskela, J. Laaksonen, and S. Kaski. Adaptive timeline interface to personal history data. In *Proceedings of ICMI 2013, the 15th ACM International Conference on Multimodal Interaction*, pages 229–236, New York, NY, 2013. ACM.
- [251] D. Glowacka, T. Ruotsalo, K. Konyushkova, K. Athukorala, S. Kaski, and G. Jacucci. Directing exploratory search: Reinforcement learning from user interactions with keywords. In *Proceedings of IUI'13, International Conference on Intelligent User Interfaces*, pages 117–128, New York, NY, 2013. ACM. **Best paper award.**
- [252] M. Gönen, S. A. Khan, and S. Kaski. Kernelized Bayesian matrix factorization. In *Proceedings of ICML 2013, the 30th International Conference on Machine Learning*, volume 28 of *JMLR W&CP*, pages 864–872. JMLR, 2013.
- [253] J. Peltonen, M. Sandholm, and S. Kaski. Information retrieval perspective to interactive data visualization. In M. Hlawitschka and T. Weinkauff, editors, *Proceedings of Eurovis 2013, The Eurographics Conference on Visualization*. The Eurographics Association, 2013.
- [254] T. Ruotsalo, K. Athukorala, D. Glowacka, K. Konyushkova, A. Oulasvirta, S. Kaipainen, S. Kaski, and G. Jacucci. Supporting exploratory search tasks with interactive user modelling. In *Proceedings of ASIST 2013, the 76th ASIS&T Annual Meeting*. Association for Information Science and Technology.
- [255] T. Ruotsalo, J. Peltonen, M. J. A. Eugster, D. Glowacka, K. Konyushkova, K. Athukorala, I. Kosunen, A. Reijonen, P. Myllymäki, G. Jacucci, and S. Kaski. Directing exploratory search with interactive intent modeling. In *Proceedings of CIKM 2013, the ACM International Conference of Information and Knowledge Management*, pages 1759–1764, New York, NY, 2013. ACM.
- [256] Z. Yang, J. Peltonen, and S. Kaski. Scalable optimization of neighbor embedding for visualization. In *Proceedings of ICML 2013, the 30th International Conference on Machine Learning*, volume 28 of *JMLR W&CP*, pages 127–135. JMLR, 2013.
- [257] A. Faisal, J. Gillberg, J. Peltonen, G. Leen, and S. Kaski. Sparse nonparametric topic model for transfer learning. In *Proceedings of 20th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning*, pages 269–274, 2012.
- [258] M. Kandemir, A. Klami, A. Vetek, and S. Kaski. Unsupervised inference of auditory attention from biosensors. In P. A. Flach, T. De Bie, and N. Cristianini, editors, *Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD 2012)*, pages 403–418, Springer, Heidelberg, Germany, 2012.

- [259] M. Kandemir and S. Kaski. Learning relevance from natural eye movements in pervasive interfaces. In L.-P. Morency and D. Bohus, editors, *Proceedings of the International Conference on Multimodal Interaction (ICMI'12)*, pages 85–82, ACM, New York, NY, 2012.
- [260] S. Virtanen, A. Klami, S. A. Khan, and S. Kaski. Bayesian group factor analysis. In N. Lawrence and M. Girolami, editors, *Proceedings of the Fifteenth International Conference on Artificial Intelligence and Statistics*, volume 22 of *JMLR W&CP*, pages 1269–1277. JMLR, 2012.
- [261] A. Ajanki and S. Kaski. Probabilistic proactive timeline browser. In T. Honkela, W. Duch, M. Girolami, and S. Kaski, editors, *Proceedings of the 21st International Conference on Artificial Neural Networks (ICANN), Part II*, Lecture Notes in Computer Science, pages 357–364, Berlin, 2011. Springer.
- [262] M. Gönen, M. Kandemir, and S. Kaski. Multitask learning using regularized multiple kernel learning. In B.-L. Lu, L. Zhang, and J. Kwok, editors, *Proceedings of 18th International Conference on Neural Information Processing (ICONIP)*, volume 7063 of *Lecture Notes in Computer Science*, pages 500–509, Berlin / Heidelberg, 2011. Springer.
- [263] G. Leen, J. Peltonen, and S. Kaski. Focused multi-task learning using Gaussian processes. In D. Gunopulos, T. Hofmann, D. Malerba, and M. Vazirgiannis, editors, *Machine Learning and Knowledge Discovery in Databases (Proceedings of ECML PKDD 2011), Part II*, pages 310–325. Springer Berlin / Heidelberg, 2011. **Best paper award** in Machine Learning.
- [264] J. Peltonen and S. Kaski. Generative modeling for maximizing precision and recall in information visualization. In G. Gordon, D. Dunson, and M. Dudik, editors, *Proceedings of the Fourteenth International Conference on Artificial Intelligence and Statistics*, volume 15 of *JMLR W&CP*, pages 597–587. JMLR, 2011.
- [265] T. Suvitaival, I. Huopaniemi, M. Orešič, and S. Kaski. Cross-species translation of multi-way biomarkers. In T. Honkela, W. Duch, M. Girolami, and S. Kaski, editors, *Artificial Neural Networks and Machine Learning - ICANN 2011*, volume 6791 of *Lecture Notes in Computer Science*, pages 209–216. Springer Berlin / Heidelberg, 2011.
- [266] S. Virtanen, A. Klami, and S. Kaski. Bayesian CCA via group sparsity. In L. Getoor and T. Scheffer, editors, *Proceedings of the 28th International Conference on Machine Learning (ICML-11)*, pages 457–464, ACM, New York, NY, 2011.
- [267] A. Ajanki, M. Billinghamurst, H. Gamper, T. Järvenpää, M. Kandemir, S. Kaski, M. Koskela, M. Kurimo, J. Laaksonen, K. Puolamäki, T. Ruokolainen, and T. Tossavainen. Contextual information access with augmented reality. In *Proceedings of MLSP 2010, IEEE International Workshop on Machine Learning for Signal Processing*, pages 95–100. IEEE, 2010.
- [268] P. Auer, Z. Hussain, S. Kaski, A. Klami, J. Kujala, J. Laaksonen, A. P. Leung, K. Pasupa, and J. Shawe-Taylor. Pinview: Implicit feedback in content-based image retrieval. In T. Diethe, N. Cristianini, and J. Shawe-Taylor, editors, *Proceedings of Workshop on Applications of Pattern Analysis*, volume 11 of *JMLR Workshop and Conference Proceedings*, pages 51–57, 2010.
- [269] J. Caldas and S. Kaski. Hierarchical generative biclustering for microRNA expression analysis. In B. Berger, editor, *Research in Computational Molecular Biology, Proceedings of 14th Annual International Conference RECOMB 2010, Lisbon, Portugal, April 25-28*, pages 65–79, Springer, Berlin, 2010.
- [270] I. Huopaniemi, T. Suvitaival, M. Orešič, and S. Kaski. Graphical multi-way models. In A. Gionis, J. Luis Balcázar, F. Bonchi and M. Sebag, editors, *Machine Learning and Knowledge Discovery in Databases. Proceedings of European Conference, ECML PKDD 2010, Barcelona, Spain, September 20-24, 2010*, volume I, pages 538–553, Springer, Berlin, 2010.
- [271] M. Kandemir, V.-M. Saarinen, and S. Kaski. Inferring object relevance from gaze in dynamic scenes. In *Proceedings of ETRA 2010, ACM Symposium on Eye Tracking Research & Applications, Austin, TX, USA, March 22-24*, pages 105–108, ACM, New York, NY, 2010.
- [272] S. Kaski. Three paths to relevance. In A. Hanazawa, T. Miki, and K. Horio, editors, *Brain-Inspired Information Technology*, pages 11–13. Springer, Berlin Heidelberg, 2010.

