Anthony Constantinou

Curriculum Vitae, Apr 15th, 2025

Dual) Cypriot, British.

Aa Greek (Native), English (Fluent).

Queen Mary University of London, London, UK, E1 4NS.

WORK EXPERIENCE

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10/2009 – Present: QI	leen Mary University of London					
10/2022 – Present	Head of the MInDS (Machine Intelligence and Decision Systems) research group.					
08/2019 – Present	Senior Lecturer (Associate Prof) in Causal Machine Learning and Decision Systems.					
10/2018 – Present	Head of the <u>Bayesian Artificial Intelligence</u> lab.					
06/2018 – 06/2021	EPSRC Fellow, Principal Investigator on Bayesian AI for decision-making under uncertainty.					
10/2018 – 10/2020	Turing Fellow, The Alan Turing Institute.					
01/2017 – 08/2019	Lecturer (Assistant Prof) in Causal Machine Learning and Decision Systems.					
07/2014 – 01/2017	Post-Doctoral Research Assistant with the School of Electronic Engineering and Computer Science.					
09/2012 – 07/2014	Post-Doctoral Research Fellow with the Barts and The London School of Medicine and Dentistry.					
01/2010 – 05/2013	Teaching Assistant in Bayesian Decision & Risk Analysis (BSc & MSc), Software Engineering (BSc & MSc), and Procedural Programming (BSc).					
10/2009 – 09/2012	PhD student in Bayesian networks for prediction, risk assessment and decision making.					
2012 -2021: External	collaborations: Industry (Projects, software, and technical reports – not academic publications)					

- Agena Ltd (UK): Bayesian network technology and visualisation to solve complex risky problems and improve decision support for customers world-wide and across different industry sectors.
- 2015 2020 **Individuals** (UK and Singapore): Intelligent decision making in sports betting, including football, darts, tennis, and golf.
- **JFE Steel Corporation** (Japan): Reliability and risk management of steel production processes for the second largest Japanese steel manufacturer.
- 2015 2016 **Venture Sports & Events** (Thailand): Intelligent decision making in Asian Handicap betting in UK, EU, and Asian football betting markets.
- 2014 2016 **ICRAF World Agroforestry Centre** (Kenya): Decision and risk analysis in agricultural project management.

2014 - Present: External collaborations: Industry & Academic Institutions (Academic publications)

- 2024 Present **University of Milano Bicocca** (Italy): Casual discovery with missing data from multiple data sets with particle overlapping in endometrial cancer.
- 2023 Present Munster Technological University & Cork University Hospital (Ireland): Causal insights into gestational diabetes mellitus.
- 2022 Present University of Worcester (UK): Mixed evidence synthesis for building causal Bayesian networks for managing employee turnover.
 - 2022 2023 Indian Institute of Science Education and Research (India): Open problems in causal structure learning: A case study of COVID-19 in the UK
 - 2022 2023 Sharif University of Technology (Iran): Open problems in causal structure learning: A case study of COVID-19 in the UK
 - 2021 2022 **NHS Midlands and Lancashire Commissioning Support Unit Health Economics Unit** (UK): Structure learning to investigate the causes of sepsis.
 - 2019 2020 **OneWorld UK** (UK): Learning Bayesian networks from demographic and health survey data to explore the factors behind childhood diarrhoea in India.
 - 2014 2016 **ICRAF World Agroforestry Centre** (Kenya): Decision and risk analysis in agricultural project management.

2000 – 2002, 2004 – 2008: Various summer jobs as web developer and sales assistant.

Jul 2002 – Aug 2004: Military service, Greek-Cypriot National Guard.

