

Selected Publications

Books

- A. Gammerman, (ed.) Probabilistic Reasoning and Bayesian Belief Networks. Alfred Waller, Henley-on-Thames, 1995.
- A. Gammerman, (ed.) Computational Learning and Probabilistic Reasoning. John Wiley & Sons, Chichester, 1996.
- A. Gammerman. Machine Learning: Progress and Prospects. ISBN 0 900145 93 5, 1997.
- A. Gammerman, (ed.) Causal Models and Intelligent Data Management. Springer-Verlag, 1999.
- V.Vovk, A.Gammerman and G.Shafer. Algorithmic learning in a random world. New York: Springer, 2005.
- A.Gammerman, (ed.) Artificial Intelligence and Applications, Proceedings of the Conference, ACTA Press, ISBN: 978-0-88986-709-3, 2008.

Special Issues of Journals

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

Refereed Book Chapters, Journal Papers, Conference Proceedings

- Predictions contolees en apprentissage automatique. *MODULAD Journal*, v.42pp.16-33, 2010, (with V.Vovk) - in French.
- On-line predictive linear regression. *Annals of Statistics*, Volume 37, Number 3 (2009), 1566-1590 (with V.Vovk and I.Nouretdinov). Permanent link to this document: <http://projecteuclid.org/euclid.aos/1239369032> Digital Object Identifier: doi:10.1214/08-AOS622.
- Machine Learning classification with confidence: application of transductive conformal predictors to MRI-based diagnostic and prognostic markers in depression. *NeuroImage Journal*, May 2010, doi:10.1016/j.neuroimage.2010.05.023,

(with I.Nouretdinov, S.Costafreda, A.Chervonenkis, V.Vovk, V.Vapnik and C.Fu).

- A New Bioinformatics Tool for Prediction with Confidence
2010 International Conference on Bioinformatics and Computational Biology (BIOCOMP'10) Proceedings, p. 24-26, 2010 (with Dmitry Devetyarov, Martin J. Woodward, Nicholas G. Coldham, Muna F. Anjum)
- Prediction with Confidence Based on a Random Forest Classifier.
Accepted for publication in The 6th IFIP International Conference on Artificial Intelligence Applications & Innovations, AIAI 2010,
- Assessment of stroke risk based on morphological ultrasound image analysis with conformal prediction.
Accepted for publication in The 6th IFIP International Conference on Artificial Intelligence Applications & Innovations, AIAI 2010, (with A.Lambrou, H.Papadopoulos, E.Kyriacou, C.Pattichis, A.Nicolaidis).
- Evolutionary Conformal Prediction for Breast Cancer Diagnosis. Accepted for publication in the 9th International Conference on Information Technology and Applications in Biomedicine (ITAB'09); (with A. Lambrou and H. Papadopoulos).
- Regression Conformal Prediction with Nearest Neighbours. Submitted to Journal of Artificial Intelligence Research (with Harris Papadopoulos and Volodya Vovk).
- Conditional prediction intervals for linear regression. 8th International Conference on Machine Learning and Applications - ICMLA 2009, Miami, Florida, 2009, (with V.Vovk, P.McCullagh, I.Nouretdinov and D.Devetyarov).
- Application of Inductive Confidence Machine to ICMLA-competition data. 8th International Conference on Machine Learning and Applications - ICMLA 2009, Miami, Florida, 2009, (with I.Nouretdinov and D.Devetyarov).
- Detection and Abundance Estimation of Material Classes from Airborne from LWIR Hyperspectral Data. EMRS DTC 6th Conference, Edinburgh, 2009 (with R.J.Richards and I.Nouretdinov).
- Confidence Machine and its application to Medical Diagnosis; Int.Conf.on Biological Computing (BioComp09), (with D.Devetyarov and I. Nouretdinov). July 2009, USA.
- 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.
Ali Tiss, Celia Smith, Dmitry Devetyarov, Aleksandra Gentry-Maharaj,

Stephane Camuzeaux, Brian Burford, Ilia Nouretdinov, Jeremy Ford, Zhiyuan Luo, John F. Timms, Ian Jacobs, Usha Menon and Rainer Cramer. Submitted to Clinical Chemistry.