- [273] A. Klami, S. Virtanen, and S. Kaski. Bayesian exponential family projections for coupled data sources. In P. Grunwald and P. Spirtes, editors, *Proceedings of the Twenty-Sixth Conference on Uncertainty in Artificial Intelligence (2010)*, pages 286–293, AUAI Press, Corvallis, Oregon, 2010.
- [274] J. Parkkinen, K. Nybo, J. Peltonen, and S. Kaski. Graph visualization with latent variable models. In *Proceedings of MLG-2010, the Eighth Workshop on Mining and Learning with Graphs*, pages 94–101. ACM, New York, NY, USA, 2010.
- [275] J. Peltonen, H. Aidos, N. Gehlenborg, A. Brazma, and S. Kaski. An information retrieval perspective on visualization of gene expression data with ontological annotation. In *Proceedings of ICASSP 2010, IEEE International Conference on Acoustics, Speech and Signal Processing*, pages 2178–2181. IEEE, Piscataway, NJ, 2010.
- [276] J. Viinikanoja, A. Klami, and S. Kaski. Variational Bayesian mixture of robust CCA models. In A. Gionis J. Luis Balcázar, F. Bonchi and M. Sebag, editors, *Machine Learning and Knowledge Discovery in Databases. Proceedings of European Conference, ECML PKDD 2010, Barcelona, Spain, September 20-24, 2010*, volume III, pages 370–385, Springer, Berlin, 2010.
- [277] L. Kozma, A. Klami, and S. Kaski. GaZIR: Gaze-based zooming interface for image retrieval. In *Proceedings of ICMI-MLMI 2009, The Eleventh International Conference on Multimodal Interfaces and The Sixth Workshop on Machine Learning for Multimodal Interaction*, pages 305–312, ACM, New York, NY, USA, 2009.
- [278] L. Lahti, S. Myllykangas, S. Knuutila, and S. Kaski. Dependency detection with similarity constraints. In *Proceedings of MLSP 2009, IEEE International Workshop on Machine Learning for Signal Processing*, pages 89–94. IEEE, 2009.
- [279] G. Leen, D. R. Hardoon, and S. Kaski. Automatic choice of control measurements. In Z.-H. Zhou and T. Washio, editors, *Advances in Machine Learning (Proc. ACML’09, The 1st Asian Conference on Machine Learning)*, volume 5828 of *Lecture Notes in Computer Science*, pages 206–219. Springer, 2009.
- [280] K. Pasupa, C. Saunders, S. Szedmak, A. Klami, S. Kaski, and S. Gunn. Learning to rank images from eye movements. In *IEEE International Workshop on Human-Computer Interaction (HCI2009), October 4, 2009, Kyoto, Japan*, pages 2009–2016, 2009.
- [281] J. Peltonen, H. Aidos, and S. Kaski. Supervised nonlinear dimensionality reduction by neighbor retrieval. In *Proceedings of ICASSP 2009, the IEEE International Conference on Acoustics, Speech, and Signal Processing*, pages 1809–1812, 2009.
- [282] K. Puolamäki and S. Kaski. Bayesian solutions to the label switching problem. In N. Adams, C. Robardet, A. Siebes, and J.-F. Boulicaut, editors, *Advances in Intelligent Data Analysis VIII, Proceedings of the 8th International Symposium on Intelligent Data Analysis, IDA 2009*, pages 381–392, Springer, Berlin, 2009.
- [283] E. Savia, A. Klami, and S. Kaski. Fast dependent components for fMRI analysis. In *Proceedings of ICASSP 09, the International Conference on Acoustics, Speech, and Signal Processing*, pages 1737–1740, IEEE, 2009.
- [284] E. Savia, K. Puolamäki, and S. Kaski. Two-way grouping by one-way topic models. In N. Adams, C. Robardet, A. Siebes, and J.-F. Boulicaut, editors, *Advances in Intelligent Data Analysis VIII, Proceedings of the 8th International Symposium on Intelligent Data Analysis, IDA 2009*, pages 178–189, Springer, Berlin, 2009.
- [285] A. Tripathi, A. Klami, and S. Kaski. Using dependencies to pair samples for multi-view learning. In *Proceedings of ICASSP 09, the International Conference on Acoustics, Speech, and Signal Processing*, pages 1561–1564, IEEE, 2009.
- [286] J. Caldas and S. Kaski. Bayesian biclustering with the plaid model. In José Príncipe, Deniz Erdogmus, and Tulay Adali, editors, *Proceedings of the IEEE International Workshop on Machine Learning for Signal Processing XVIII*, pages 291–296. IEEE, 2008.

