Publications
Alexander Gammerman

Selected Publications

Books

1. A. Gammerman, (ed.) Probabilistic Reasoning and Bayesian Belief Networks. Alfred Waller, Henley-on-Thames, 1995.

2. A. Gammerman, (ed.) Computational Learning and Probabilistic Reasoning. John Wiley & Sons, Chichester, 1996.

3. A. Gammerman. Machine Learning: Progress and Prospects. ISBN 0 900145 93 5, 1997.

4. A. Gammerman, (ed.) Causal Models and Intelligent Data Management. Springer-Verlag, 1999.

5. V.Vovk, A.Gammerman and G.Shafer. Algorithmic learning in a random world. New York: Springer, 2005.

6. A.Gammerman, (ed.) Artificial Intelligence and Applications, Proceedings of the Conference, ACTA Press, ISBN: 978-0-88986-709-3, 2008.

7. Gammerman, A., Vovk, V. & Papadopoulos, H. (eds.). Statistical Learning and Data Sciences: Third International Symposium, SLDS 2015, UK, April 20-23, 2015, Springer LNAI, Proceedings, Vol. 9047.

8. V.Vovk, A.Gammerman and H.Papadoupolus (eds). Measures of Complexity. Festchrift in honor of Alexey Chervonenkis. Springer, 2015.

9. Alexander Gammerman, Zhiyuan Luo, Jesus Vega and Vladimir Vovk (Eds.) Conformal and Probabilistic Prediction with Applications 5th International Symposium, COPA 2016 Madrid, Spain, April 20 — 22, 2016 Proceedings. Lecture Notes in Artificial Intelligence, Springer, 9653, 2016.

Special Issues of Journals

10. A.Gammerman and V.Vovk (editors). Special Issue on Kolmogorov Complexity. *The Computer Journal*, vol. 42, no. 4, pp.254-347, (1999).

11. C. Aitken, T. Connolly, A. Gammerman, G. Zhang, D. Oldfield. Predicting an Offender's Characteristics: an evaluation of statistical modelling. *Special Interest Series - Paper 4*, Home Office, London, 1995.

12. Alexander Gammerman and Vladimir Vovk. The 2nd British Computer Society Lecture. Hedging Predictions in Machine Learning. Published with discussion in *The Computer Journal*, v.50, No.2, 151-163, March 2007. The same journal also published: i) Discussion on Hedging Predictions in Machine Learning. *T*he Computer Journal, 2007, 50: 164-172; ii) Rejoinder Hedging Predictions in Machine Learning. *T*he Computer Journal, 2007, 50: 173-177.

13. Alex Gammerman, Ilia Nouretdinov, Brian Burford Alexey Chervonenkis, Vladimir Vovk and Zhiyuan Luo. Clinical Mass Spectrometry Proteomic Diagnosis by Conformal Predictors. *Statistical Applications in Genetics and Molecular Biology Journal*, Volume 7, Issue 2 2008 Article 13, 2008.

14. Alexander Gammerman. Conformal Predictors. *Progress in Artificial Intelligence, v.1, No.3, 2012*

15. Harris Papadopoulos, Volodya Vovk, Alex Gammerman. *Annals of Mathematics and Artificial Intelligence*, vol.74 (1-2), May-June 2015. Guest editors of the Special issue on Conformal Prediction and its Applications. DOI 10.1007/s10472-014-9429-3, 2015.

16. Alex Gammerman and Vladimir Vovk (editors). Special Issue of Journal of Machine Learning Research (JMLR) in memory of Alexey Chervonenkis. 16 (Sep), 2015.

17. Alexander Gammerman and Vladimir Vovk (eds.). *Annals of Mathematics and Artificial Intelligence*, October 2017, Volume 81, Issue 1– 2. Special issue on Conformal and Probabilistic Prediction with Applications; 2017.

18. Alex Gammerman, Vladimir Vovk, Zhiyuan Luo, Harris Papadopoulos (eds). Conformal and Probabilistic Prediction and Applications. *Proceedings of Machine Learning Research* vol.60; 13-16 June 2017, Stockholm, Sweden; 2017.

19. Alex Gammerman, Vladimir Vovk, Zhiyuan Luo, Eugeny Smirnov and Ralf Peeters (eds). Conformal and Probabilistic Prediction and Applications. *Proceedings of Machine Learning Research* vol.91, 2018.

20. Alex Gammerman, Vladimir Vovk, Zhiyuan Luo, Eugeny Smirnov (eds). Conformal and Probabilistic Prediction and Applications. *Proceedings of Machine Learning Research* vol.105, 2019.

21. Alexander Gammerman, Vladimir Vovk, Henrik Boström, Lars Carlsson (eds). *M*achine Learning, Vol. 108, No. 3, 03.2019. *Conformal and probabilistic prediction with applications: editorial*, ISSN: 0885-6125 (Print) 1573-0565 (Online), 2018.

22. Alexander Gammerman, Vladimir Vovk, Zhiyuan Luo, Evgueni Smirnov, Giovanni Cherubin (eds.). Conformal and Probabilistic Prediction and Applications. *Proceedings of Machine Learning Research*, v128, 2020.

Refereed Book Chapters, Journal Papers, Conference Proceedings

23. Patrizio Giovannotti, Alex Gammerman. Transformer-based conformal predictors for paraphrase detection. *Proceedings of Machine Learning Research*, v.152:243-265, 2021.

24. I. Nouretdinov, V. Vovk and A. Gammerman, "Conformal Change point Detection in Continuous Model Situations,"*Proceedings of the Tenth Symposium on Conformal and Probabilistic Prediction and Applications*, Egham, 2021.

25. Vladimir Vovk, Ivan Petej, Alex Gammerman. Protected probabilistic classification. *Proceedings of the Tenth Symposium on Conformal and Probabilistic Prediction and Applications*, PMLR 152:297-299, 2021

26. Vladimir Vovk, Ivan Petej, Ilia Nouretdinov, Ernst Ahlberg, Lars Carlsson, and Alex Gammerman. Retrain or not retrain: Conformal test martingales for change-point detection. *Proceedings of Machine Learning Research* 152:191-210, 2021.

27. V. Vovk, I. Petej, P. Toccaceli, A. Gammerman, E. Ahlberg and L. Carlsson. "Conformal calibration *The Ninth Symposium on Conformal and Probabilistic Prediction with Applications* , Egham, 2020. *Proceedings of Machine Learning Research*, v.128; 2020

28. V. Vovk, I. Petej, I. Nouretdinov, V. Manokhin and A. Gammerman. Computationally efficient versions of conformal predictive distributions. *Neurocomputing*, 397, 292–308; 2020.

29. Gammerman, A. Predictive distribution for decision making. *X-я Юбилейная международная школа – семинар «Многомерный статистический анализ, эконометрика и моделирование реальных процессов» имени С.А. Айвазяна*, Цахкадзор, Республика Армения, 2020.

30. Vladimir Vovk, Ivan Petej, Paolo Toccaceli, Alexander Gammerman, Ernst Ahlberg, Lars Carlsson. Conformal calibrators. *Proceedings of Machine Learning Research*, v.128, pp. 84–99; 2020.

31. Ilia Nouretdinov, Alexander Balinsky, Alexander Gammerman. Conformal anomaly detection for visual reconstruction using gestalt principles. *Proceedings of Machine Learning Research*, v.128, pp.151–170; 2020.

32. Alexander Gammerman, Vladimir Vovk, Zhiyuan Luo, Evgueni Smirnov, Giovanni Cherubin, Marco Christini. Preface. *Proceedings of Machine Learning Research*, v.128, pp.1–3; 2020.

