

List of publications in chronological order

[Mykola Pechenizkiy](#) (last update: January 25, 2009)

[2002](#) [2003](#) [2004](#) [2005](#) [2006](#) [2007](#) [2008](#) [2009](#) [Under submission](#)

2002

1. Tsymbal A., Puuronen S., Pechenizkiy M., Baumgarten M., Patterson D. 2002. Eigenvector-based Feature Extraction for Classification. In: *S.M. Haller, G. Simmons (Eds.), Proc. 15th Int. FLAIRS Conference on Artificial Intelligence*, AAAI Press, pp. 354-358.
2. Puuronen S., Patterson D., Tsymbal A., Pechenizkiy M. 2002. Dimensionality Reduction for Classification Tasks Modelling. In *Proc. 43rd Scandinavian Conference on Simulation and Modelling, SIMS'02*, Oulu, Finland, Finnish Society of Automation, pp. 35-44.

2003

3. Pechenizkiy M., Puuronen S., Tsymbal A. 2003. Feature extraction for classification in knowledge discovery systems, In: V.Palade, R.J.Howlett, L.C.Jain (Eds.), *Proc. 7th International Conference on Knowledge-Based Intelligent Information & Engineering Systems KES'2003*, LNAI, Vol.2773, Heidelberg: Springer-Verlag, pp. 526-532.
4. Pechenizkiy M., Puuronen S., Tsymbal A. 2003. Feature Extraction for Classification in the Data Mining Process: In: Gladun V.P., Markov K. (Eds.) *Proc. X-th International Conference Knowledge-Dialogue-Solution, KDS'03*, FOI-Commerce, pp. 321-329 and (revised) In: *International Journal on Information Theories and Applications* 10(1), 271-278.
5. Tsymbal A., Cunningham P., Pechenizkiy M., Puuronen S., 2003. Search strategies for ensemble feature selection in medical diagnostics, In: *M. Krol, S. Mitra, D.J. Lee (Eds.), Proc. 16th IEEE Int. Symposium on Computer-Based Medical Systems CBMS'03*, IEEE CS Press, pp. 124-129.
6. Tsymbal A., Pechenizkiy M., Puuronen S., Patterson D.W., 2003. Dynamic integration of classifiers in the space of principal components, In: *L.Kalinichenko, R.Manthey, B.Thalheim, U.Wloka (Eds.), Proc. Advances in Databases and Information Systems: 7th East-European Conference ADBIS'03*, LNCS, Vol. 2798, Springer-Verlag, pp. 278-292.

2004

7. Tsymbal A., Pechenizkiy M. and Cunningham P. 2004. Diversity in random subsampling ensembles. In: *Y. Kambayashi, M. Mohania, W. Wöß (Eds.) Proc. of 6th Int. Conference on Data Warehousing and Knowledge Discovery DaWaK'04*, LNCS, Vol.3181, Heidelberg, Springer Verlag, pp. 309-319.
8. Pechenizkiy M., Tsymbal A., Puuronen S. 2004. PCA-based feature transformation for classification: issues in medical diagnostics, In: *R. Long et al. (Eds.), Proc. 17th IEEE Int. Symposium on Computer-Based Medical Systems CBMS'04*, Bethesda, MD, IEEE CS Press, pp. 535-540.
9. Pechenizkiy M., Puuronen S., Tsymbal A. 2004. The iterative and interactive data mining process: the information systems development and knowledge management perspectives, In *4th Int. IEEE ICDM'04*, T.Y. Lin, S. Smale, T. Poggio, C.J. Liau (Eds.) *Workshop Proc. Foundations of Data Mining*, pp. 129-136.
10. Pechenizkiy M. 2004. *Feature Extraction for Classification: Issues of Intelligent Integration*. Licentiate Thesis, Jyväskylä University Printing House, Jyväskylä, Finland.

11. Pechenizkiy M., Tsymbal A., Puuronen S. 2004. Meta-Knowledge Management in Multistrategy Process-Oriented Knowledge Discovery Systems. In: O.Vasilekas, et al. (Eds.) *Proc. of 13th International Conference on Information Systems Development. Advances in Theory, Practice and Education ISD'04* Vilnius: Technika, pp. 317-328.