- [287] A. Klami, C. Saunders, T. de Campos, and S. Kaski. Can relevance of images be inferred from eye movements? In *MIR '08: Proceeding of the 1st ACM International Conference on Multimedia Information Retrieval*, pages 134–140. ACM, New York, NY, 2008.
- [288] K. Puolamäki, A. Ajanki, and S. Kaski. Learning to learn implicit queries from gaze patterns. In A. McCallum and S. Roweis, editors, *Proceedings of ICML 2008, Twenty-Fifth International Conference on Machine Learning*, pages 760–767. Madison, WI, 2008.
- [289] J. Sinkkonen, J. Aukia, and S. Kaski. Infinite mixtures for multi-relational categorical data. In S. Kaski, S. V. N. Vishwanathan, and S. Wrobel, editors, *6th International Workshop on Mining and Learning with Graphs (MLG 2008)*. 2008. Proceedings at <http://www.cis.hut.fi/MLG08>.
- [290] K. Yamazaki and S. Kaski. An analysis of generalization error in relevant subtask learning. In M. Köppen, N. Kasabov, and G. Coghill, editors, *Advances in Neuro-Information Processing, 15th International Conference, ICONIP 2008*, pages 629–637, Springer-Verlag, Berlin Heidelberg, 2009.
- [291] A. Ajanki, J. Nikkilä, and S. Kaski. Discovering condition-dependent Bayesian networks for gene regulation. In *Proceedings of GENSIPS 2007, The Fifth IEEE International Workshop on Genomic Signal Processing and Statistics, Tuusula, Finland, 10-12 June. 2007*.
- [292] D. R. Hardoon, J. Shawe-Taylor, A. Ajanki, K. Puolamäki, and S. Kaski. Information retrieval by inferring implicit queries from eye movements. In M. Meila and X. Shen, editors, *Proceedings of AISTATS 2007, the 11th International Conference on International Conference on Artificial Intelligence and Statistics*. JMLR Workshop and Conference Proceedings, Volume 2: AISTATS 2007.
- [293] S. Kaski and J. Peltonen. Learning from relevant tasks only. In J. N. Kok, J. Koronacki, R. Lopez de Mantaras, S. Matwin, D. Mladenic, and A. Skowron, editors, *Machine Learning: ECML 2007 (Proceedings of the 18th European Conference on Machine Learning)*, pages 608–615. Springer-Verlag, Berlin, 2007.
- [294] A. Klami and S. Kaski. Local dependent components. In Z. Ghahramani, editor, *Proceedings of ICML 2007, the 24th International Conference on Machine Learning*, pages 425–432. Omnipress, 2007.
- [295] K. Nybo, J. Venna, and S. Kaski. The self-organizing map as a visual information retrieval method. In *Proceedings of WSOM'07, 6th International Workshop on Self-Organizing Maps*. Bielefeld University, Bielefeld, Germany, 2007.
- [296] J. Peltonen, J. Goldberger, and S. Kaski. Fast semi-supervised discriminative component analysis. In K. Diamantaras, T. Adali, I. Pitas, J. Larsen, T. Papadimitriou, and S. Douglas, editors, *Machine Learning for Signal Processing XVII*, pages 312–317. IEEE, 2007.
- [297] J. Sinkkonen, J. Aukia, and S. Kaski. Inferring vertex properties from topology in large networks. In *MLG'07, the 5th International Workshop on Mining and Learning with Graphs, Firenze, Aug 1-3, 2007. Distinguished Contribution Award*
- [298] J. Venna and S. Kaski. Nonlinear dimensionality reduction as information retrieval. In *Proceedings of AISTATS 2007, the 11th International Conference on International Conference on Artificial Intelligence and Statistics*. JMLR Workshop and Conference Proceedings, Volume 2: AISTATS 2007.
- [299] J. Ylipaavalniemi, E. Savia, R. Vigário, and S. Kaski. Functional elements and networks in fMRI. In *Proceedings of ESANN 2007, the 15th European Symposium on Artificial Neural Networks*, pages 561–566. d-side, Bruges, Belgium, 2007.
- [300] A. Klami and S. Kaski. Generative models that discover dependencies between data sets. In *Proceedings of MLSP'06, IEEE International Workshop on Machine Learning for Signal Processing*, pages 123–128. IEEE, 2006.

- [301] J. Nikkilä, A. Honkela, and S. Kaski. Exploring the independence of gene regulatory modules. In J. Rousu, S. Kaski, and E. Ukkonen, editors, *Probabilistic Modeling and Machine Learning in Structural and Systems Biology. Workshop Proceedings; Tuusula, Finland, June 17-18*, pages 131–136. University of Helsinki, Helsinki, Finland, 2006.
- [302] M. Oja, J. Peltonen, and S. Kaski. Estimation of human endogenous retrovirus activities from expressed sequence databases. In J. Rousu, S. Kaski, and E. Ukkonen, editors, *Probabilistic Modeling and Machine Learning in Structural and Systems Biology. Workshop Proceedings; Tuusula, Finland, June 17-18*, pages 50–54. University of Helsinki, Helsinki, Finland, 2006.
- [303] J. Salojärvi, K. Puolamäki, J. Simola, L. Kovanen, I. Kojo, and S. Kaski. Inferring relevance from eye movements: Feature extraction. In K. Puolamäki and S. Kaski, editors, *Proceedings of the NIPS 2005 Workshop on Machine Learning for Implicit Feedback and User Modeling*, pages 45–67. Helsinki University of Technology, Espoo, Finland, 2006.
- [304] U. Seiffert, B. Hammer, S. Kaski, and T. Villmann. Neural networks and machine learning in bioinformatics—theory and applications. In *Proceedings of ESANN’06, 14th European Symposium on Artificial Neural Networks*, pages 521–532. d-side, Evere, Belgium, 2006.
- [305] J. Venna and S. Kaski. Visualizing gene interaction graphs with local multidimensional scaling. In *Proceedings of ESANN’06, 14th European Symposium on Artificial Neural Networks*, pages 557–562. d-side, Evere, Belgium, 2006.
- [306] S. Kaski. From learning metrics towards dependency exploration. In *Proceedings of WSOM’05, 5th Workshop On Self-Organizing Maps*, pages 307–314. Paris, 2005.
- [307] S. Kaski, P. Myllymäki, and I. Kojo. User models from implicit feedback for proactive information retrieval. In Colin de la Higuera and Thierry Artières, editors, *Proceedings of Workshop 4 of the 10th International Conference on User Modeling; Machine Learning for User Modeling: Challenges*, pages 25–26. 2005.
- [308] A. Klami and S. Kaski. Non-parametric dependent components. In *Proceedings of ICASSP 2005, IEEE International Conference on Acoustics, Speech, and Signal Processing*, pages V–209–V–212. IEEE, 2005.
- [309] J. Nikkilä, C. Roos, and S. Kaski. Integration of transcription factor binding and gene expression by associative clustering. In C. Bonsaythip, J. Hollmén, S. Kaski, and M. Orešič, editors, *Proceedings of KRBIO05, Symposium on Knowledge Representation in Bioinformatics*, pages 22–29. Helsinki University of Technology, Espoo, Finland, 2005.
- [310] K. Puolamäki, E. Savia, J. Salojärvi, J. Simola, and S. Kaski. Combining eye movements and collaborative filtering for proactive information retrieval. In G. Marchionini, A. Moffat, J. Tait, R. Baeza-Yates, and N. Ziviani, editors, *Proceedings of SIGIR 2005, Twenty-Eighth Annual International ACM SIGIR Conference on Research and Development in Information Retrieval*, pages 146–153. ACM, New York, NY, 2005.
- [311] J. Salojärvi, K. Puolamäki, and S. Kaski. On discriminative joint density modeling. In J. Gama, R. Camacho, P. Brazdil, A. Jorge, and L. Torgo, editors, *Proceedings of ECML 2005, 16th European Conference on Machine Learning*, pages 341–352. Springer, Berlin, 2005.
- [312] J. Salojärvi, K. Puolamäki, and S. Kaski. Expectation maximization algorithms for conditional likelihoods. In L. De Raedt and S. Wrobel, editors, *Proceedings of ICML 2005, the 22nd International Conference on Machine Learning*, pages 753–760. ACM Press, New York, NY, 2005.
- [313] J. Salojärvi, K. Puolamäki, and S. Kaski. Implicit relevance feedback from eye movements. In W. Duch, J. Kacprzyk, E. Oja, and S. Zadrozny, editors, *Artificial Neural Networks: Biological Inspirations — ICANN 2005*, volume I, pages 513–518. Springer, Berlin, 2005.
- [314] E. Savia, K. Puolamäki, J. Sinkkonen, and S. Kaski. Two-way latent grouping model for user preference prediction. In F. Bachus and T. Jaakkola, editors, *Proceedings of UAI 2005, Uncertainty in Artificial Intelligence*, pages 518–525. AUAI Press, Corvallis, OH, 2005.