QUALIFICATIONS

- 2019: Postgraduate Certificate (PGCert) in Academic Practice, Queen Mary University of London, UK.
- 2012: PhD in Bayesian Networks for Prediction, Risk Assessment and Decision making, University of London, UK.
- 2012: **Certificates** in Probabilistic Graphical Models, Game Theory, Model Thinking, Artificial Intelligence, and Machine Learning, Coursera.
- 2009: MSc (Distinction) in Artificial Intelligence with Robotics, University of Hertfordshire, UK.
- 2008: BSc (Hons) in Computer Science, University of Hertfordshire, UK.
- 2008: Certificate in CCNA Exploration: Network Fundamentals. Cisco Networking Academy.

HONOURS, AWARDS & GRANTS

- 2018 21: PI on EPSRC UKRI Innovation Fellowship project "<u>Bayesian Artificial Intelligence for Decision Making under Uncertainty</u>". EPSRC contribution £475,818. Full economic cost: £594,773. Grant Ref: <u>EP/S001646/1</u>. Project period: Jun 2018 to Jun 2021. Project description <u>PDF</u>.
- 2018 20: Appointed Turing Fellow by <u>The Alan Turing Institute</u> for two years. Contribution by the institute: 5% salary contribution per annum for research time plus allowance for travel. Grant Ref: <u>EP/N510129/1</u>.
 - 2018: Ranked 2nd in the international special issue competition Machine Learning for Soccer, hosted by the <u>Machine Learning</u> journal, and published a <u>paper</u> which describes the model.
- 2017 18: Our article "<u>Things to know about Bayesian networks</u>" ranked in the Top 20 most downloaded papers in <u>Significance</u> for two consecutive years, in 2017 and in 2018.
 - 2016: Selected to present at the <u>STEM for BRITAIN</u> research exhibition, Mathematical Sciences section, to the members of both Houses of Parliament held at the House of Commons, Parliament, Westminster, London, UK.
 - 2013: PhD thesis nominated by the School of EECS for the <u>CPHC/BCS Distinguished Dissertations 2013/2014 competition</u>, managed by *The council of Professors and Heads of Computing* (CPHC) and *British Computer Society* (BCS).
 - 2012: Grant of €1,000 by the <u>Open University of Cyprus</u> for collaboration on project "Management of Myocardial infarction patients in Cyprus, Greece and Albania: A regional comparative study".
 - 2012: <u>EPSRC</u> Knowledge Transfer Account (Scheme 1) funding for training and collaboration with industry during PhD studies. Project period: Jun to Sep 2012. Award amount: £4,798.
- 2009-12: Full 3.5-years PhD studentship by the <u>EPSRC</u>. The award covered PhD tuition fees, plus a yearly stipend of £15,590. 2009: Award of Distinction for MSc in Artificial Intelligence with Robotics by the University of Hertfordshire, UK.

RESEARCH SUPERVISION (only primary/first supervisions shown)

- 2024 Present: PhD Student (assumed supervision in the third year): Mr Zahir Nikraftar, Probabilistic Machine Learning in Climate Science.
- 2024 Present: Research Visitor (remote): Mr Nicholas Higgins, Using causal discovery to decode the game engine of Hattrick football manager. Visitor from Spain.
- 2024 Present: Doctoral Research Visitor (in-person): Mr Alessio Zanga, Casual discovery with missing data. Visitor from University of Milano Bicocca, Italy.
- 2023 Present: Doctoral Research Visitor (in-person and remote): Ms. Sheresh Zahoor, Causal structure learning in healthcare. Visitor from Munster Technological University, Cork, Ireland.
- 2022 Present: PhD Student: Mr Bruno Petrungaro, Causal structure learning in healthcare.
- 2020 Present: PhD Student: Dr. Neville Kenneth Kitson, Causal structure learning for Health Informatics.

2022 – 2024: **Doctoral Research Visitor (in-person and remote):** Ms. Eya Meddeb, Causal structure learning for employee turnover. Visitor from The University of Worcester, Worcester, UK.

2022 – 2023: **Research Visitor (remote):** Mr. Arian Hashemzade Amirkhizi, Causal structure learning. Visitor from Sharif University of Technology, Tehran, Iran.