2005

12. Tsymbal A., Pechenizkiy M., Cunningham P. 2005. [Diversity in Search Strategies for Ensemble Feature Selection](#), *Information Fusion* 6(1), Special Issue "Diversity in Multiple Classifier Systems", Elsevier Science, 83-98.
13. Pechenizkiy M. 2005 [Data mining strategy selection via empirical and constructive induction](#). In: M.H. Hamza (Ed.) *Proc. of the IASTED Int. Conference Databases and Applications DBA'05*, ACTA Press, pp. 59-64.
14. Pechenizkiy M., Puuronen S., Tsymbal A. 2005. On the Use of Information Systems Research Methods in Data Mining. In: O.Vasilekas et al. (Eds.) *Proc. of 13th International Conference on Information Systems Development: Advances in Theory, Practice and Education ISD'04*, Springer, pp. 487-499.
15. Pechenizkiy M., Tsymbal A., Puuronen S., Shifrin M., Alexandrova I. 2005. [Knowledge Discovery from Microbiology Data: Many-sided Analysis of Antibiotic Resistance in Nosocomial Infections](#). In: K.D. Althoff et al. (Eds) *Post-Conference Proc. of 3rd Conference on Professional Knowledge Management: Experiences and Visions*, LNAI 3782, Springer Verlag, pp. 360-372.
16. Pechenizkiy M., Tsymbal A., Puuronen S. 2005. Local Dimensionality Reduction within Natural Clusters for Medical Data Analysis, In: P.Cunningham, A.Tsymbal (Eds.), *Proc. 18th IEEE Int. Symposium on Computer-Based Medical Systems CBMS'05*, IEEE CS Press, pp. 365-370.
17. Vasilyeva E., Pechenizkiy M., Puuronen S. 2005. Towards the Framework of Adaptive User Interfaces for eHealth, In: P.Cunningham, A.Tsymbal (Eds.), *Proc. 18th IEEE Int. Symposium on Computer-Based Medical Systems CBMS'05*, IEEE CS Press, pp. 139-144.
18. Pechenizkiy M. 2005. [Impact of the Feature Extraction on the Performance of a Classifier: kNN, Naïve Bayes and C4.5](#). In: B.Kegl, G.Lapalme (Eds.): *Proc. of 18th CSCSI Conference on Artificial Intelligence AI'05*, LNAI 3501, Springer Verlag, pp. 268-279.
19. Vasilyeva E., Pechenizkiy M., Puuronen S. 2005. Knowledge Management Challenges in Web-Based Adaptive e-Learning Systems. In: *Proc of 5th Int. Conference on Knowledge Management I-KNOW '05*, J.UCS with Springer, pp. 112-119.
20. Tsymbal A., Pechenizkiy M., Cunningham P. 2005. [Sequential Genetic Search for Ensemble Feature Selection](#), In: *Proc. 19th International Joint Conference on Artificial Intelligence, IJCAI'05*, pp. 877-882.
21. Pechenizkiy M., Tsymbal A., Puuronen S. 2005. On Combining Principal Components with Parametric LDA-based Feature Extraction for Supervised Learning. In: T.Morzy et al. (Eds.), *Proc. of 1st Int. Workshop on Data Mining and Knowledge Discovery, ADMKD'05*, Tallinn, Estonia, pp. 47-56.
22. Pechenizkiy M., Puuronen S., Tsymbal A. 2005. [Why Data Mining Does Not Contribute to Business?](#) In: C.Soaes et al. (Eds.), *Proc. of Data Mining for Business Workshop, DMBiz (ECML/PKDD'05)*, Porto, Portugal, pp. 67-71.
23. Pechenizkiy M., Tsymbal A., Puuronen S. 2005. [Knowledge Management Challenges in Knowledge Discovery Systems](#). In: *IEEE Workshop Proc. of DEXA'05, 6th Int. Workshop on Theory and Applications of Knowledge Management TAKMA'05*, IEEE CS Press, pp. 433-437.
24. Pechenizkiy M., Puuronen S., Tsymbal A. 2005. Competitive advantage from Data Mining: Lessons learnt in the Information Systems field. In: *IEEE Workshop Proc. of DEXA'05, 1st Int. Workshop on*

Philosophies and Methodologies for Knowledge Discovery PMKD'05, IEEE CS Press, pp. 733-737 (Invited paper).

25. Pechenizkiy M. 2005. [*Feature Extraction for Supervised Learning in Knowledge Discovery Systems*](#). PhD thesis, Jyväskylä University Printing House, Jyväskylä, Finland.
26. Vasilyeva E., Puuronen S., Pechenizkiy M. 2005. Feedback Adaptation in Web-based Applications. In *Proc. of Int. Workshop on Combining Intelligent and Adaptive Hypermedia Methods/Techniques in Web-Based Education Systems (CIAH'05)*, pp. 85-90, as part of 16th ACM Int. Conference on Hypertext and Hypermedia.