33. Paolo Toccaceli and Alexander Gammerman Combination of inductive Mondrian conformal predictors. *Machine Learning*, Vol. 108, No. 3, 03.2019, p. 489–510, 2019.

34. Alexander Gammerman. Reliable Pattern Recognition by Conformal Predictors. *Proceedings of Computer Data Analysis and Modelling*, Minsk, 2019.

35. Alex Gammerman, Vladimir Vovk, Zhiyuan Luo, Harris Papadopoulos. Preface. *Proceedings of Machine Learning Research*; vol.60; PMLR 60:1-2; 2017.

36. Ilia Nouretdinov, Guang Li, Alexander Gammerman, Zhiyuan Luo. Application of Conformal Predictors to Tea Classification Based on Electronic Nose. *6th IFIP WG 12.5 International Conference on Artificial Intelligence Applications and Innovations (AIAI), Oct 2010, Larnaca, Cyprus. pp.303-310; (also in HAL Id: hal-01060632; 2017).*

37. Paolo Toccaceli and Alexander Gammerman. Combination of Conformal Predictors for Classification. *Proceedings of Machine Learning Research*; PMLR 60:39-61; 2017.

38. Denis Volkhonskiy, Evgeny Burnaev, Ilia Nouretdinov, Alexander Gammerman, Vladimir Vovk; Inductive Conformal Martingales for Change-Point Detection; *Proceedings of Machine Learning Research*; PMLR 60:132-153; 2017.

39. Paolo Toccaceli, Ilia Nouretdinov and Alexander Gammerman. Conformal prediction of biological activity of chemical compounds. *Annals of Mathematics and Artificial Intelligence*, October 2017, Volume 81, Issue 1– 2. DOI 10.1007/s10472-017-9556-8; 2017.

40. Vladimir Vovk, Ilia Nouretdinov, Valentina Fedorova, Ivan Petej & Alex Gammerman. Criteria of efficiency for set-valued classification. *Annals of Mathematics and Artificial Intelligence volume 81, pp. 21–46, (2017).*

41. Alexander Gammerman and Vladimir Vovk. Foreword: conformal and probabilistic prediction with applications. *Annals of Mathematics and Artificial Intelligence*. DOI 10.1007/s10472-017-9557-7; 2017.

42. Vladimir Vovk, Valentina Fedorova, Ilia Nouretdinov and Alex Gammerman. Criteria of Efficiency for Conformal Prediction. In: Alexander Gammerman, Zhiyuan Luo, Jesus Vega and Vladimir Vovk (Eds.) Conformal and Probabilistic Prediction with Applications 5th International Symposium, COPA 2016 Madrid, Spain, April 20 – 22, *Lecture Notes in Artificial Intelligence*, Springer, 9653, 2016.

43. Paolo Toccaceli, Ilia Nouretdinov and Alexander Gammerman. Conformal Predictors for Compound Activity Prediction. In: Alexander Gammerman, Zhiyuan Luo, Jesus Vega and Vladimir Vovk (Eds.) Conformal and Probabilistic Prediction with Applications 5th International Symposium, COPA 2016 Madrid, Spain, April 20–22, 2016 Proceedings. Lecture Notes in Artificial Intelligence, Springer, 9653, 2016.

44. Valentina Fedorova, Alex Gammerman, Ilia Nouretdinov and Vladimir Vovk. Hypergraphical Conformal Predictors. *International Journal on Artificial Intelligence Tools, Vol. 24, No. 06, 1560003 (2015).*

45. Alex Gammerman, Vladimir Vovk; Preface to the Special Issue of JMLR in memory of Alexey Chervonenkis *Journal of Machine Learning Research*, 16(Sep): 1677– 1681, 2015.

46. Smith, J., Nouretdinov, I., Craddock, R., Offer, C. & Gammerman, A. Conformal Anomaly Detection of Trajectories with a Multi-class Hierarchy Statistical Learning and Data Sciences: Third International Symposium, SLDS 2015, Egham, UK, April 20-23, 2015; Gammerman, A., Vovk, V. & Papadopoulos, H. (eds.). Springer *Lecture Notes in Artificial Intelligence*, Vol. 9047, p. 281-290 10 p.

47. Cherubin, G., Nouretdinov, I., Gammerman, A., Jordaney, R., Wang, Z., Papini, D. & Cavallaro, L. Conformal Clustering and Its Application to Botnet Traffic.
Statistical Learning and Data Sciences: Third International Symposium, SLDS 2015, Egham, UK, 2015.
Gammerman, A., Vovk, V. & Papadopoulos, H. (eds.). Springer *Lecture Notes in Artificial Intelligence*, 2015, Vol. 9047, p. 313-322 10 p.

48. Alexander Gammerman. Forward to the book *Conformal Predictions for Reliable Machine Learning: Theory, Adaptations and Applications*; editors: Vineeth Balasubramanian, Shen-Shyang Ho, Vladimir Vovk. Springer, 2014.

49. Ilia Nouretdinov, Tony Bellotti and Alexander Gammerman. Diagnostic and Prognostic by Conformal Predictors. Published in: *Conformal Predictions for Reliable Machine Learning: Theory, Adaptations and Applications*, pp.217–230; editors: Vineeth Balasubramanian, Shen-Shyang Ho, Vladimir Vovk. Springer, 2014.

50. Tony Bellotti, Ilia Nouretdinov, Meng Yang, Alex Gammerman. Feature Selection by Conformal Predictors. Published in: *Conformal Predictions for Reliable Machine Learning: Theory, Adaptations and Applications*, pp.115–130; editors: Vineeth Balasubramanian, Shen-Shyang Ho, Vladimir Vovk. Springer, 2014.

51. Antonis Lambrou, Harris Papadopoulos, Ilia Nouretdinov, and Alexander Gammerman. Reliable Probability Estimates Based on Support Vector Machines for Large Multiclass Datasets. *AIAI* (2) 2012: 182-191, 2012.

52. Ilia Nouretdinov, Dmitry Devetyarov, Brian Burford, Volodya Vovk, Stephane Camuzeaux, Aleksandra Gentry-Maharaj, Ali Tiss, Celia Smith, Zhiyuan Luo, Alexey Chervonenkis, Rachel Hallett, Mike Waterfield, Rainer Cramer, John F. Timms, Ian Jacobs, Usha Menon and Alex Gammerman. Multiprobabilistic Prediction in Early Medical Diagnoses. *Annals of Mathematics and Artificial Intelligence*, Sept.2014.

53. Brian Burford, Aleksandra Gentry-Maharaj, Rosalind Graham, Diane Allen, Johannes Pedersen, Aaron Nudelman, Ola Blixt, Evangelia-Ourania Fourkala, Deanna Bueti, Anne Dawnay, Jeremy Ford, Rakshit Desai, Leonor David, Peter Trinder, Bruce Acres, Tilo Schwientek, **Alex Gammerman**, Celso Reis, Luisa Silva, Hugo Osorio, Rachel Hallett, Hans Wandall, Ulla Mandel, Michael A Hollingsworth, Ian Jacobs, Ian Fentiman, Henrik Clausen, Joyce Taylor-Papadimitriou, Usha Menon, and Joy Burchell.