- 2022 2023: **Research Visitor (remote):** Mr. Praharsh Nanavati, Causal structure learning. Visitor from the Indian Institute of Science Education and Research, Bhopal, India.
- 2019 2023: PhD Student (Graduated): Dr. Kiattikun Chobtham, Thesis (<u>link</u>): Bayesian network structure learning in the presence of latent variables.
- 2019 2023: PhD Student (Graduated): Dr. Yang Liu, Thesis (link): Bayesian network structure learning in the presence of data noise.
- 2019 2021: Post-Doctoral Researcher: Dr. Zhigao Guo, Causal structure learning for high dimensional problems.
- 2019 2020: **Post-Doctoral Visitor (in-person):** Dr. Neville Kenneth Kitson, Causal structure learning for Health Informatics.
- 2018 19: MRes/MSc by Research: Mr. Bo Peng, Causal structure learning.

SOFTWARE

2018 – Present: **Bayesys** (develop and maintain): An open-source Java implementation of Bayesian network structure learning algorithms, including methods that enable us to generate synthetic data, incorporate causal knowledge, evaluate learnt models, and perform causal inference.

[Link to the Java NetBeans project, user manual, and repository of data, case studies and models.]

REVIEWING, EDITORIAL & CONFERENCE ORGANISATION

07/2018 – Present: Associate College Member of the EPSRC

- 03/2018 Present: Editor of PLoS ONE
 - 2025: **Reviewer**, the 41st conference on Uncertainty in Artificial Intelligence 2025 (UAI–2025), Jul 21 25, 2025, Rio, Brasil.
 - 2024: Programme Committee, the 3rd Workshop on Artificial Intelligence for Healthcare, 23rd Int. Conference of the Italian Association for Artificial Intelligence 2024 (AlxIA–2024), 25–28 Nov, 2024, Bolzano, Italy.
 - 2024: Programme Committee, the 40th conference on Uncertainty in Artificial Intelligence 2024 (UAI–2024), Jul 15 19, 2024, Universitat Pompeu Fabra, Barcelona, Spain.
 - 2023: **Programme Committee**, the 2nd Workshop on Artificial Intelligence For Healthcare, 22nd International Conference of the Italian Association for Artificial Intelligence 2023 (AIxIA–2023), 6–9 Nov, 2023, Rome, Italy.
 - 2023: Programme Committee, the 39th conference on Uncertainty in Artificial Intelligence 2023 (UAI–2023), Jul 31 Aug 4, 2023, Carnegie Mellon University, Pittsburgh, PA, USA.
 - 2022: Programme Committee, the 38th conference on Uncertainty in Artificial Intelligence 2022 (UAI–2022), 1–5 Aug 2022, Eindhoven, The Netherlands.
 - 2022: Programme Committee, IEEE 2022 International Conference on Machine Learning and Applications (ICMLA-2022), 12-15 Dec, Nassau, The Bahamas.
 - 2021: Technical Programme Committee, IEEE 2021 International Conference on Machine Learning and Applications (ICMLA-2021), 13-16 Dec, California, USA.
 - 2021: **Programme Committee**, the 37th conference on Uncertainty in Artificial Intelligence 2021 (UAI–2021), 26–30 Jul 2021, Online.
 - 2018: Programme Committee, 5th Workshop on Machine Learning and Data Mining for Sports Analytics, European Conference on Machine Learning and Principles and Practice on Knowledge Discovery in Databases (ECML/PKDD), 10–14 Dec. 2018, Dublin, Ireland.
 - 2018: **Programme Committee**, 3rd International Conference on *Soft Computing and Data Mining*, 6–8 February 2018, Senai, Malaysia.
 - 2016: Invited Programme Participant, Probability and Statistics in Forensic Science, 18 Jul 21 Dec 2016, Isaac Newton Institute for Mathematical Sciences, University of Cambridge, England.

PEER-REVIEWING ACTIVITY: no. of funding proposals, PhD theses, conference and journal papers (excludes revisions).