- [315] J. Venna and S. Kaski. Visualized atlas of a gene expression databank. In C. Bonsaythip, J. Hollmén, S. Kaski, and M. Orešič, editors, *Proceedings of KR BIO05, Symposium on Knowledge Representation in Bioinformatics*, pages 30–36. Helsinki University of Technology, Espoo, Finland, 2005.
- [316] J. Venna and S. Kaski. Local multidimensional scaling with controlled tradeoff between trustworthiness and continuity. In *Proceedings of WSOM'05, 5th Workshop On Self-Organizing Maps*, pages 695–702. Paris, 2005.
- [317] J. Nikkilä, C. Roos, and S. Kaski. Exploring dependencies between yeast stress genes and their regulators. In Z. R. Yang, R. Everson, and H. Yin, editors, *Proceedings of IDEAL04, Intelligent Data Engineering and Automated Learning*, pages 92–98. Springer-Verlag, Berlin, 2004.
- [318] M. Oja, G. Sperber, J. Blomberg, and S. Kaski. Grouping and visualizing human endogenous retroviruses by bootstrapping median self-organizing maps. In *Proceedings of CIBCB'04, IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology*, pages 95–101. IEEE, Piscataway, NJ, 2004.
- [319] J. Peltonen, J. Sinkkonen, and S. Kaski. Sequential information bottleneck for finite data. In R. Greiner and D. Schuurmans, editors, *Proceedings of ICML 2004, the Twenty-First International Conference on Machine Learning*, pages 647–654. Omnipress, Madison, WI, 2004.
- [320] J. Salojärvi, K. Puolamäki, and S. Kaski. Relevance feedback from eye movements for proactive information retrieval. In J. Heikkilä, M. Pietikäinen, and O. Silvén, editors, *Proceedings of PSIPS 2004, Workshop on Processing Sensory Information for Proactive Systems*, pages 37–42. Infotech Oulu, Oulu, Finland, 2004.
- [321] E. Savia, S. Kaski, V. Tuulos, and P. Myllymäki. On text-based estimation of document relevance. In *Proceedings of IJCNN'04, International Joint Conference on Neural Networks*, pages 3275–3280. IEEE, Piscataway, NJ, 2004.
- [322] J. Sinkkonen, J. Nikkilä, L. Lahti, and S. Kaski. Associative clustering. In J.-F. Boulicaut, F. Esposito, F. Giannotti, and D. Pedreschi, editors, *Machine Learning: ECML'04. Proceedings of the 15th European Conference on Machine Learning*, pages 396–405. Springer, Berlin, 2004.
- [323] S. Kaski. Discriminative clustering. In *Bulletin of the International Statistical Institute. Invited Paper Proceedings of the 54th Session*, volume 2, pages 270–273. International Statistical Institute, 2003.
- [324] S. Kaski and J. Peltonen. Informative discriminant analysis. In T. Fawcett and N. Mishra, editors, *Proceedings of ICML-2003, the Twentieth International Conference on Machine Learning*, pages 329–336. AAAI Press, Menlo Park, CA, 2003.
- [325] S. Kaski and J. Sinkkonen. Discriminative clustering: Vector quantization in learning metrics. In M. Schader, W. Gaul, and M. Vichi, editors, *Between Data Science and Applied Data Analysis*, pages 456–463. Springer, Berlin, 2003.
- [326] S. Kaski, J. Sinkkonen, and A. Klami. Regularized discriminative clustering. In C. Molina, T. Adali, J. Larsen, M. Van Hulle, S. Douglas, and J. Rouat, editors, *Neural Networks for Signal Processing XIII*, pages 289–298. IEEE, New York, NY, 2003.
- [327] M. Oja, P. Somervuo, S. Kaski, and T. Kohonen. Clustering of human endogenous retrovirus sequences with median self-organizing map. In *Proceedings of WSOM'03, Workshop on Self-Organizing Maps*, pages 134–139. Kyushu Institute of Technology, Kitakyushu, Japan, 2003. (Proceedings on CD-ROM).
- [328] J. Peltonen, A. Klami, and S. Kaski. Learning metrics for information visualization. In *Proceedings of WSOM'03, Workshop on Self-Organizing Maps*, pages 213–218. Kyushu Institute of Technology, Kitakyushu, Japan, 2003. (Proceedings on CD-ROM).
- [329] J. Salojärvi, S. Kaski, and J. Sinkkonen. Discriminative clustering in Fisher metrics. In O. Kaynak, E. Alpaydin, E. Oja, and L. Xu, editors, *Artificial Neural Networks and Neural Information Processing—Supplementary proceedings ICANN/ICONIP*, pages 161–164. 2003.