    Autoantibodies to MUC1 glycopeptides cannot be used as a screening assay for early detection of breast, ovarian, lung or pancreatic cancer. *British Journal of Cancer* (2013) 108, 2045–2055. doi:10.1038/bjc.2013.214

    Antonis Lambrou, Harris Papadopoulos, and Alexander Gammerman. Osteoporosis Risk Assessment with Well-Calibrated Probabilistic Outputs. In *Proceedings of the 9th Artificial Intelligence Applications and Innovations Conference (AIAI)*, pp.432-441, eds. by H.Papadopoulos, A.Andreou, L. Iliiadis, I.Magologiannis, Springer, 2013.

54. Valentina Fedorova, Alex Gammerman, Ilia Nouretdinov and Vladimir Vovk. Conformal prediction under hypergraphical models. In Proceedings of the *9th Artificial Intelligence Applications and Innovations Conference (AIAI)*, pp.371–383, Springer, 2013.

55. Valentina Fedorova, Alex Gammerman, Ilia Nouretdinov, Volodya Vovk. Plug-in martingales for testing exchangeability on-line. *International Conference on Machine Learning*, 2012. Full text available at: arXiv:1204.3251v1.

56. Ilia Nouretdinov, Alex Gammerman, Yanjun Qi, Judith Klein-Seetharaman. Determining Confidence of Predicted Interactions Between HIV-1 and Human Proteins Using Conformal Method *Pacific Symposium on Biocomputing*, 17. p. 311–322; 2012

57. Fedorova, V., Ivin, E., Nouretdinov, I. & Gammerman, A., Testing and Clustering with Gauss Linear Assumption for a Household Data. *SLDS 2012: Symposium on Learning and Data Science, Paris 2012.*

58. Devetyarov, D., Nouretdinov, I., Burford, B., Camuzeaux, S., Gentry-Maharaj, A., Tiss, A., Smith, C., Luo, Z., Chervonenkis, A., Hallett, R., Vovk, V., Waterfield, M., Cramer, R., Timms, J.F., Sinclair, J., Jacobs, I., Menon, U., Gammerman, A. Conformal Predictors in Early Diagnostics of Ovarian and Breast Cancers. In: *Progress in Artificial Intelligence*, v.1, No.3, pp.245-357, 2012).

59. Valentina Fedorova, Ilia Nouretdinov, Alex Gammerman. Testing exchangeability assumption. *Progress in Artificial Intellegence*, v.1, No.3, pp.205–213, 2012)

60. Olga Ivina, Ilia Nouretdinov, Alex Gammerman. Valid predictions with confidence estimation in air pollution problem. *Progress in Artificial Intellegence*, v.1, No.3, pp.235-243, 2012)

61. Nouretdinov, I., Devetyarov, D., Burford, B., Camuzeaux, S., Gentry-Maharaj, A., Tiss, A., Smith, C., Luo, Z., Chervonenkis, A., Hallett, R., Vovk, V., Waterfield, M., Cramer, R., Timms, J.F., Jacobs, I., Menon, U., Gammerman, A. Multiprobabilistic Venn Predictors with Logistic Regression. In: 8th AIAI *Artificial Intelligence Applications and Innovations* Conference, 1st Conformal Prediction and its Applications Workshop (COPA 2012).

62. Antonis Lambrou, Harris Papadopoulos, Ilia Nouretdinov, Alexander Gammerman Reliable probability estimates based on Support Vector Machines for large multiclass datasets.
In: 8th AIAI *Artificial Intelligence Applications and Innovations* Conference, 1st Conformal Prediction and its Applications Workshop (COPA 2012).

63. Harris Papadopoulos, Alexander Gammerman, Volodya Vovk Confidence Predictions for the Diagnosis of Acute Abdominal Pain. *Artificial Intelligence Applications and Innovations III*, Proceedings of the 5TH IFIP Conference on Artificial Intelligence Applications and Innovations (AIAI'2009), April 23-25, 2009, Thessaloniki, Greece; 01/2009

64. Timms JF, Menon U, Devetyarov D, Tiss A, Camuzeaux S, McCurrie K, Nouretdinov I, Burford B, Smith C, Gentry-Maharaj A, Hallett R, Ford J, Luo Z, Vovk V, Gammerman A, Cramer R, Jacobs I. "Early detection of ovarian cancer in samples pre-diagnosis using CA125 and MALDI-MS peaks". *Cancer Genomics Proteomics*. 2011 Nov;8(6):289-305.

65. H. Papadopoulos, V. Vovk and A.Gammerman. "Regression Conformal Prediction with Nearest Neighbours *Journal of Artificial Intelligence Research*, Volume 40, pages 815-840, 2011.

66. Dmitry Adamskiy, Ilia Nouretdinov and Alex Gammerman. "Conformal prediction in semi-supervised case". Chapter 4 in *"Learning and Data Science"*, edited by L.Bottou, F.Murtagh, M.Gettler-Summa, B.Goldfarb, C.Pardoux, M.Touati; Chapman&Hall, Paris, 2011.

67. I.Nouretdinov, S.Costafreda, A.Gammerman, A.Chervonenkis, V.Vovk, V.Vapnik and C.Fu. "Machine learning classification with confidence: Application of transductive conformal predictors to MRI-based diagnostic and prognostic markers in depression". *NEUROIMAGE*, volume 56, issue 2, year 2011, pp. 809 - 813.

68. A.Lambrou, H.Papadopoulos, E.Kyriacou, C.Pattichis, A.Nicolaides and A.Gammerman. "Assessment of stroke risk based on morphological ultrasound image analysis with conformal prediction". Submitted for publication in the *International Journal on Artificial Intelligence Tools* (IJAIT), 2011. Also appeared in the 6th IFIP International Conference on Artificial Intelligence Applications & Innovations, AIAI 2010.

69. M.Yang, I.Nouretdinov, Z.Luo and A.Gammerman. "Feature selection by Conformal Prediction". Accepted for publication in Proceedings of the *Workshop on Artificial Intelligence Applications in Biomedicine* (AIAB 2011).

70. C.Zhou, I.Nouretdinov, Z.Luo and A.Gammerman. "Development of the Venn Machine". Accepted for publication in Proceedings of the *Workshop on Artificial Intelligence Applications in Biomedicine* (AIAB 2011).

71. D.Adamsky, I.Nouretdinov and A.Gammerman. "Applying Conformal Prediction to the Bovine TB Diagnosing". Accepted for publication in Proceedings of the *Workshop on Artificial Intelligence Applications in Biomedicine* (AIAB 2011).

72. A.Gammerman and V.Vovk. "Predictions contolees en apprentissage automatique". *MODULAD* Journal, v.42pp.16-33, 2010. In French.

73. Dmitry Devetyarov, Martin J. Woodward, Nicholas G. Coldham, Muna F. Anjum, Alex Gammerman. "A New Bioinformatics Tool for Prediction with Confidence". 2010 International Conference on Bioinformatics and Computational Biology (*BIOCOMP'10*) Proceedings, p. 24-26, 2010.

74. Ola Blixt, Deanna Bueti, Brian Burford, Diane Allen, Sylvain Julien, Michael Hollingsworth, Alex Gammerman, Ian Fentiman, Joyce Taylor-Papadimitriou and Joy M. Burchell. "Autoantibodies to aberrantly glycosylated MUC1 in early stage breast cancer are associated with a better prognosis". Accepted for publication in *Breast Cancer Research Journal* (MS : 1027144559463124).