#	Journal / Conference / Funding body		#	Journal / Conference / Funding body		
1:	PLoS ONE	24	43:	Engineering Applications of Artificial Intelligence	1	
2:	Conf. on Uncertainty in Artificial Intelligence (UAI)	16	44:	Journal of Risk and Reliability	1	
3:	Knowledge-Based Systems		45:	Housing Studies	1	
4:	Artificial Intelligence in Medicine	9	46:	Symmetry	1	
5:	IEEE Int. Conf. on Mach. Learn. and App. (ICMLA)	9	47:	International Journal of Sport Finance	1	
6:	Entropy	6	48:	Central European J. of Operations Research	1	
7:	Expert Systems with Applications	5	49:	Journal of Forensic Science and Legal Medicine	1	
8:	B: Workshop on AI For Healthcare (AIxIA)		50:	Journal of the Royal Society Interface		
9:	Journal of Quantitative Analysis in Sports	3	51:	Engineering Sustainability	1	
10:	Journal of the Operational Research Society		52:	European Journal of Operational Research		
11:	Examined PhD theses (excludes those supervised)		53:	European Journal of Applied Mathematics	1	
12:	IEEE Trans. on Knowledge and Data Engineering	3	54:	Current Bioinformatics	1	
13:	Int Journal of Approximate Reasoning		55:	Int. Conf. on Soft Comp. and Data Mining	1	
14:	International Journal of Forecasting		56:	Sports	1	
15:	Journal of the Royal Statistical Society		57:	Recent Patents on Computer Science	1	
16:	Information		58:	UK Research and Innovation NERC, UK	1	
17:	Decision Support Systems		59:	International Journal of Geo-Information	1	
18:	Scientific Reports (Nature)		60:	Medical Image Analysis (MedIA)		
19:	Workshop on ML and Data Mining for Sports An.		61:	Sustainability		
20:	Journal of Sports Sciences	2	62:	The Open Sports Sciences Journal		
21:	MRC (Medical Research Council), UK	2	63:	The Alan Turing Institute, UK		
22:	Neurocomputing	2	64:	Operations Research Perspectives		
23:	Royal Society, UK	2	65:	Int. Conf. on Comp. Sci. and App. Eng.		
24:	Data Mining and Knowledge Discovery 1		66:	Int. J. of Risk Assessment and Management		
25:	Machine Learning		67:	Int. J. of Sport Management and Marketing		
26:	IEEE Journal of Biomedical and Health Informatics	1	68:	Applied Economic Letters		
27:	Statistics and Computing		69:	Progress in Artificial Intelligence		
28:	Artificial Intelligence Review 1		70:	Journal of Forensic Psychiatry & Psychology	1	
29:	BMC Bioinformatics		71:	Applied Economics	1	
30:	Dutch Research Council (NOW), Netherlands		72:	Journal of Spons Analytics	1	
31:	PM L Papeliatrice Open	1	73:	Environments	1	
32.	Information Sciences	1	74.	4. James IE: Review of Rehavioral Financo		
۰در ۲۸۰	Journal of Applied Statistics	1	/5.		1	
25.	Journal of Applied Statistics	1		25		
36:	Computer Methods and Programs in Biomedicine	1		20		
37:	Quarterly Review of Economics and Finance	1				
38:	IMA Journal of Management Mathematics			15		
39:	Patterns	1		10		
40:	BMC Medical Informatics & Decision Making	1				
41:	ACM Trans. on Knowledge Discoverv from Data	1		5		
42:	BMC Medical Research Methodology	1				
-				2012 2013 2014 2015 2017 2017 2017 2017 2017 2017 2022 2023 2025 2025		