- [330] J. Salojärvi, I. Kojo, J. Simola, and S. Kaski. Can relevance be inferred from eye movements in information retrieval? In *Proceedings of WSOM'03, Workshop on Self-Organizing Maps*, pages 261–266. Kyushu Institute of Technology, Kitakyushu, Japan, 2003. (Proceedings on CD-ROM).
- [331] J. Venna and S. Kaski. Visualizing high-dimensional posterior distributions in Bayesian modeling. In *Artificial Neural Networks and Neural Information Processing—Supplementary proceedings ICANN/ICONIP*, pages 165–168. 2003.
- [332] J. Venna, S. Kaski, and J. Peltonen. Visualizations for assessing convergence and mixing of MCMC. In N. Lavrac, D. Gamberger, H. Blockeel, and L. Todorovski, editors, *Proceedings of ECML-2003, 14th European Conference on Machine Learning*, pages 432–443. Springer, Berlin, 2003.
- [333] J. Peltonen, A. Klami, and S. Kaski. Learning more accurate metrics for self-organizing maps. In J. R. Dorronsoro, editor, *Artificial Neural Networks—ICANN 2002*, pages 999–1004. Springer, Berlin, 2002.
- [334] J. Peltonen, J. Sinkkonen, and S. Kaski. Discriminative clustering of text documents. In L. Wang, J. C. Rajapakse, K. Fukushima, S.-Y. Lee, and X. Yao, editors, *Proceedings of ICONIP'02, 9th International Conference on Neural Information Processing*, pages 1956–1960. IEEE, Piscataway, NJ, 2002.
- [335] J. Sinkkonen, S. Kaski, and J. Nikkilä. Discriminative clustering: optimal contingency tables by learning metrics. In T. Elomaa, H. Mannila, and H. Toivonen, editors, *Machine Learning: ECML 2002*, pages 418–430. Springer, Berlin, 2002.
- [336] S. Kaski. Learning metrics for exploratory data analysis. In D. Miller, T. Adali, J. Larsen, M. Van Hulle, and S. Douglas, editors, *Neural Networks for Signal Processing XI, Proceedings of the 2001 IEEE Signal Processing Society Workshop*, pages 53–62. IEEE, New York, NY, 2001.
- [337] S. Kaski. SOM-based exploratory analysis of gene expression data. In N. Allinson, H. Yin, L. Allinson, and J. Slack, editors, *Advances in Self-Organizing Maps*, pages 124–131. Springer, London, 2001.
- [338] S. Kaski, J. Nikkilä, P. Törönen, E. Castrén, and G. Wong. Analysis and visualization of gene expression data using self-organizing maps. In *Proceedings of NSIP-01, IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing, 03.06.2001 - 06.06.2001, Baltimore, Maryland USA*. 2001. Proceedings on CD-ROM.
- [339] S. Kaski and J. Salojärvi. Generative mixture modeling by autonomous estimators. In N. Baba, L. C. Jain, and R. J. Howlett, editors, *Knowledge-Based Intelligent Information Engineering Systems & Allied Technologies, Proceedings of KES'2001*, volume 1, pages 250–254. IOS Press, Amsterdam, 2001.
- [340] S. Kaski and J. Sinkkonen. A topography-preserving latent variable model with learning metrics. In N. Allinson, H. Yin, L. Allinson, and J. Slack, editors, *Advances in Self-Organizing Maps*, pages 224–229. Springer, London, 2001.
- [341] S. Kaski, J. Sinkkonen, and J. Nikkilä. Clustering gene expression data by mutual information with gene function. In G. Dorffner, H. Bischof, and K. Hornik, editors, *Artificial Neural Networks—ICANN 2001*, pages 81–86. Springer, Berlin, 2001.
- [342] S. Kaski, J. Sinkkonen, and J. Peltonen. Data visualization and analysis with self-organizing maps in learning metrics. In Y. Kambayashi, W. Winiwarter, and M. Arikawa, editors, *Data Warehousing and Knowledge Discovery. Proceedings of the Third International Conference*, pages 162–173. Springer, Berlin, 2001. (LNCS 2114).
- [343] S. Kaski, J. Sinkkonen, and J. Peltonen. Learning metrics for self-organizing maps. In *Proceedings of IJCNN'01, International Joint Conference on Neural Networks*, pages 914–919. IEEE, Piscataway, NJ, 2001.
- [344] J. Venna and S. Kaski. Neighborhood preservation in nonlinear projection methods: An experimental study. In G. Dorffner, H. Bischof, and K. Hornik, editors, *Artificial Neural Networks—ICANN 2001*, pages 485–491. Springer, Berlin, 2001.

- [345] S. Kaski and J. Sinkkonen. Metrics that learn relevance. In *Proceedings of IJCNN-2000, International Joint Conference on Neural Networks*, volume V, pages 547–552. IEEE Service Center, Piscataway, NJ, 2000.
- [346] V. Ollikainen, C. Bäckström, and S. Kaski. Automatic content-based sequential ordering of newspaper articles for electronic books. In D. Tsaptsinos, editor, *Engineering Problems, Neural Network Solutions; Proceedings of EANN-2000, International Conference on Engineering Applications of Neural Networks*, pages 183–190. Neural Network Centre, Kingston University, Kingston Upon Thames, England, 2000.
- [347] J. Sinkkonen and S. Kaski. Clustering by similarity in an auxiliary space. In K. S. Leung, L.-W. Chan, and H. Meng, editors, *Proceedings of IDEAL 2000, Second International Conference on Intelligent Data Engineering and Automated Learning*, pages 3–8. Springer, Berlin, 2000.
- [348] S. Kaski. Fast winner search for SOM-based monitoring and retrieval of high-dimensional data. In *Proceedings of ICANN99, Ninth International Conference on Artificial Neural Networks*, volume 2, pages 940–945. IEE, London, 1999.
- [349] S. Kaski, J. Venna, and T. Kohonen. Coloring that reveals high-dimensional structures in data. In T. Gedeon, P. Wong, S. Halgamuge, N. Kasabov, D. Nauck, and K. Fukushima, editors, *Proceedings of ICONIP'99, 6th International Conference on Neural Information Processing*, volume II, pages 729–734. IEEE Service Center, Piscataway, NJ, 1999.
- [350] T. Kohonen, S. Kaski, K. Lagus, J. Salojärvi, J. Honkela, V. Paatero, and A. Saarela. Self organization of a massive text document collection. In E. Oja and S. Kaski, editors, *Kohonen Maps*, pages 171–182. Elsevier, Amsterdam, 1999.
- [351] K. Lagus and S. Kaski. Keyword selection method for characterizing text document maps. In *Proceedings of ICANN99, Ninth International Conference on Artificial Neural Networks*, volume 1, pages 371–376. IEE, London, 1999.
- [352] S. Kaski. Dimensionality reduction by random mapping: Fast similarity computation for clustering. In *Proceedings of IJCNN'98, International Joint Conference on Neural Networks*, volume 1, pages 413–418. IEEE Service Center, Piscataway, NJ, 1998.
- [353] S. Kaski, K. Lagus, T. Honkela, and T. Kohonen. Statistical aspects of the WEBSOM system in organizing document collections. *Computing Science and Statistics*, 29:281–290, 1998. (Scott, D. W., ed., Interface Foundation of North America, Inc.: Fairfax Station, VA)
- [354] S. Kaski, J. Nikkilä, and T. Kohonen. Methods for interpreting a self-organized map in data analysis. In M. Verleysen, editor, *Proceedings of ESANN'98, 6th European Symposium on Artificial Neural Networks*, pages 185–190. D-Facto, Brussels, Belgium, 1998.
- [355] T. Honkela, S. Kaski, K. Lagus, and T. Kohonen. WEBSOM—self-organizing maps of document collections. In *Proceedings of WSOM'97, Workshop on Self-Organizing Maps, Espoo, Finland, June 4-6*, pages 310–315. Helsinki University of Technology, Neural Networks Research Centre, Espoo, Finland, 1997.
- [356] T. Kohonen, S. Kaski, H. Lappalainen, and J. Salojärvi. The adaptive-subspace self-organizing map (ASSOM). In *Proceedings of WSOM'97, Workshop on Self-Organizing Maps, Espoo, Finland, June 4-6*, pages 191–196. Helsinki University of Technology, Neural Networks Research Centre, Espoo, Finland, 1997.
- [357] T. Honkela, S. Kaski, K. Lagus, and T. Kohonen. Exploration of full-text databases with self-organizing maps. In *Proceedings of ICNN'96, International Conference on Neural Networks*, volume I, pages 56–61. IEEE Service Center, Piscataway, NJ, 1996.
- [358] J. Kangas and S. Kaski. Compression of vector quantization code sequences based on code frequencies and spatial redundancies. In *Proceedings of ICIP'96, IEEE International Conference on Image Processing*, volume III, pages 463–466. IEEE Service Center, Piscataway, NJ, 1996.
- [359] S. Kaski, T. Honkela, K. Lagus, and T. Kohonen. Creating an order in digital libraries with self-organizing maps. In *Proceedings of WCNN'96, World Congress on Neural Networks*, pages 814–817. Lawrence Erlbaum and INNS Press, Mahwah, NJ, 1996.