75. John Francis Timms, Usha Menon, Dmitry Devetyarov, Ali Tiss, Stephane Camuzeaux, Aleksandra Gentry-Maharaj, Zhiyuan Luo, Alex

Gammerman, Rainer Cramer, Ian Jacobs. "Early detection of ovarian cancer in pre-diagnosis samples using CA125 and MALDI MS peaks". Submitted to the *Journal of Gynecologic Oncology.*

76. V.Vovk, I.Nouretdinov and A.Gammerman. "On-line predictive linear regression". *Annals of Statistics*, Volume 37, Number 3 (2009), 1566-1590. Permanent link to this document: http://projecteuclid.org/euclid.aos/1239369032 Digital Object Identifier: doi:10.1214/08-AOS622

77. A. Lambrou, H. Papadopoulos and A. Gammerman. Evolutionary Conformal Prediction for Breast Cancer Diagnosis. *9th International Conference on Information Technology and Applications in Biomedicine* (ITAB'09).

78. Harris Papadopoulos, Volodya Vovk and Alex Gammerman. Reliable diagnosis of acute abdominal pain with conformal prediction. *Journal of Engineering Intelligent Systems*, Vol 17 Nos 2/3 June/September 2009, pp.127-137.

79. I.Nouretdinov, D.Devetyarov and A.Gammerman. Application of Inductive Confidence Machine to ICMLA-competition data. *8th International Conference on Machine Learning and Applications* - ICMLA 2009, Miami, Florida, 2009.

80. A.Gammerman, R.J.Richards, I.Nouretdinov. Detection and Abundance Estimation of Material Classes from Airborne from LWIR Hyperspectral Data. EMRS DTC 6th Conference, Edinburgh, 2009.

81. D.Devetyarov, I. Nouretdinov and A.Gammerman. Confidence Machine and its application to Medical Diagnosis; *Int.Conf.on Biological Computing* (BioComp09), July 2009, USA.

82. A. Lambrou, H. Papadopoulos, A. Gammerman Reliable Confidence Measures for Medical Diagnosis With Evolutionary Algorithms *IEEE Transactions on Information Technology in Biomedicine.* 02/2011; DOI:10.1109/TITB.2010.2091144

83. Antonis Lambrou, Harris Papadopoulos, Alexander Gammerman. Reliable Confidence Measures for Medical Diagnosis With Evolutionary Algorithms. *IEEE Transactions on Information Technology in Biomedicine* 01/2011; 15:93-99.

84. Ali Tiss, Celia Smith, Dmitry Devetyarov, Aleksandra Gentry-Maharaj, Stephane Camuzeaux, Brian Burford, Ilia Nouretdinov, Jeremy Ford, Zhiyuan Luo, Alex Gammerman, John F. Timms, Ian Jacobs, Usha Menon and Rainer Cramer. Proteomics analysis of ovarian cancer serum samples (Part 1): Peptides generated ex vivo from abundant serum proteins by tumour-specific exopeptidases are not useful biomarkers in ovarian cancer. *Clinical Chemistry*, 56: p. 262-271, 2010.

85. John F. Timms, Rainer Cramer, Stephane Camuzeaux, Ali Tiss, Celia Smith, Brian Burford, Ilia Nouretdinov, Musarat Kabir, Aleksandra Gentry-Maharaj, Jeremy Ford, Zhiyuan Luo, Alex Gammerman, Usha Menon and Ian Jacobs. Proteomics analysis of ovarian cancer serum samples (Part 2): Serum MALDI-TOF MS profiling and CA125 immunoassay as diagnostic tools.
Cancer Genomics and Proteomics November-December 2011 vol. 8 no.6 289-305.

86. Peter McCullagh, Vladimir Vovk, Ilia Nouretdinov, Dmitry Devetyrov, Alexander Gammerman. Conditional Prediction Intervals for Linear Regression. *International Conference on Machine Learning and Applications* ICMLA 2009: 131-138

87. Fedor Zhdanov, Vladimir Vovk, Brian Burford, Dmitry Devetyarov, Ilia Nouretdinov and Alex Gammerman. Online Prediction of Ovarian Cancer. *Lecture Notes in Computer Science* Volume 5651/2009 Artificial Intelligence in Medicine DOI 10.1007/978-3-642-02976-9; 2009.

88. F- M. Schleif, T. Willmann, A. Gammerman, M. Kostrzewa, B. Hammer Cancer informatics by prototype networks in mass spectrometry. *Artificial Intelligence in Medicine* 45(2-3): 215-228, 2009.

89. A. Lambrou, H. Papadopoulos, A. Gammerman Evolutionary Conformal Prediction for Breast Cancer Diagnosis. *Information Technology and Applications in Biomedicine*, 2009. ITAB 2009. 9th International Conference on; 12/2009; DOI:10.1109/ITAB.2009.5394447

90. H. Papadopoulos, A. Gammerman and V. Vovk. Confidence Predictions for the Diagnosis of Acute Abdominal Pain. In L. Iliadis, I. Vlahavas and M. Bramer (Eds.), *Artificial Intelligence Applications & Innovations III*, Volume 296 of IFIP International Federation for Information Processing, 175 - 184. Springer, 2009.

91. A.Gammerman, V.Vovk, B.Burford, I.Nouretdinov, Z.Luo, A.Chervonenkis, M.Waterfield, R.Cramer, P.Tempst, J.Villanueva, M.Kabir, S.Camuzeaux, J.Timms, U.Menon and I.Jacobs. Serum proteomic abnormality predating screen detection of ovarian cancer . *The Computer Journal* Volume 52, Issue 3 Pp. 326-333, 2009.

92. Ramus SJ, Elmasry K, Luo Z, Gammerman A, Lu K, Ayhan A, Singh N, McCluggage WG, Jacobs IJ, Whittaker JC, and Gayther SA. Predicting clinical outcome in patients diagnosed with synchronous ovarian and endometrial cancer. *Clinical cancer research*; an official journal of the American Association for Cancer Research 14(18):5840-8, 2008 Sep 15

93. B.Ryabko, J.Astola and A.Gammerman. Adaptive Coding and Prediction of Sources with Large and Infinite Alphabets, *IEEE Transaction on Information Theory*, v.54, No.8, pp.3808–3813, August 2008.

94. H. Papadopoulos, V. Vovk and A.Gammerman. Normalized Nonconformity Measures for Regression Conformal Prediction. *Artificial Intelligence and Applications* - AIA 2008 Conference, Innsbruck, Austria, pp.64-69, 2008.

95. H. Papadopoulos, V. Vovk and A. Gammerman. Conformal Prediction with Neural Networks. In Proceedings of the *19th IEEE International Conference on Tools with Artificial Intelligence (ICTAI'07)*, Volume 2, 388 - 395. IEEE Computer Society, 2007.

96. S.Busutill, Y.Kalnishkan and A.Gammerman. Improving the Aggregating Algorithm for Regression. *Artificial Intelligence and Applications*, In Proceedings of the 25th IASTED Conference Artificial Intelligence and Applications (AIA 2007), pp.347–352, Innsbruck, Austria, (2007), Editor: V.Devedzic.

97. John F. Timms, Elif Arslan-Low, Aleksandra Gentry-Maharaj, Zhiyuan Luo, Davy T.Jampens, Vladimir N. Podust, Jeremy Ford, Eric T. Fung, Alex Gammerman, Ian Jacobs, and Usha Menon. Preanalytic Influence of Sample Handling on SELDI-TOF Serum Protein Profiles *Clinical Chemistry*, **53**, 645–656, April 2007.

98. A Gammerman, A Chervonenkis, I Nouretdinov, J Nothard and K Smart. Compact Descriptors for Automatic Target Identification. 7th EMRS DTC Technical Conference, Edinburgh, 2007.