Up to date citation index since 2012 here								
			Google <i>h-index</i> :	23				
			Google i10-index:	40				
Publications are sorted by year as a <i>Journal</i> (J) or <i>arXiv</i> (A) paper, <i>Conference</i> (C), <i>Academic Technical Report</i> (TR), Industry Technical Report (ITR), or Thesis (T).								
2025	;							
Α	[1]	Constantinou, A., Higgins, N., and Kitson, N. K. (2025). Decoding the mechanisms of the Hattrick football manager game using Bayesian network structure learning for optimal decision-making. <u>arXiv:2504.09499</u> [cs.LG]						

- A [2] Kitson, N. K., and **Constantinou, A.** (2025). Stable Structure Learning with HC-Stable and Tabu-Stable Algorithms. arXiv:2504.01740 [cs.LG]
- J [3] Kitson, N. K., and **Constantinou, A.** (2025). Causal discovery using dynamically requested knowledge. *Knowledge-Based Systems*, Vol. 314, Article 113185. [Open-Access DOI]
- J [4] Constantinou, A. C, Kitson, N. K, and Zanga, A. (2025). Using GPT-4 to guide causal machine learning. *Expert* Systems with Applications, Vol. 268, Article 126120 [Open-Access DOI]
- J [5] Petrungaro, B., Kitson, N. K., and **Constantinou, A. C.** (2025). Investigating potential causes of Sepsis with Bayesian network structure learning. *Applied Intelligence*, Vol. 55, Article 496. [Open-Access DOI]

2024

- C [6] Kitson, N. K., and Constantinou, A. C. (2024). Eliminating Variable Order Instability in Greedy Score-Based Structure Learning. In Proceedings of The 12th International Conference on Probabilistic Graphical Models (PGM-2024), Proceedings of Machine Learning Research (PMLR), Vol. 246, pp. 1–17, Nijmegen, The Netherlands. [Proceedings Download]
- J [7] Kitson, N. K., and **Constantinou, A. C.** (2024). The Impact of Variable Ordering on Bayesian Network Structure Learning. *Data Mining and Knowledge Discovery*, Vol. 38, pp. 2545–2569. [Open-Access DOI]
- J [8] Chobtham, K., and Constantinou, A. C. (2024). Tuning structure learning algorithms with out-of-sample and resampling strategies. *Knowledge and Information Systems*, Vol. 66, pp. 4927–4955. [Open-Access DOI]
- A [9] Zahoor, S., **Constantinou, A.**, Curtis, T. M., and Hasanuzzaman, M. (2024). Investigating the validity of structure learning algorithms in identifying risk factors for intervention in patients with diabetes. <u>arXiv:2403.14327</u> [cs.LG]

- J [10] **Constantinou, A. C.**, Kitson, N. K., Liu, Y., Chobtham, K., Hashemzadeh, A., Nanavati, P. A., Mbuvha, R., and Petrungaro, B. (2023). Open problems in causal structure learning: A case study of COVID-19 in the UK. *Expert Systems with Application*, Vol. 234, Article 121069. [Open-Access DOI]
- **C** [11] Liu, Y., and **Constantinou, A.** (2023). Improving the imputation of missing data with Markov Blanket discovery. In *Proceedings of the 11th International Conference on Learning Representations (ICLR-2023)*, Kigali, Rwanda. [Proceedings download]
- J [12] Kitson, N. K., Constantinou, A., Guo, Z., Liu, Y., and Chobtham, K. (2023). A survey of Bayesian network structure learning. *Artificial Intelligence Review*, Vol. 56, pp. 8721–8814. [Open-Access DOI]

- J [13] **Constantinou, A. C.**, Guo, Z., and Kitson, N. K. (2023). The impact of prior knowledge on causal structure learning. *Knowledge and Information Systems*, Vol. 65, pp. 3385–3434. [Open-Access DOI]
- J [14] Okagbue, H. I., **Constantinou, A. C.**, Iyiola, T. P., and Adedotun, A. F. (2023). Statistical analysis of regional distribution of football clubs in English top flight league. *Advances and Applications in Statistics*, Vol. 87, Iss.1, pp. 43–60. [Open-Access DOI]