- [360] S. Kaski and T. Kohonen. Exploratory data analysis by the self-organizing map: Structures of welfare and poverty in the world. In A.-P. N. Refenes, Y. Abu-Mostafa, J. Moody, and A. Weigend, editors, *Neural Networks in Financial Engineering. Proceedings of the Third International Conference on Neural Networks in the Capital Markets*, pages 498–507. World Scientific, Singapore, 1996.
- [361] S. Kaski and K. Lagus. Comparing self-organizing maps. In C. von der Malsburg, W. von Seelen, J. C. Vorbrüggen, and B. Sendhoff, editors, *Proceedings of ICANN96, International Conference on Artificial Neural Networks*, Lecture Notes in Computer Science, vol. 1112, pages 809–814. Springer, Berlin, 1996.
- [362] T. Kohonen, S. Kaski, K. Lagus, and T. Honkela. Very large two-level SOM for the browsing of newsgroups. In C. von der Malsburg, W. von Seelen, J. C. Vorbrüggen, and B. Sendhoff, editors, *Proceedings of ICANN96, International Conference on Artificial Neural Networks*, Lecture Notes in Computer Science, vol. 1112, pages 269–274. Springer, Berlin, 1996.
- [363] K. Lagus, T. Honkela, S. Kaski, and T. Kohonen. Self-organizing maps of document collections: A new approach to interactive exploration. In Evangelios Simoudis, Jiawei Han, and Usama Fayyad, editors, *Proceedings of the Second International Conference on Knowledge Discovery and Data Mining*, pages 238–243. AAAI Press, Menlo Park, California, 1996.
- [364] K. Lagus, S. Kaski, T. Honkela, and T. Kohonen. Browsing digital libraries with the aid of self-organizing maps. In *Proceedings of WWW5, Fifth International World Wide Web Conference*, volume Poster Proceedings, pages 71–79. EPGL, 1996.
- [365] S. Kaski and S.-L. Joutsiniemi. Monitoring EEG signal with the self-organizing map. In S. Gielen and B. Kappen, editors, *Proceedings of ICANN'93 International Conference on Artificial Neural Networks*, pages 974–977. Springer-Verlag, London, 1993.
- [366] P. Utela, S. Kaski, and K. Torkkola. Using phoneme group specific LVQ-codebooks with HMMs. In *Proceedings of ICSLP'92, International Conference on spoken language processing*, pages 551–554. Personal Publishing Ltd., Edmonton, 1992.
- [367] K. Torkkola, J. Kangas, P. Utela, S. Kaski, M. Kokkonen, M. Kurimo, and T. Kohonen. Status report of the Finnish phonetic typewriter project. In T. Kohonen, K. Mäkisara, O. Simula, and J. Kangas, editors, *Proceedings of ICANN'91, International Conference on Artificial Neural Networks*, pages 771–776. North-Holland, Amsterdam, 1991.

## B Not fully refereed scientific articles

- [368] T. Vuong, S. Andolina, G. Jacucci, P. Dae, K. Klouche, M. Sjöberg, T. Ruotsalo, and S. Kaski. EntityBot: Actionable entity recommendations for everyday digital task. In *CHI'22 Extended Abstracts*. ACM, 2022.
- [369] M. M. Çelikok, T. Peltola, P. Dae, and S. Kaski. Interactive AI with a theory of mind. arXiv Preprint, 2019. arXiv:1912.05284.
- [370] A. Kangasrääsio, Y. Chen, D. Glowacka, and S. Kaski. Dealing with concept drift in exploratory search: An interactive bayesian approach. In *IUI'16 Companion*, pages 62–66. ACM, 2016.
- [371] Z. Hussain, A. Klami, J. Kujala, A. P. Leung, K. Pasupa, P. Auer, S. Kaski, J. Laaksonen, J. Shawe-Taylor. PinView: Implicit Feedback in Content-Based Image Retrieval. arXiv:1410.0471 [cs.IR], 2014.
- [372] T. Ruotsalo, J. Peltonen, M.J.A. Eugster, D. Glowacka, A. Reijonen, G. Jacucci, P. Myllymäki, and S. Kaski. Intent radar: Search user interface that anticipates user's search intents. In *CHI '14 Extended Abstracts on Human Factors in Computing Systems*, CHI EA '14, pages 455–458, New York, NY, USA, 2014. ACM.
- [373] D. Glowacka, T. Ruotsalo, K. Konyushkova, K. Athukorala, S. Kaski, and G. Jacucci. SciNet: A system for browsing scientific literature through keyword manipulation. In *IUI'13 Companion, International Conference on Intelligent User Interfaces*, pages 61–62, New York, NY, 2013. ACM.

- [374] A. Faisal, R. Louhimo, L. Lahti, S. Hautaniemi, and S. Kaski. Biomarker discovery via dependency analysis of multi-view functional genomics data. In *NIPS 2011 workshop "From Statistical Genetics to Predictive Models in Personalized Medicine"*. Extended abstract.
- [375] R. Louhimo, V. Aittomäki, A. Faisal, M. Laakso, P. Chen, K. Ovaska, E. Valo, L. Lahti, V. Rogojin, S. Kaski, and S. Hautaniemi. Systematic use of computational methods allows stratifying treatment responders in glioblastoma multiforme. In *Proceedings of CAMDA 2011 conference, Critical Assessment of Massive Data Analysis*, 2011.
- [376] T. Suvitaival, I. Huopaniemi, M. Orešič, and S. Kaski. Detecting similar high-dimensional responses to experimental factors between human and model organism. In *NIPS 2011 workshop "From Statistical Genetics to Predictive Models in Personalized Medicine"*. Extended abstract.
- [377] A. Ajanki, M. Billinghamurst, M. Kandemir, S. Kaski, M. Koskela, M. Kurimo, J. Laaksonen, K. Puolamäki, and T. Tossavainen. Ubiquitous contextual information access with proactive retrieval and augmentation. In *The Fourth International Workshop on Ubiquitous Virtual Reality (IWUVR2010)*, 2010.
- [378] I. Huopaniemi, T. Suvitaival, J. Nikkilä, M. Orešič, and S. Kaski. Multi-way, multi-view learning. In *NIPS 2009 workshop on Learning from Multiple Sources with Applications to Robotics*, 2009. Extended Abstract.
- [379] K. Nybo, J. Parkkinen, and S. Kaski. Graph visualization with latent variable models. Technical Report TKK-ICS-R20, Helsinki University of Technology, Department of Information and Computer Science, Espoo, September 2009.
- [380] J. Parkkinen, J. Sinkkonen, A. Gyenge, and S. Kaski. A block model suitable for sparse graphs. In *Proceedings of the 7th International Workshop on Mining and Learning with Graphs (MLG 2009)*, Leuven, Belgium, July 2-4 2009. Extended Abstract.
- [381] E. Savia, K. Puolamäki, and S. Kaski. On two-way grouping by one-way topic models. Technical Report TKK-ICS-R15, Helsinki University of Technology, Department of Information and Computer Science, Espoo, May 2009.
- [382] J. Peltonen, Y. Yaslan, and S. Kaski. Variational Bayes learning from relevant tasks only. In *Learning from Multiple Sources Workshop, 13 December 2008, Whistler Canada*, 2008. Proceedings at <http://web.mac.com/davidrh/LMSworkshop08/Schedule.html>.
- [383] K. Puolamäki and S. Kaski. Bayesian solutions to the label switching problem. TKK Reports in Information and Computer Science TKK-ICS-R7, Helsinki University of Technology, Espoo, Finland, 2008.
- [384] T. Raiko, K. Puolamäki, J. Karhunen, J. Hollmén, A. Honkela, S. Kaski, H. Mannila, E. Oja, and O. Simula. Macadamia: Master's programme in machine learning and data mining. In *Teaching Machine Learning Workshop 2008, May 6-7, Sait-Étienne, France*. 2008. Papers at <http://labh-curien.univ-st-etienne.fr/informatique/tml08/programme.php>.
- [385] S. Rogers, J. Sinkkonen, A. Klami, M. Girolami, and S. Kaski. Two-level infinite mixture for multi-domain data. In *Learning from Multiple Sources Workshop, 13 December 2008, Whistler Canada*, 2008. Proceedings at <http://web.mac.com/davidrh/LMSworkshop08/Schedule.html>.
- [386] J. Sinkkonen, J. Parkkinen, J. Aukia, and S. Kaski. A simple infinite topic mixture for rich graphs and relational data. In *NIPS 2008 Workshop on Analyzing Graphs: Theory and Applications*, 2008.
- [387] K. Yamazaki and S. Kaski. On asymmetric generalization error of asymmetric multitask learning. In *Learning from Multiple Sources Workshop, 13 December 2008, Whistler Canada*, 2008. Proceedings at <http://web.mac.com/davidrh/LMSworkshop08/Schedule.html>.
- [388] J. Aukia, S. Kaski, and J. Sinkkonen. Inferring vertex properties from topology in large networks. In *NIPS'07 Workshop on Statistical Models of Networks*. 2007.
- [389] S. Kaski, J. Rousu, and E. Ukkonen. Probabilistic modeling and machine learning in structural and systems biology. *BMC Bioinformatics*, 8(Suppl 2):S1, 2007.