99. B.Ryabko, J.Astola and A.Gammerman. Application of Kolmogorov complexity and universal codes to identity testing and nonparametric testing of serial independence for time series. *Theoretical Computer Science*, v.359, No.1-3, August 2006; also in e-print archive, 2005, http://arxiv.org/abs/cs/0505079.

100. A.Gammerman. Transductive Learning. *Joint 3rd International Conference on Soft Computing and Intelligent Systems and 7th International Symposium on Advanced Intelligent Systems*, CD, Tokyo, Japan, 2006.

101. A.Bellotti, Z.Luo and A.Gammerman. Reliable classification of childhood acute leukaemia from gene expression data using Confidence Machines. *IEEE International Conference on Granular Computing*, Atlanta, USA, 2006.

102. A.Bellotti, Z.Luo, A.Gammerman, F.van Delft and V.Saha. Qualified Predictions for Microarray and Proteomics Pattern Diagnostics with Confidence Machines, *International Journal of Neural Systems* vol.15, No.4, pp.247-258, 2005.

103. F. van Delft, T. Bellotti, Z. Luo, A.Gammerman, L. Jones, N. Patel, O.Yiannikouris, A. Hill, M. Hubank, H. Kempski, D. Fletcher, T.Chaplin, N. Foot, B. Young, I. Hann, and V. Saha. Perspective gene expression analysis accurately subtypes acute Leukaemia in children and establishes

a commonality between hyperdiploidy and t(12;21) in acute lymphoblastic leukaemia, *British Journal of Haemotology*, Issue 1, pp. 26-35, July 2005.

104. Z.Luo and A.Gammerman. Qualified Probabilistic Predictions using Graphical Models, In L. Godo (eds) *ECSQARU 2005, Lecture Notes in Artificial Intelligence 3571*, pp. 111-122, Springer-Verlag Berlin Heidelberg, August 2005.

105. I Shahmuradov, A.Gammerman and V.V.Solovyev. Plant Promoter Prediction with Confidence Estimation. *Nucleic Acids Research*, 33(3), pp. 1069-1076, 2005

106. Z.Luo and A.Gammerman. Qualified Predictions for Proteomics Pattern Diagnostics with Confidence Machines. In: Intelligent Data Engineering and Automated Learning - IDEAL 2004 *Lecture Notes in Computer Science 3177*, pp 46-51, Springer, 2004.

107. Yuri Kalnishkan, Vladimir Vovk and Alex Gammerman. On-line Predictions with Kernels and the Complexity Approximation *Proceedings of the Twentieth Conference on Uncertainty in Artificial Intelligence (UAI - 04)*, 2004, pp. 170-176, AUAI Press.

108. I.Nouretdinov, V.Vovk and A.Gammerman. Testing exchangability on-line. *Proceedings of the 20th International Conference on Machine Learning* (ed. by T Fawcett and N. Mishra), 2003, pp. 768-775, Menlo Park, CA, A AAJ Press.

109. Shahmuradov I.A., Hancock J.M., Bramley P.M., Gammerman A.J. and Solovyev V.V. PlantProm: a database of plant promoter sequences. *Nuclear. Acids. Res.* 31, 2003, pp.114-117.

110. Gordon L., Chervonenkis A.Ya., Shahmuradov I.A. , Solovyev V.V. and Gammerman A.J. Sequence alignement kernel for recognition of promoter regions. *Bioinformatics*, 19, 2003, 1964-1971.

111. Shahmuradov I.A., Akbarova Y. Yu. Gammerman A.J. and Solovyev V.V) Plastid DNA splinters in nuclear genomes of rice and Arabidopsis. In: European Journal of Biochemistry, 269, Supplement 1, p. 51.

112. L. Gordon, Chervonenkis A.Ya. Gammerman A. and Shahmuradov I.A.) Genome-wide prokaryotic recognition based on sequence alignment kernel. In: Advances in Intelligent Data Analysis, (ed. by Berthold, Lenz, Bradley, Kruse and Borgelt), 2003, pp.386-396, Springer Verlag.

113. A.Gammerman and V.Vovk. Prediction algorithms and confidence measures based on algorithmic randomness theory, *Theoretical Computer Science*, 287 (2002) 209-217.

114. Harris Papadopoulos, Kostas Proedrou, Volodya Vovk and Alex Gammerman. Qualified Predictions for Large Data Sets in the Case of Pattern Recognition. In: Proceedings of the International Conference on Machine Learning and Applications (ICMLA'02), 2002, pp.159-163, CSREA Press.

115. Kostas Proedrou, Ilia Nouretdinov, Volodya Vovk and Alex Gammerman. Transductive Confidence Machines for Pattern Recognition, *European Conference on Machine Learning*, Lecture Notes in Artificial Intelligence, pp. 381-390, 2002.

116. Harris Papadopoulos, Kostas Proedrou, Volodya Vovk and Alex Gammerman. Inductive Confidence Machines for Regression, European Conference on Machine Learning, *Lecture Notes in Artificial Intelligence*, pp.345-356, 2002.

117. A. Chervonenkis, M. Herbster and A.Gammerman. A combined Bayes-maximum likelihood method for regression. *Data Fusion and Perception*, Riccia, Lenz, Kruse eds, Springer-Verlag Wein New York, 2001.

118. I. Nouretdinov, M. V'yugin, V. Vovk and A.Gammerman. Pattern Recognition and density estimation under the general i.i.d. assumption, *Proceedings of Computational Learning Theory (COLT)*, Amsterdam, 2001.

119. Support Vector Machine Learning Algorithm and Transduction. In: *Computational Statistics*, v.15, pp.31-39, 2000.

120. N. Gilardi, A. Gammerman, M. Kanevski, M. Maignan, T. Melluish, C. Saunders, and V. Vovk. Application des methodes d'apprentissage pour l'etude des risques de pollution dans le lac leman. Colloque CLUSE sur les Risques Majeurs, 2000; in French.

121. C. Saunders, A.Gammerman, H. Brown and G. Donald. Application of Support Vector Machines to Fault Diagnosis, In: *Proceedings of the Eleventh International Workshop on the Principles of Design (DX'00)*, 2000.

122. C. Saunders, A.Gammerman and V. Vovk. Computationally Efficient Transductive Machines, In: Proceedings of the Eleventh International Conference on Algorithmic Information Theory (ALT 2000), *Lecture Notes in Computer Science*, Springer-Verlag, pp.325-333, 2000.

123. P. van Trappen, M. Stitson, R. Wools, S. Barnhill, V. Vapnik, I. Jacobs and A.Gammerman) Preoperative Differentiation of Ovarian Tumours using Support Vector Machine and Risk Malignancy Index, In: *Proceedings of the International Federation of Obstetrics and Gynaecology (FIGO) Conference*, Washington, 2000.

124. V.Vovk and A.Gammerman. Statistical applications of algorithmic randomness. *International Statistics Institute*, 52nd Session, Helsinki, 1999.

125. V.Vovk, C.Saunders and A.Gammerman. Machine Learning Applications of Algorithmic Randomness. *Machine Learning, Proceedings of the Sixteen International Conference (ICML'99)*, 1999.

126. C.Saunders, V.Vovk and A.Gammerman. Transduction with Confidence and Credibility. *Proceedings of the International Joint Conference on Artificial Intelligence*, Stockholm, Sweden, 1999, (Postscript).

127. M.Stitson, V. Vapnik, V. Vovk, C.Watkins, J. Weston and A.Gammerman. Support Vector Regression with ANOVA Decomposition Kernels, In Scholkopf B., Burges C.J.C., and Smola A.J., editors, *Advances in Kernel Methods, Support Vector Learning*, pages 285-291. The MIT Press, Cambridge, Mass and London, England, 1999.