2022

- C [15] Chobtham, K., and Constantinou, A. C. (2022). Discovery and density estimation of latent confounders in Bayesian networks with evidence lower bound. In *Proceedings of the 11th International Conference on Probabilistic Graphical Models (PGM-2022)*, Almeria, Spain, Oct 2022. [PMLR Proceedings download]
- J [16] Liu, Y., and **Constantinou, A. C**. (2022). Greedy structure learning from data that contain systematic missing values. *Machine Learning*, Vol. 111, pp. 3867–3896. [Open-Access DOI]
- J [17] Constantinou, A. C., Liu, Y., Kitson, N. K., Chobtham, K., and Guo, Z. (2022). Effective and efficient structure learning with pruning and model averaging strategies. *International Journal of Approximate Reasoning*, Vol. 151, pp. 292–321. [Open-Access DOI]
- J [18] Liu, Y., Constantinou, A. C., and Guo, Z. (2022). Improving Bayesian network structure learning in the presence of measurement error. *Journal of Machine Learning Research*, Vol. 23, Iss. 324, pp. 1–28. [Open-Access DOI]
- J [19] Chobtham, K., Constantinou, A. C., and Kitson, N. K. (2021). Hybrid Bayesian network discovery with latent variables by scoring multiple interventions. *Data Mining and Knowledge Discovery*, Vol. 37, pp.476–520. [Open-Access DOI]
- A [20] Guo, Z. and Constantinou, A. C. (2022). Parallel Sampling for efficient high-dimensional Bayesian network structure learning. <u>arXiv:2202.09691</u> [cs.LG]
- J [21] **Constantinou, A.** (2022). Investigating the efficiency of the Asian handicap football betting market with ratings and Bayesian networks. *Journal of Sports Analytics*, Vol. 8, pp. 171–193. [Open-access DOI]

2021

- J [22] **Constantinou, A. C.**, Liu, Y., Chobtham, K., Guo, Z., and Kitson, N. K. (2021). Large-scale empirical validation of Bayesian Network structure learning algorithms with noisy data. *International Journal of Approximate Reasoning*, Vol. 131, pp. 151–188. [Open-access DOI]
- J [23] Kitson, N. K., & Constantinou, A. (2021). Learning Bayesian networks from demographic and health survey data. *Journal of Biomedical Informatics*, Vol. 113, Article 103588. [Open-access DOI]
- J [24] Constantinou, A. C. (2021). The importance of temporal information in Bayesian network structure learning. *Expert* Systems with Applications, Vol. 164, Article 113814. [Open-access DOI]

- J [25] Guo, Z. and Constantinou, A. C. (2020). Approximate learning of high dimensional Bayesian network structures via pruning of Candidate Parent Sets. *Entropy*, Vol. 22, Iss. 10, Article 1142 [Open-access DOI]
- C [26] Chobtham, K. and Constantinou, A. C. (2020). Bayesian network structure learning with causal effects in the presence of latent variables. In *Proceedings of the 10th International Conference on Probabilistic Graphical Models (PGM-2020)*, Aalborg, Denmark. [PMLR Proceedings download]
- J [27] Constantinou, A. C. (2020). Learning Bayesian Networks that enable full propagation of evidence. *IEEE Access*, Vol. 8, pp. 124845–124856. [Open-Access DOI]
- TR [28] Constantinou, A. C., Liu, Y., Chobtham, K., Guo, Z., and Kitson, N. K. (2020). The Bayesys data and Bayesian network repository. Bayesian AI lab, MInDS research group, Queen Mary University of London, London, UK. [Online]. Available: <u>http://bayesian-ai.eecs.qmul.ac.uk/bayesys/</u> and <u>http://www.bayesys.com</u>



- London, London, UK, [Online]. Available: http://bavesian-ai.eecs.gmul.ac.uk/bavesvs/ and http://www.bavesvs.com
- Α [32] Constantinou, A. (2019). Evaluating structure learning algorithms with a balanced scoring function. arXiv:1905.12666 [cs.LG].
- ITR [33] Constantinou, A. (2019). Rating-based Golf Tournament Simulation. Deliverable Technical Report under Collaboration NO:24.20181101.
- J Constantinou, A. (2019). Dolores: A model that predicts football match outcomes from all over the world. Machine [34] Learning, pp. Vol. 108, pp. 49–75. [DOI]

Dolores ranked 2nd in the international special issue competition Machine Learning for Soccer.