- [390] J. Parkkinen and S. Kaski. Searching for functional gene modules with interaction component models. In *The NIPS workshop on Machine Learning in Computational Biology, Whistler (B.C.) December 7-8, 2007*.
- [391] K. Puolamäki, J. Salojärvi, E. Savia, and S. Kaski. Discriminative MCMC. Publications in Computer and Information Science E1, Helsinki University of Technology, Espoo, Finland, 2006.
- [392] S. Kaski and J. Nikkilä. Dependency exploration in computational systems biology. In T. Manninen, M.-L. Linne, and O. Yli-Harja, editors, *Proceedings of The 3rd TICSP Workshop on Computational Systems Biology*, TICSP Series #29, pages 49–50. Tampere University of Technology, Tampere, Finland, 2005.
- [393] J. Sinkkonen, S. Kaski, J. Nikkilä, and L. Lahti. Associative clustering (AC): Technical details. Publications in Computer and Information Science A84, Helsinki University of Technology, Espoo, Finland, 2005.
- [394] K. Puolamäki, E. Savia, J. Sinkkonen, and S. Kaski. Two-way latent grouping model for user preference prediction. Publications in Computer and Information Science A80, Helsinki University of Technology, Espoo, Finland, 2004.
- [395] J. Nikkilä, C. Roos, J. Sinkkonen, and S. Kaski. Associative clustering to find dependencies between expression profiles and transcription factor binding. In C. Christophe, H.-P. Lenhof, and M.-F. Sagot, editors, *Proceedings of ECCB'2003, European Conference on Computational Biology*, pages 433–434. 2003.
- [396] J. Sinkkonen, J. Nikkilä, L. Lahti, and S. Kaski. Associative clustering by maximizing a Bayes factor. Publications in Computer and Information Science A68, Helsinki University of Technology, Espoo, Finland, June 2003.
- [397] J. Salojärvi, K. Puolamäki, and S. Kaski. Relevance feedback from eye movements for proactive information retrieval. Publications in Computer and Information Science A73, Helsinki University of Technology, Espoo, Finland, 2003.
- [398] A. Klami, J. Peltonen, and S. Kaski. Accurate self-organizing maps in learning metrics. In P. Ala-Siuru and S. Kaski, editors, *STeP 2002—Intelligence, the Art of Natural and Artificial. Proceedings of the 10th Finnish Artificial Intelligence Conference*, pages 41–49. Finnish Artificial Intelligence Society, Oulu, Finland, 2002.
- [399] M. Oja, J. Nikkilä, P. Törönen, E. Castrén, and S. Kaski. Learning metrics for visualizing gene functional similarities. In P. Ala-Siuru and S. Kaski, editors, *STeP 2002—Intelligence, the Art of Natural and Artificial. Proceedings of the 10th Finnish Artificial Intelligence Conference*, pages 31–40. Finnish Artificial Intelligence Society, Oulu, Finland, 2002.
- [400] S. Kaski. Convergence of a stochastic semisupervised clustering algorithm. Technical Report A62, Helsinki University of Technology, Publications in Computer and Information Science, Espoo, Finland, 2000.
- [401] J. Venna and S. Kaski. Coloring that reveals cluster structures in multidimensional data. In Heikki Hyötyniemi, editor, *Proceedings of STeP'00, Finnish Artificial Intelligence Conference. 'AI of Tomorrow': Symposium on Theory*, pages 203–210. Finnish Artificial Intelligence Society, Helsinki, Finland, 2000.
- [402] T. Honkela, S. Kaski, K. Lagus, and T. Kohonen. Newsgroup exploration with WEBSOM method and browsing interface. Technical Report A32, Helsinki University of Technology, Laboratory of Computer and Information Science, Espoo, Finland, 1996.
- [403] K. Lagus, T. Honkela, S. Kaski, and T. Kohonen. WEBSOM – a status report. In J. Alander, T. Honkela, and M. Jakobsson, editors, *Proceedings of STeP'96, Finnish Artificial Intelligence Conference*, pages 73–78. Finnish Artificial Intelligence Society, Vaasa, Finland, 1996.
- [404] S. Kaski and T. Kohonen. Structures of welfare and poverty in the world discovered by the self-organizing map. Technical Report A24, Helsinki University of Technology, Laboratory of Computer and Information Science, Espoo, Finland, 1995.

- [405] J. Iivarinen, T. Kohonen, J. Kangas, and S. Kaski. Visualizing the clusters on the self-organizing map. In *Proceedings of the Conference on Artificial Intelligence Research in Finland*, number 12 in Publications of the Finnish Artificial Intelligence Society, pages 122–126. Finnish Artificial Intelligence Society, Helsinki, Finland, 1994.
- [406] P. Utela, K. Torkkola, L. Leinonen, J. Kangas, S. Kaski, and T. Kohonen. Speech recognition and analysis. In *Proceedings of SteP'92, Fifth Finnish Artificial Intelligence Conference: New Directions in Artificial Intelligence, Espoo, Finland, June 9-11*, volume 2, pages 178–182, Finnish Artificial Intelligence Society, 1992.