128. J.Weston, M.Stitson, V.Vapnik, V.Vovk, C.Watkins and A.Gammerman. Support Vector Density Estimation. In Scholkopf B., Burges C.J.C., and Smola A.J., editors, *Advances in Kernel Methods, Support Vector Learning*, pages 293-305. The MIT Press, Cambridge, Mass and London, England, 1999.

129. A.Gammerman and V.Vovk. Kolmogorov Complexity: Sources, Theory and Applications. The Special Issue of *The Computer Journal*, v.42, No.4, 1999.

130. V.Vovk and A.Gammerman. Predictive Complexity Principle. The Special Issue of *The Computer Journal*, v.42, No.4, 1999.

131. A.Gammerman and V.Vovk. Learning Algorithms in High Dimensional Space. *Causal Models and Intelligent Data Management*, Springer, 1999.

132. A.Chervonenkis, A.Gammerman and M.Herbster. A combined Bayesian - ML approach to model selection. *Proceedings of IJCAI99 Workshop on Support Vector Machine*, Stockholm, Sweden, 1999.

133. A.Gammerman, V.Vovk and V.Vapnik. Learning by Transduction. In Cooper G.F. and Moral S., editors, *Uncertainty in Artificial Intelligence*, Procs of the Fourteenth Conference (1998), Madison, Wisconsin, July 1998, pages 148-155. Morgan Kaufmann, San Francisco, CA, 1998.

134. A.Gammerman. Multivariate analysis and Bayesian belief networks for Intelligent Decision Support Systems. In: Proceedings of the EURO XVI: 16th European Conference on Operational Research, Belgium, 1998.

135. A.Gammerman. Learning by Support Vector Machine, Ridge Regression and Transduction. In: *NTTS98: International Conference on New Techniques and Technologies for Statistics*; pp.175-181, Sorrento, Italy, 1998.

136. C. Saunders, V.Vovk and A.Gammerman. Ridge Regression Learning Algorithm in Dual Variables, *Proceedings of the 15th International Conference on Machine Learning*, 1998.

137. C.G.G.Aitken, T.Connolly, A.Gammerman, G.Zhang, D.B.Bailey, R.Gordon and R.Oldfield. Statistical modelling in specific case analysis. *Science and Justice*, 36(4):245-255, 1996.

138. C.G.G.Aitken, A.Gammerman, G.Zhang, T.Connolly, D.B.Bailey, R.Gordon and R.Oldfield. Bayesian belief networks with an application in specific case analysis. In A. Gammerman, editor, *Computational Learning and Probabilistic Reasoning*, pages 169-184. John Wiley & Sons, Chichester, 1996.

139. A.Gammerman and A.Bellotti. Emily - a minimal length encoding system. In Procs of IFCS-96, Kobe, Japan, 1996.

140. Z.Luo, A.Gammerman, C.G.G.Aitken and M.Brewer) Exact and approximate algorithms and their implementations in mixed graphical models. In A. Gammerman, editor, *Probabilistic Reasoning and Bayesian Belief Networks*, pages 33-53. Alfred Waller, Henley-on-Thames, 1995.

141. A.Gammerman and A.Bellotti. Induction experiments with a minimal length encoding system. In UNICOM Seminar on Applied Decision Technologies, pages 209-222, London, 1995.

142. M.Brewer, Z.Luo and A.Gammerman. Using multiple chains for Gibbs sampling in mixed graphical association models. *Computational Statistics* - COMPSTAT, pages 185-189, Physica-Verlag, Heidelberg, Germany, 1994.

143. A.Gammerman. Computational models of probabilistic reasoning. In D.J. Hand, editor, *AI and Computer Power, The impact of statistics*, pages 149-168. Chapman and Hall, 1994.

144. A.Gammerman. Geometric analogy problem by minimal-length encoding. In: *International Federation of Classification Societies Conference – IFCS*, pages 201-203, Paris, 1993.

145. A.Gammerman and H.Styri. A connectionist expert system and its application to a large set of medical data. In: *Medical Informatics Europe MIE-93*, Jerusalem, February 1993.

146. C.G.G.Aitken, M.J.Brewer, A.Gammerman and Z.Luo Stochastic simulation in mixed graphical association models. In K. Dodge and F. Whittaker, editors, *Computational Statistics*, volume 1, pages 257-262, 1992.

147. A.Gammerman, R.H.Davis and D.B.Edelman. Machine learning algorithms. *IMA Journal of Mathematics Applied in Business and Industry*, 3(3), 1992.

148. A.Gammerman and A.R.Thatcher. Bayesian diagnostic probabilities without assuming independence of symptoms. *Methods of Information in Medicine*, 30(1):44-52, 1991.

149. Z.Luo and A.Gammerman. PRESS - a probabilistic reasoning expert system shell. Number 548 in *Lecture Notes in Computer Science*, pages 232-237. Springer-Verlag, 1991.

150. Z.Luo and A.Gammerman. STOSS - a stochastic simulation system for bayesian belief networks. Number 521. In: *Lecture Notes in Computer Science*, pages 97-105. Springer-Verlag, 1991.

151. A.Gammerman. Constructing causal trees for a predictive expert system. In 3rd Conference of the International Federation of Classification Societies, Heriot-Watt University UK, 1991.

152. Z.Luo and A.Gammerman. A stochastic simulation system and its application to causal models. In 3rd International Conference on IPMU in Knowledge-Based Systems, pages 186-189, The Institution of Electrical Engineers, Paris, 1990.

153. A.Gammerman and Y.Gu. Computer-aided diagnoses using Bayesian inference. In Proceedings of European Conference Simulation in Biology and Medicine, pages 128-132. Erlangen-Nuremberg, June 1990.

154. A.Gammerman and D.Wang. An intelligent tutoring system for medical students. *Theoretical Surgery*, 5(3), 1990.

155. Y.Gu and A.Gammerman. A computer-aided medical system and its application to the diagnosis of abdominal pain. *Theoretical Surgery*, 5(3), 1990.

156. A.Gammerman. A causal probabilistic reasoning system. In *4th International Symposium on Knowledge Engineering*, pages 23-41, Barcelona, May 1990.

157. A.Gammerman and A.R.Thatcher. Bayesian inference in an expert system without assuming independence. In M. Golumbic, editor, *Advances in Artificial Intelligence, Natural Languages and Knowledge Based Systems*, pages 182-218. Springer-Verlag, 1990.

158. C.Aitken and A.Gammerman. Probabilistic reasoning in evidential assessment. *Journal of the Forensic Science Society*, 29(5):1-13, 1989.

159. X.Liu and A.Gammerman. TBKS: a tool that captures expertise. In Procs of the 3rd International Conference on Knowledge Engineering, pages 35-46, 1988.

160. A hybrid approach to deductive uncertain inference. *International Journal Man-Machine Study*, 28:671-681, 1988.

161. W.Atkinson and A.Gammerman. An application of expert systems technology to identification task. *Taxon*, 36(4):705-714, 1987.

162. A.Gammerman and S.Salvini. PROTEST: A prototyping tool for knowledge engineering. In Procs of 7th International Medical Informatics Congress MIE-87, pages 45-49, 1987.

163. X.Liu and A.Gammerman. On the validity and applicability of the INFERNO system. In: *Research and Development in Expert Systems III*, pages 47-56. Cambridge University Press, 1987.