2006

27. Pechenizkiy M., Tsymbal A., Puuronen S. 2006. [*Supervised Learning and Local Dimensionality Reduction within Natural Clusters: Biomedical Data Analysis*](#), *IEEE Transactions on Information Technology in Biomedicine* 10(3), Special Post-conference Issue "Mining Biomedical Data" (as extended version of CBMS'05), pp. 533- 539.
28. Pechenizkiy M., Tsymbal A., Puuronen S. 2006. [*On Combining Principal Components with Parametric LDA-based Feature Extraction for Supervised Learning*](#). *Foundations of Computing and Decision Sciences* 31(1), Special Issue "Data Mining and Knowledge Discovery" (as extended version of ADMKD'05), pp. 59-73.
29. Pechenizkiy M., Puuronen S., Tsymbal A. 2006. [*The Impact of Sample Reduction on PCA-based Feature Extraction for Supervised Learning*](#). In: *Proc. of the 21st ACM Symposium on Applied Computing (ACM SAC'06 Data Mining Track)*, ACM Press, pp. 553-558.
30. Pechenizkiy, Tsymbal A., Puuronen S., Pechenizkiy O. 2006. [*Class Noise and Supervised Learning in Medical Domains: The Effect of Feature Extraction*](#). In: *Proc. of 19th IEEE Int. Symposium on Computer-Based Medical Systems CBMS'06*, IEEE CS Press, pp. 708-713.
31. Tsymbal A., Pechenizkiy M., Cunningham P., Puuronen S. 2006. Handling Local Concept Drift with Dynamic Integration of Classifiers: Domain of Antibiotic Resistance in Nosocomial Infections. In: *Proc. of 19th IEEE Int. Symposium on Computer-Based Medical Systems CBMS'06*, IEEE CS Press, pp. 679-684.
32. Vasilyeva, E., Pechenizkiy M., Puuronen S. 2006. The Challenge of Feedback Personalization to Learning Styles in WBLs. *Workshop on Adaptive Web-Based Education and Learning Styles* and the short version in *IEEE ICALT'06*, IEEE CS Press , pp. 1143-1144.
33. Rennolls K., Delisle S., Pechenizkiy M. 2006. 2nd International Workshop on Philosophies and Methodologies for Knowledge Discovery, Deployment, and Development of Decision Support Systems (PMKD'06) [*Preface*](#), IEEE CS Press, pp. 577-578.
34. Puuronen S., Pechenizkiy M., Tsymbal A. 2006. Data Mining Researcher, Who is Your Customer? Some Issues Inspired by Information Systems Field. In: *IEEE Workshop Proc. of DEXA'06, 2nd Int. Workshop on Philosophies and Methodologies for Knowledge Discovery PMKD'06*, IEEE CS Press, pp. 579-583 (Keynote paper).
35. Tsymbal A., Pechenizkiy M., Cunningham P. 2006. [*Dynamic Integration with Random Forest*](#). In: *Fürnkranz et al (Eds.) Proc. of 17th European Conf. on Machine Learning (ECML/PKDD'06)*, LNCS, Vol. 4212, Heidelberg, Springer Verlag, pp. 801 - 808. (Extended version is available [here](#))
36. Tsymbal A., Pechenizkiy M., Cunningham P. 2006. Dynamic integration with random forests. *Tech Report TCD-CS-2006-23*, Dept of Computer Science, Trinity College Dublin, Ireland (available online [here](#))

37. Pechenizkiy M., Tourunen A., Kärkkäinen T., Ivannikov A., Nevalainen H. 2006. [Towards Better Understanding of Circulating Fluidized Bed Boilers: a Data Mining Approach](#). In: *Proc. of 2nd Workshop on Practical Data Mining: Applications, Experiences and Challenges DMBiz'06 (ECML/PKDD'06)*, Berlin, Germany, pp. 80-83.

