

# 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.Papadopoulos (eds). Measures of Complexity. Festschrift 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, 2016. 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. *The Computer Journal*, 2007, 50: 164-172; ii) Rejoinder Hedging Predictions in Machine Learning. *The 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*, vol.81, No.1-2, September – October 2017. 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.

**Refereed Book Chapters, Journal Papers,  
Conference Proceedings**

19. Alex Gammerman, Vladimir Vovk, Zhiyuan Luo, Harris Papadopoulos. Preface. *Proceedings of Machine Learning Research*; vol.60; PMLR 60:1-2; 2017.
20. Paolo Toccaceli and Alexander Gammerman. Combination of Conformal Predictors for Classification. *Proceedings of Machine Learning Research*; PMLR 60:39-61; 2017.

21. Denis Volkhonskiy, Evgeny Burnaev, Ilia Nouretdinov, Alexander Gammerman, Vladimir Vovk; *Proceedings of Machine Learning Research*; PMLR 60:132-153; 2017.
22. Paolo Toccaceli, Ilia Nouretdinov and Alexander Gammerman. Conformal prediction of biological activity of chemical compounds. *Annals of Mathematics and Artificial Intelligence*, vol.81, No.1-2; pp.105–124. DOI 10.1007/s10472-017-9556-8; 2017.
23. Criteria of efficiency for set-valued classification. V. Vovk, I. Nouretdinov, V. Fedorova, I. Petej, A. Gammerman. Criteria of efficiency for set-valued classification. *Annals of Mathematics and Artificial Intelligence*, vol.81, No.1–2; pp.21–46. DOI 10.1007/s10472-017-9557-7; 2017.
24. Alexander Gammerman and Vladimir Vovk. Foreword: conformal and probabilistic prediction with applications. *Annals of Mathematics and Artificial Intelligence*, vol.81, No.1-2; pp.1–3. DOI 10.1007/s10472-017-9557-7; 2017.
25. 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, 2016 Proceedings. Lecture Notes in Artificial Intelligence, Springer, 9653, 2016.
26. 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, 2016 Proceedings. Lecture Notes in Artificial Intelligence, Springer, 9653, 2016.
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28. 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, 2015, Springer LNAI Proceedings*. Gammerman, A., Vovk, V. & Papadopoulos, H. (eds.). Vol. 9047, p. 281-290; 2015.
29. 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 LNAI Proceedings 2015, Vol. 9047, p. 313-322 10 p.

30. Alexander Gammerman. Foreword to the book *Conformal Predictions for Reliable Machine Learning: Theory, Adaptations and Applications*; editors: Vineeth Balasubramanian, Shen-Shyang Ho, Vladimir Vovk. Springer, 2014.
31. 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.
32. 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.
33. Antonis Lambrou, Harris Papadopoulos, Ilia Nouretdinov, and Alexander Gammerman. Reliable probabilistic outputs for large datasets. *Annals of Mathematics and Artificial Intelligence*, Sept.2014.
34. 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, **Alex Gammerman**. Multiprobabilistic Prediction in Early Medical Diagnoses. *Annals of Mathematics and Artificial Intelligence*, Sept.2014.
35. 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.

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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. Iliadis, I.Magologiannis, Springer, 2013.

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37. 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.
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41. Olga Ivina, Ilia Nouretdinov, Alex Gammerman. Valid predictions with confidence estimation in air pollution problem. *Progress in Artificial Intelligence*, v.1, No.3, pp.235-243, 2012)
42. 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).
43. 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).
44. 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

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