164. A.Gammerman and N.Creaney. Modelling of uncertainty in expert systems. In Procs of the 2nd International Conference on Expert Systems, London, pages 132-141, 1986.

165. W.Atkinson and A.Gammerman. Expert key: an expert system for identification. In Computers in Teaching, Vol. 5. Oxford University, 1986.

166. A.Gammerman, B.Skullerand and W.Atkinson. An expert system for biological identification. In: *SPIE, Applications of Artificial Intelligence IV*, volume 657, pages 34-38, Washington, 1986

167. A.Gammerman, B.Skullerand and W.Atkinson. Sysex: An expert system for biological identification. In John F. Gilmore, editor, Procs Applications of Artificial Intelligence IV, Innsbruck, Austria, April 1986.

168. A.Gammerman and K.Zhuravleva. Lectures on theory of probability, mathematical statistics and design of experiments for medical students (in Russian). Lecture Notes for the 2nd Medical Institute, Leningrad, 1984.

169. M.Pimenov and A.Gammerman. Methods of multidimensional analysis in chemosystematics (in Russian). Chemosystematics and Evolutionionary Biochemistry of Plants; pp.121-122. Moscow, 1982.

170. M.Pimenov and A.Gammerman Analysis of interspicies chemical and morphlogical variabilities of multidimensional analysis by multidimensional information analysis and automated clustering (in Russian). Plant Resources, v.17, pp.24– 36, 1981.

171. А.Гаммерман. Взаимодействие фоторецепторов энергетической и регуляторной систем высших растений. Биокибернетика, бионика, моделирование биосистем. Труды Украинской республиканской конференции, Киев, 1970.

172. А.Гаммерман и Л.Фукшанский. Теория и расчет динамики превращений форм фитохрома в зеленом листе. Журнал Физиология растений, т.28, 4, 1971.

173. А.Гаммерман. Аналитическое исследование динамики переходов форм фитохрома при селективном экранировании. Математические модели в агрофизике и биологии. Труды по агрофизике, Ленинград, 1971.

174. А.Гаммерман. Аналитическое исследование регуляторной системы фотоморфогенеза.

175. А.Гаммерман. Аналитическое исследование динамики переходов форм фитохрома при селективном экранировании. Математические модели в агрофизике и биологии. Труды по агрофизике, Ленинград, 1971.

176. А.Гаммерман. Аналитическое исследование регуляторной системы фотоморфогенеза. Моделирование структурно-функциональных организмов биологических систем. Москва-Дубна, 1972

177. А.Гаммерман, Квантовая модель управляющего светового воздействия. Научно-технический бюллетень по агрономической физике. Ленинград, 1973.

178. А.Гаммерман и Л.Фукшанский. Исследование фитохрома - регуляторной системы фотоморфогенеза растений. Управление скоростью и направленностью биосинтеза у растений. 3 Всесоюзное совещание по управляемому биосинтезу и биофизике популяций. Красноярск, 1973.

179. А.Гаммерман. Теоретический анализ процессов в системе фитохрома - рецептора фотоморфогенетических реакций растений. Автореферат диссертации на соискание степени кандидата физико-математических наук. Институт физики АН СССР, Красноярск, 1973.

180. А.Гаммерман. Теоретический анализ процессов в системе фитохрома - рецептора фотоморфогенетических реакций растений. Диссертация на соискание степени кандидата физико-математических наук. Институт физики АН СССР, Красноярск, 1973.

181. А.Гаммерман и Л.Фукшанский. Математическая модель фитохрома - регулятора фотоморфогенетических процессов у растений. Журнал Онтогенез, т.5, 2, 1974.

182. Гаммерман А.Я. Корреляционная функция между процессами в фитохроме и фотоморфогенетическими реакциями в растениях. Доклады Академии Наук СССР, т.226, 4, 1976.

Selected Technical Reports

183. Theory of SV machines (joint work with M. O. Stitson, J. Weston, V. Vovk and V. Vapnik). Technical Report CSD-TR-96-17, Department of Computer Science, Royal Holloway, University of London, December 1996.

184. Support Vector ANOVA decomposition (joint work with M. O. Stitson, A. Gammerman, V. Vapnik, C. Watkins and J. Weston). Technical Report CSD-TR-97-22, Department of Computer Science, Royal Holloway, University of London, November 1997.

185. Density estimation using support vector machines (joint work with J. Weston, V. Vovk, M. O. Stitson, V. Vapnik and C. Watkins). Technical Report CSD-TR-97-23, Department of Computer Science, Royal Holloway, University of London, November 1997, revised February 1998.

186. Complexity Approximation Principle (joint work with V. Vovk). Technical Report CSD-TR-99-05, Department of Computer Science, Royal Holloway, University of London, January 1999.

187. Transductive Confidence Machines for pattern recognition (joint work with K. Proedrou, I. Nouretdinov and V. Vovk). Technical Report CLRC-TR-01-02, Computer Learning Research Centre, Royal Holloway, University of London, June 2001.

188. Pattern recognition and density estimation under the general i.i.d. assumption (joint work with I. Nouretdinov, M. Vyugin and V. Vovk). Technical Report CLRC-TR-01-06, Computer Learning Research Centre, Royal Holloway, University of London, June 2001.

189. Mondrian Confidence Machine (joint work with D. Lindsay, I. Nouretdinov and V. Vovk). On-line Compression Modelling project, Working Paper #4, 2003.

190. Online region prediction with real teachers, (joint work with D. Ryabko and V. Vovk). On-line Compression Modelling project, Working Paper #7, 2003.

191. Mass Spectrometry Data Analysis: Preprocessing and Pattern Recognition of the Sloan-Kettering Data. CLRC Technical Report 01-02-2005; (joint work with I.Nouretdinov, Z.Luo, A.Chervonenkis, V.Vovk Paul Tempst, John Philip, Josep Villanueva). 2004–2005.

192. Data Analysis of Human Serum Proteome II:UKCTOCS Data Pilot Study. (joint work with Ilia Nouretdinov, Brian Burford, Zhiyuan Luo, Alexey Chervonenkis, Volodya Vovk, John Timms, Mike Waterfield, Musarat Kabir, Paul Tempst, Josef Villanueva, Usha Menon and Ian Jacobs). November, 2005.

193. Two New Kernel Least Squares Based Methods for Regression, (joint work with S. Busuttil and Y. Kalnishkan), March 2006.

194. Data Analysis I - Comparison of Protocols, Version 2; (joint work with Ilia Nouretdinov, Brian Burford, Zhiyuan Luo, Alexey Chervonenkis and Volodya Vovk), June 2006;

195. Data Analysis II: Comparison of Plasma Protocols (joint work with Ilia Nouretdinov, Brian Burford, Zhiyuan Luo, Alexey Chervonenkis, Volodya Vovk, Davy T'Jampens, Eric T.Fung, Elif Arslan-Low, Jeremy Ford, Aleksandra Gentry-Maharaj John Timms, Adam Rosenthal, Usha Menon and Ian Jacobs). 2006.

196. Serum proteomic abnormality predating screen detection of ovarian cancer (joint work with Ilia Nouretdinov, Brian Burford, Zhiyuan Luo, Alexey Chervonenkis, Volodya Vovk, Musarat Kabir, John Timms, Paul Tempst, Josef Villanueva, Usha Menon and Ian Jacobs). 2007.