- Proteomics analysis of ovarian cancer serum samples (Part 2): Serum MALDI-TOF MS profiling and CA125 immunoassay as diagnostic tools. John F. Timms¹, Rainer Cramer, Stephane Camuzeaux, Ali Tiss, Celia Smith, Brian Burford, Ilia Nouretdinov, Musarat Kabir, Aleksandra Gentry-Maharaj, Jeremy Ford, Zhiyuan Luo, Alex Gammerman, Usha Menon¹ and Ian Jacobs. Submitted to Clinical Chemistry.
- Online Prediction of Ovarian Cancer. Fedor Zhdanov, Vladimir Vovk, Brian Burford, Dmitry Devetyarov, Ilia Nouretdinov and Alex Gammerman. Lecture Notes in Computer Science Volume 5651/2009 Artificial Intelligence in Medicine DOI 10.1007/978-3-642-02976-9; 2009.
- Cancer informatics by prototype networks in mass spectrometry. Artificial Intelligence in Medicine 45(2-3): 215-228, 2009, (with F- M. Schleif, T. Willmann, M. Kostrzewa, B. Hammer).
- 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 (with H.Papadopoulos and V.Vovk).
- Serum proteomic abnormality predating screen detection of ovarian cancer (with 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). The Computer Journal Advance Access first published online on April 4, 2008 This version published online on April 9, 2008. The Computer Journal, doi:10.1093/comjnl/bxn021
- Predicting clinical outcome in patients diagnosed with synchronous ovarian and endometrial cancer. Ramus SJ, Elmasry K, Luo Z, Gammerman A, Lu K, Ayhan A, Singh N, McCluggage WG, Jacobs IJ, Whittaker JC, and Gayther SA Clinical cancer research : an official journal of the American Association for Cancer Research 14(18):5840-8, 2008 Sep 15
- 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 (with B.Ryabko and J.Astola).
- The Kernel Aggregating Algorithm for Regression. Submitted to Machine Learning journal (with S.Busutill, Y.Kalnishkan and V.Vovk)
- Normalized Nonconformity Measures for Regression Conformal Prediction. Artificial Intelligence and Applications - AIA 2008 Conference, Innsbruck, Austria, pp.64-69, 2008. (with H. Papadopoulos and V. Vovk).

- H. Papadopoulos, V. Vovk and A. Gammerman. Regression Conformal Prediction with Nearest Neighbours. Submitted to the Journal of Artificial Intelligence Research.
- A. Lambrou, H. Papadopoulos and A. Gammerman. Evolutionary Conformal Prediction for Breast Cancer Diagnosis. Submitted to the 9th International Conference on Information Technology and Applications in Biomedicine (ITAB'09).
- Hedging Predictions in Machine Learning. *The Computer Journal*, v.50, No.2, 151-163, March 2007 (with V.Vovk). The same journal also published:
 - i) Discussion on Hedging Predictions in Machine Learning by A. Gammerman and V. Vovk. *The Computer Journal*, 2007, 50: 164-172;
 - ii) Rejoinder Hedging Predictions in Machine Learning. *The Computer Journal*, 2007, 50: 173-177.
- 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.
- 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 (with S.Busutill and Y.Kalnishkan).
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- 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> (with B.Ryabko and J.Astola).
- Transductive Learning. *Joint 3rd International Conference on Soft Computing and Intelligent Systems and 7th International Symposium on Advanced Intelligent Systems*, CD, Tokyo, Japan, 2006.
- Reliable classification of childhood acute leukaemia from gene expression data using Confidence Machines. *IEEE International Conference on Granular Computing*, Atlanta, USA, 2006 (with Z.Luo and A.Bellotti).

- Qualified Predictions for Microarray and Proteomics Pattern Diagnostics with Confidence Machines, *International Journal of Neural Systems* vol.15, No.4, pp.247-258, 2005 (with A.Bellotti, Z.Luo, F.van Delft and V.Saha).
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- 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 (with I.Nouretdinov and V.Vovk)
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- 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).
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- Machine Learning Applications of Algorithmic Randomness. *Machine Learning, Proceedings of the Sixteen International Conference (ICML'99)*, 1999 (with V.Vovk and C.Saunders).
- Transduction with Confidence and Credibility. *Proceedings of the International Joint Conference on Artificial Intelligence*, Stockholm, Sweden, 1999 (with V.Vovk and C.Saunders). (Postscript)
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- Learning Algorithms in High Dimensional Space. *Causal Models and Intelligent Data Management*, Springer, 1999 (with V.Vovk).
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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; (with V.Vovk).
- *Data labelling apparatus and method thereof*. UK Patent Application GB 0017740.2: pending.

Selected Technical Reports

- 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.
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- 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.
- Support Vector Machine: Reference Manual (joint work with C. Saunders, M. O. Stitson, J. Weston, V. Vovk, and C. Watkins). Technical Report CSD-TR-98-03, Department of Computer Science, Royal Holloway, University of London, April 1998.
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- 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.
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