### C Scientific books and special issues

- [407] E. Bingham, S. Kaski, J. Laaksonen and J. Lampinen, editors. *Advances in Independent Component Analysis and Learning Machines*, 2015. Academic Press, London.
- [408] S. Kaski and J. Corander, editors. *Proceedings of the Seventeenth International Conference on Artificial Intelligence and Statistics*, volume 33 of *JMLR W&CP*. JMLR, 2014.
- [409] J. Peltonen, T. Raiko, and S. Kaski, editors. *Neurocomputing, Special Issue on Machine Learning for Signal Processing 2010, 80:1-128*, 2012.
- [410] T. Honkela, W. Duch, M. Girolami, and S. Kaski, editors. *Artificial Neural Networks and Machine Learning Research - ICANN 2011*, Berlin, 2011. Springer.
- [411] S.V.N. Vishwanathan, S. Kaski, J. Neville, and S. Wrobel, editors. *Machine Learning, Special Issue on Learning and Mining with Graphs, 82(2)*, 2011.
- [412] S. Kaski, D. J. Miller, E. Oja, and A. Honkela, editors. *Proceedings of the 2010 IEEE International Workshop on Machine Learning for Signal Processing (MLSP 2010)*. IEEE, Piscataway, NJ, 2010.
- [413] S. Kaski, J. Rousu, and E. Ukkonen, editors. *BMC Bioinformatics, Special Issue on Probabilistic Modeling and Machine Learning in Structural and Systems Biology, 8(Suppl 2)*, 2007.
- [414] K. Puolamäki and S. Kaski, editors. *Proceedings of the NIPS 2005 Workshop on Machine Learning for Implicit Feedback and User Modeling*. Helsinki University of Technology, Espoo, Finland, 2006.
- [415] J. Rousu, S. Kaski, and E. Ukkonen, editors. *Probabilistic Modeling and Machine Learning in Structural and Systems Biology. Workshop Proceedings; Tuusula, Finland, June 17-18*. University of Helsinki, Helsinki, Finland, 2006.
- [416] C. Bonsaythip, J. Hollmén, S. Kaski, and M. Orešič, editors. *Proceedings of KRBIO05, Symposium on Knowledge Representation in Bioinformatics*. Helsinki University of Technology, Espoo, Finland, 2005.
- [417] P. Ala-Siuru and S. Kaski, editors. *STeP 2002—Intelligence, the Art of Natural and Artificial. Proceedings of the 10th Finnish Artificial Intelligence Conference*. Finnish Artificial Intelligence Society, Oulu, Finland, 2002.
- [418] E. Oja and S. Kaski, editors. *Kohonen Maps*. Elsevier, Amsterdam, 1999.

### D Publications intended for professional communities

- [419] S. Kaski, H. Ailisto, and A. Suominen. International AI experts: Towards the third wave of artificial intelligence. In *Leading the way into the era of artificial intelligence. Final report of Finland's Artificial Intelligence Programme*, number 41, pages 28–42. Ministry of Economic Affairs and Employment, 2019.

- [420] C.-A. Azencott, T. Aittokallio, S. Roy, DREAM Idea Challenge Consortium, T. Norman, S. Friend, G. Stolovitzky, and A. Goldenberg. The inconvenience of data of convenience: computational research beyond post-mortem analyses. *Nature Methods*, 14:937–938, 2017. (Included in the DREAM Idea Challenge Consortium).
- [421] S. Kaski. Suklaan riittävydestä. *eStatisti*, 2.7.2015.
- [422] S. Kaski. Ydintehtävät kunniaan. *Polysteekki*, (3):19, 2006.
- [423] S. Kaski and J. Nikkilä. Of mice and men and yeast, and dependency exploration. *CSCnews, Information Technology for Science in Finland*, (4):24–26, 2005.
- [424] S. Kaski. Bubbly bioinformatics. In *From Genes to Ethics. Research for a New Millennium. Final Report of the Life 2000 Research Programme*, Publications of the Academy of Finland 5/04, pages 48–51. Academy of Finland, Helsinki, Finland, 2004.
- [425] J. Iivarinen, S. Kaski, and E. Oja, editors. *Neljännesvuosisata Hatutusta: Hahmontunnistustutkimus Suomessa 1977–2002*. Suomen hahmontunnistustutkimuksen seura ry, Otaniemi, 2002.
- [426] S. Kaski. Kohti uutta luovan ajattelun opettamista. In I. Hein and R. Lauhia, editors, *OPE<sup>2</sup>, Dokumentoitua opetuksen kehittämistä Teknillisessä korkeakoulussa 1999–2000*, pages 9–14. Teknillinen korkeakoulu, Opetuksen ja opiskelun tuen julkaisuja 3/2000, Helsinki, Finland, 2000.

## E Publications intended for the general public

- [427] S. Kaski. Putting the human back into the algorithm. *The University of Manchester Magazine*, 2022.
- [428] S. Kaski. Tekoäly pelastaa maailman? *MustRead*, 2022.
- [429] E. Oja, S. Kaski, and J. Kohonen. Teuvo Kohonen 1934–2021. *Helsingin Sanomat*, 2022. Muistokirjoitus.
- [430] S. Kaski. Suomen talous näivetty ilman uteliaisuustutkimusta. *Helsingin Sanomat*, 2021. Vieraskynä.

## G Theses

- [431] S. Kaski. Data exploration using self-organizing maps. *Acta Polytechnica Scandinavica, Mathematics, Computing and Management in Engineering Series No. 82*, March 1997. D.Sc. (PhD) Thesis, Helsinki University of Technology, Finland.
- [432] S. Kaski. Hermoverkkomalleissa tapahtuvaan kilpailuoppimiseen liittyvät mekanismit (Mechanisms connected with competitive learning in neural network models). Master’s Thesis (Computer Science), Helsinki University of Technology, 1993.
- [433] S. Kaski. Viivemukautuvat topografiset komponentit: Tuntoärsykkeisiin liittyvät aivojen jännitevasteet uudella menetelmällä analysoituina (Latency-adjusting topographic components: Evoked potentials related to tactile stimulation analysed with a novel method). Master’s Thesis (Psychology), University of Helsinki, 1992.

## H Patents

- [434] J. Gillberg, S. Kaski, P. Marttinen, and H. Mamitsuka, “Method and system for selecting a plant variety,” US Patent 11,533,862, 2022.

- [435] T. Ruotsalo, J. Peltonen, M. Eugster, P. Myllymäki, G. Jacucci, S. Kaski, and D. Glowacka, "Low-dimensional information discovery and presentation system, apparatus and method," US Patent 9,798,780, 2017.
- [436] R. Grafström, S. Kaski, P. Kohonen, and J. Parkkinen, "In vitro toxicogenomics for toxicity prediction using probabilistic component modeling and a compound-induced transcriptional response pattern," US Patent 10,665,323, 2020.