197. Data Analysis of 7 biomarkers –version 4. (with I.Nouretdinov, B.Burford, Z.Luo), RHUL, 2008.
http://www.clrc.rhul.ac.uk/projects/Private/7bmReport.pdf

198. MRC UKOPS: CLRC Data Analysis Report. (with D.Devetyarov, B. Burford, Z.Luo, I. Nouretdinov, V. Vovk, A.Chervonenkis; S. Camuzeaux, R.Hallet, J. Ford, A. Gentry-Maharaj, J.Timms, U. Menon, I. Jacobs; R. Cramer, A.Tiss, C.Smith. CLRC Technical Report –TR–08–01.

199. UKOPS Supplementary results I; 2008.
http://clrc.rhul.ac.uk/projects/proteomic3.htm

200. UKOPS Supplementary results II. CLRC Technical Report: CLRC–TR–08–01, 2009.
http://www.clrc.rhul.ac.uk/projects/Private/UKOPS-SUP2-CLRC-08-01.pdf

201. Identification of proteomic biomarkers in the UKCTOCS Heart Diseases data set. CLRC Technical Report: CLRC–TR–08–04; 2009 (D.Devetyarov, B. Burford, Z.Luo, I. Nouretdinov, V. Vovk, A.Chervonenkis; S. Camuzeaux, R.Hallet, J. Ford, A. Gentry-Maharaj, J.Timms, U. Menon, I. Jacobs; R. Cramer, A.Tiss, C.Smith).

202. Early detection of Breast Cancer in UKCTOCS using proteomic biomarkers. CLRC Technical Report: CLRC–TR–08–03; 2009 (D.Devetyarov, B. Burford, Z.Luo, I. Nouretdinov, V. Vovk, A.Chervonenkis; S. Camuzeaux, R.Hallet, J. Ford, A. Gentry-Maharaj, J.Timms, U. Menon, I. Jacobs; R. Cramer, A.Tiss, C.Smith).

203. Analysis of serial UKCTOCS-OC data: discriminating abilities of proteomics peaks. CLRC Technical Report: CLRC–TR–08–02; 2008 (D.Devetyarov, B. Burford, Z.Luo, I. Nouretdinov, V. Vovk, A.Chervonenkis; S. Camuzeaux, R.Hallet, J. Ford, A. Gentry-Maharaj, J.Timms, U. Menon, I. Jacobs; R. Cramer, A.Tiss, C.Smith).

204. Discovery of proteomic biomarkers for heart disease. B. Burford, A. Tiss, S. Camuzeaux, J. Ford, A. Gentry-Maharaj, U. Menon, I. Jacobs, D. Devetyarov, Z. Luo, I. Nouretdinov, V. Vovk, J. Timms, R. Cramer, A. Gammerman; 2009.

205. Spectra analysis system – documentation (with B.Burford, I.Nouretdinov, D.Devetyarov, Z.Luo, A.Chervonenkis, V.Vovk), RHUL, London, 2009.

Selected Grants

- Engineering and Physical Sciences Research Council (EPSRC), grant GR/L35812, PI. "Support Vector and Bayesian Learning Algorithms: Analysis and Applications" (with V. Vovk and V. Vapnik), £142,360*. 1997–2000.

- Engineering and Physical Sciences Research Council (EPSRC), grant GR/M16856, PI. "Comparison of the Support Vector Machine and Minimum Message Length methods for induction and prediction" (with V. Vovk and C. Wallace), £132,787* 1999–2002.

- Engineering and Physical Sciences Research Council (EPSRC), grant GR/R46670/01, PI. "Complexity Approximation Principle and Predictive Complexity: Analysis and Applications" (with Prof. V. Vovk), £142,996*, 2001–2004.

- Biotechnology and Biological Sciences Research Council (BBSRC), grant 111/BIO14428, PI. "Pattern Recognition Techniques for Gene and Promoter Identification and Classification in Plant Genomic Sequences" (with J. Hancock and V. Solovyev), £145,210*, 2002– 2005.

- European Union (EU), grant IST-1999-10226, PI. "EurEdit: The Development and Evaluation of New Methods for Editing and Imputation" (with European partners from Italy, the Netherlands, Switzerland, Portugal), RHUL part: £86,809*, 2000–2003.

- Royal Society grant, PI, "Efficient randomness testing of random and pseudorandom number generators" (with B. Ryabko), £4,961, 2003–2005.

- Medical Research Council (MRC), grant G0301107 (S505/65), PI. "Proteomic Analysis of the Human Serum Proteome" (with I. Jacobs, M. Waterfield, R. Cramer, V. Vovk, S. Gayther, Z. Luo, U. Menon, J. Timms), RHUL part: £170,091*, 2005–2008. (total funding £959,954).

- QinetiQ grant: "Automated Target Identification". £47,000 2006–2007. (total funding £47,000).

- Research Promotion Foundation of Cyprus. "ASPIDA project: Development of New Conformal Prediction Methods with Applications in Medical

Diagnosis", PI, (with H. Papadopoulos and V. Vovk), £30,770, 2007–2010.

- Engineering and Physical Sciences Research Council "Practical competitive prediction" (with V. Vovk and Y. Kalnishkan), co-PI, £406,000, 2007-2010.

- Department for Environment, Food and Rural Affairs (Defra), Veterinary Laboratories Agency, "Application of Pattern Recognition techniques to Bioinformatics." PI, £82,000, 2007–2010.

- European Union EU FP7 programme: "Post-translational modification, O-PTM", HEALTH-2007-2.4.1-2: Translating clinical 'omics'-technology (genomics, proteomics, metabolomics) into innovative cancer biomarkers aiding in early diagnosis, prognosis and treatment selection of cancer patients. (with Dr Joy Burchell, Prof Joyce Taylor-Papadimitriou, KCL; Z.Luo and V.Vovk from RHUL and 5 other institutions), PI, £193,046, 2008-2011. (total funding £5 mln euros).

- Medical Research Council (MRC) Application of conformal predictors to functional magnetic resonance fMRI imaging research; PI, £85,581, 2009–2010.

- Royal Society grant, "Trace Detection with Confidence for Odor Capture Hybrid Sensor System co-PI, (with Z.Luo), £7,800, 2009-2010.

- Department for Environment, Food and Rural Affairs (Defra), Veterinary Laboratories Agency (VLA). Machine learning algorithms for analysis of large veterinary datasets; PI, £52,000, 2010–2013.

- BBSRC (and EU) programme: Living with uninvited guests: comparing plant and animal responses to endocytic invasions (ERASysBio). BBSRC project (with VLA, SGUL, Spain, Germany and France); co-PI; over £700,000 for RHUL part, 2010–2013. (total funding 5,200 000 euros).

- Zhejiang University, China: Machine learning methods for coal quaility analysis based on NIR technology, 2011-2013 (co-PI with Z.Luo).

- Thales UK; Development of automated methods for helping detection of anomalous behaviour. £85,000; 2012-2015.

- EPSRC: Mining the Network Behaviour of Bots (with L.Cavalarro, V.Vovk, H.Shanahan and Z.Luo); £680,623 from 1-06-13 for 3 years until 2016.

- EU Horizon 2020 grant: "Exascale Compound Activity Prediction Engine"; 2015 – 2018.

- AstraZeneca grant: Machine Learning for Drug Discovery, 2018–2020.

Other publications

- Learning by Support Vector Machine (with V. Vovk). Tutorial. Uxbridge, Middlesex: UNICOM Seminars Ltd., 1998.

Patents

Data classification apparatus and method thereof (with V. Vovk).

- European Patent Application No. 99 954 200.4: the application was allowed in July 2004.
- US Patent Application No. 09/831,262: allowed.