2007

38. Pechenizkiy M., Tsymbal A., Puuronen S., Patterson D.W. 2007. Feature extraction for dynamic integration of classifiers. *Fundamenta Informaticae* 77(3), IOS Press, pp. 243-275. (The prepublished version of this paper is available on e-mail request.)
39. Vasilyeva E., Puuronen S., Pechenizkiy M., Räsänen P. 2007. [Feedback adaptation in web-based learning systems](#). *Special Issue of International Journal of Continuing Engineering Education and Life-Long Learning (IJCEELL)*, 17(4-5), pp. 337-357.
40. Pechenizkiy M., Calders T. 2007. [A Framework for Guiding the Museum Tour Personalization](#). In: L.M. Aroyo, T. Kuflik, O. Stock, M. Zancanaro (Eds.), *Proc. of Int. Workshop on Personalized Access to Cultural Heritage (PATCH'07/UM'07)*, Corfu, Greece, June 26, 2007). Athens (Greece): IIT, NCSR Demokritos, pp. 11-28.
41. Vasilyeva E., Pechenizkiy M., De Bra P. 2007. [Adaptation of Feedback in e-learning System at Individual and Group Level](#), In: *Proc. of PING 2007 Int. Workshop on Personalization in E-Learning Environments at Individual and Group Level (UM 2007)*.
42. Vasilyeva E., Pechenizkiy M., Gavrilova T., Puuronen S. 2007. Personalization of Immediate Feedback to Learning Styles, In: *Proc. of 7th IEEE Int. Conf. on Advanced Learning Technologies. (ICALT 2007)*, IEEE CS Press, pp. 622-624.
43. Beck J.E., Calders T., Pechenizkiy M., Viola S.R. 2007. [Workshop on Educational Data Mining @ ICALT'07 \(EDM@ICALT07\)](#), In: *Proc. of 7th IEEE Int. Conf. on Advanced Learning Technologies. (ICALT 2007)*, IEEE CS Press.
44. Romero C., Pechenizkiy M., Calders T., Viola S.R. 2007. (Eds.) *Workshop on Applying Data Mining in e-Learning (EC-TEL'07)*. Online version is available from <http://CEUR-WS.org/Vol-305/>
45. Mertik M., Pechenizkiy M., Štiglic G., Kokol P. Using Cellular Automata for Feature Construction – Preliminary Study, In: *Proc. of IEEE Int. Conf. on Digital Ecosystems and Technologies (DEST 2007)*, IEEE CS Press, pp. 479-484.

2008

46. Tsymbal A., Pechenizkiy M., Cunningham P., Puuronen S. 2008. [Dynamic Integration of Classifiers for Handling Concept Drift](#). *Information Fusion* 9(1), *Special Issue on “Applications of Ensemble Methods”*, Elsevier Science, pp. 56-68 (The prepublished version of this paper is available [here](#).)
47. Pechenizkiy M., Puuronen S., Tsymbal A. 2008. [Towards More Relevance-Oriented Data Mining Research](#), *Intelligent Data Analysis* 12, IOS Press, 1-13.
48. Pechenizkiy M., Puuronen S., Tsymbal A. 2008. Does the relevance of data mining research matter? In: T.Y. Lin et al (Eds.) *Data Mining: Foundations and Practice*, Studies in Computational Intelligence 118, Berlin Heidelberg, Springer, pp. 251-275. (The prepublished version of this paper is available [here](#).)
49. Vasilyeva E., De Bra P., Pechenizkiy M., Puuronen, S. 2008. [Tailoring feedback in online assessment: influence of learning styles on the feedback preferences and elaborated feedback effectiveness](#). In:

50. Vasilyeva E., Pechenizkiy M., De Bra P. 2008. [Tailoring of feedback in web-based learning: the role of response certitude in the assessment](#). (poster) In: *B. Woolf et al. (Eds.): Proc. of Int. Conf. Intelligent Tutoring Systems (ITS'08)*, LNCS 5091, Heidelberg, Springer Verlag, pp. 771-773.
51. Vasilyeva E., Pechenizkiy M., De Bra P. 2008. [Adaptation of Elaborated Feedback in e-Learning](#), In: *W. Nejdl et al. (Eds.): Proc. of 5th Int. Conf. on Adaptive Hypermedia and Adaptive Web-Based Systems (AH'2008)*, LNCS 5149, Berlin Heidelberg, Springer Verlag, pp. 235-244.
52. Puuronen S., Pechenizkiy M., Tsymbal A., Lee D.J. (Eds.) *Proc. of 21st IEEE International Symposium on Computer-Based Medical Systems*, Los Alamitos, CA, USA, IEEE CS Press, 2008.
53. Puuronen S., Pechenizkiy M., Tsymbal A. 2008. [Effectiveness of Local Feature Selection in Ensemble Learning for Prediction of Antimicrobial Resistance](#). In: *Proc. of 21st IEEE Int. Conf. on Computer-Based Medical Systems (CBMS'08)*, IEEE CS Press, pp. 632-637.
54. De Bra P., Pechenizkiy M., van der Sluijs K., Smits D. 2008. GRAPPLE: Integrating Adaptive Learning into Learning Management Systems. (poster) In: *Proc. of Int. Conf. on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA'08)*, AACE Press.
55. Pechenizkiy M., Calders T., De Bra P., Vasilyeva E. 2008. [Mining the Student Assessment Data: Lessons Drawn from a Small Scale Case Study](#). (poster) In: *Proc. of 1st Int. Conf. on Educational Data Mining*, pp. 187-191.
56. Hendrix M., De Bra P., Pechenizkiy M., Smits D., Cristea A. 2008. [Defining adaptation in a generic multi layer model: CAM: The GRAPPLE Conceptual Adaptation Model](#). In: *P. Dillenbourg and M. Specht (Eds.): Proc. of 3rd European Conf. on Technology Enhanced Learning (EC-TEL 2008)*, LNCS 5192, Berlin Heidelberg, Springer Verlag, pp. 132-143.
57. Vasilyeva E., Pechenizkiy M., De Bra P. 2008. [Immediate Elaborated Feedback Personalization in Online Assessment](#). In: *P. Dillenbourg and M. Specht (Eds.): Proc. of 3rd European Conf. on Technology Enhanced Learning (EC-TEL 2008)*, LNCS 5192, Berlin Heidelberg, Springer Verlag, pp. 449-460.
58. Vasilyeva E., De Bra P., Pechenizkiy M. 2008. Tailoring of Feedback in Online Assessment: Lessons Learnt. In: *Bonk C.J. et al. (Eds.) Proc. of Int. Conf. on E-Learning in Corporate, Government, Healthcare, & Higher Education (E-Learn 2008)*, AACE Press, pp. 518-526.
59. Vasilyeva E., De Bra P., Pechenizkiy M. 2008. Feedback Authoring Possibilities in Web-based Learning Systems. In: *Bonk C.J. et al. (Eds.) Proc. of Int. Conf. on E-Learning in Corporate, Government, Healthcare, & Higher Education (E-Learn 2008)*, AACE Press.
60. De Bra P., Smits D., Pechenizkiy M., Vasilyeva E. 2008. Adaptivity in GRAPPLE: Adaptation in Any Way You Like. (poster) In: *Bonk C.J. et al. (Eds.) Proc. of Int. Conf. on E-Learning in Corporate, Government, Healthcare, & Higher Education (E-Learn 2008)*, AACE Press.
61. Meulstee P., Pechenizkiy M. 2008. Food Sales Prediction: "If Only It Knew What We Know". (to appear) In: *Proc. of 2nd International Workshop on Domain Driven Data Mining DDDM'08* (in conjunction with IEEE ICDM'08), IEEE Press.
62. Bridewell W., Calders T., Medeiros A.K., Kramer S., Pechenizkiy M., Todorovski L. (Eds.), [Proc. of Int. Workshop on Induction of Process Models](#) (IPM'08 at ECML/PKDD 2008), Antwerp, Belgium, September 15, 2008.

2009

63. Calders T., Günther C., Pechenizkiy M., Rozinat A. 2009. [Using the Minimum Description Length](#)

[Principle to Evaluate Process Models](#). (to appear) In: *Proc. of the 21st ACM Symposium on Applied Computing (ACM SAC'09 Data Mining Track)*, ACM Press, pp. 603-608.

64. Knutov E., De Bra P., Pechenizkiy M. 2008. AH 12 Years Later: a Comprehensive Survey of Adaptive Hypermedia Methods and Techniques, (to appear) *New Review of Hypermedia and Multimedia*.

Manuscripts under review:

65. Puuronen S., Pechenizkiy M. 2009. Towards the Generic Framework for Utility Considerations in Data Mining Research, book chapter.
66. Vasilyeva E., De Bra P., Pechenizkiy M. 2009. Adaptive Elaborated Feedback in Online Assessment, (submitted to) *IEEE Transactions on Learning Technologies*.
67. Vasilyeva E., De Bra P., Pechenizkiy M. 2009. Strict Order vs. Flexible Order Navigation in Online Testing (submitted to) *1st Int. Conf. on User Modeling, Adaptation and Personalization (UMAP09)*.