2018

.1

- Constantinou, A., Fenton, N., & Neil, M. (2018). How do some Bayesian Network machine learned graphs compare to Α [35] causal knowledge? arXiv:2101.10461 [cs.Al]
- ITR Constantinou, A. (2018). As assessment of set-based ratings in capturing player ability in tennis. Deliverable Technical [36] Report under Collaboration NO:23.20180911.
- TR [37] Constantinou, A. (2018). Bayesian Artificial Intelligence for Decision Making under Uncertainty. Engineering and Physical Sciences Research Council, EP/S001646/1. [PDF]
- Constantinou, A., & Fenton, N. (2018). Things to know about Bayesian Networks. Significance, Vol. 15, Iss. 2, pp. 19-J [38] 23. [Open Access DOI]

Top 20 most downloaded paper in Significance for 2017 and 2018.

- ITR [39] Constantinou, A. (2018). Tennis player ratings based on points won and lost when serving and returning. Deliverable Technical Report under Collaboration NO:22.20180524.
- Yet, B., Neil, M., Fenton, N., Constantinou, A., & Dementiev, E. (2018). An Improved Method for Solving Hybrid [40] J Influence Diagrams. International Journal of Approximate Reasoning, Vol. 95, pp. 93–112. [DOI]
- [41] Yet, B., Constantinou, A., Fenton, N., & Neil, M. (2018). Expected Value of Partial Perfect Information in Hybrid Models J using Dynamic Discretization. IEEE Access, Vol. 6, pp. 7802-7817. [DOI]
- ITR [42] Constantinou, A. (2018). Temporal modelling and match prediction in Darts. Deliverable Technical Report under Collaboration NO:21.20171114.

- Fenton, N., Constantinou, A., & Neil, M. (2017). Combining judgments with messy data to build Bayesian Network С [43] models for improved intelligence analysis and decision support. In Proceedings of the 26th conference on Subjective Probability, Utility and Decision Making (SPUDM 26), Haifa, Israel, August 20-24. [long abstract, slides]
- J [44] Constantinou, A. C., & Fenton, N. (2017). The future of the London Buy-To-Let property market: Simulation with Temporal Bayesian Networks. PLoS ONE, 12(6): e0179297 [Open Access DOI]
 - [45] Constantinou, A., & Fenton, N. (2017). Towards Smart-Data: Improving predictive accuracy in long-term football team

performance. Knowledge-Based Systems, Vol. 124, pp 93-104. [DOI]

- C [46] Constantinou, A., & Fenton, N. (2016). Improving predictive accuracy using Smart-Data rather than Big-Data: A case study of soccer teams' evolving performance. In Proceedings of the 13th UAI Bayesian Modeling Applications Workshop (BMAW 2016), 32nd Conference on Uncertainty in Artificial Intelligence (UAI 2016), New York City, USA, June 25-29, 2016, pp. 54–59. [extended abstract, slides]
- J [47] Constantinou, A., Fenton, N., & Neil, M. (2016). Integrating expert knowledge with data in causal probabilistic networks: Preserving data-driven expectations when the expert variables remain unobserved. *Expert Systems with Applications*, Vol. 56, pp. 197–208. [DOI]
- J [48] Fenton, N., Neil, M., Lagnado, D., Marsh, W., Yet, B., & Constantinou, A. (2016). How to model mutually exclusive events based on independent causal pathways in Bayesian network models. *Knowledge-Based Systems*, Vol. 113, 39– 50. [Open Access DOI, PDF]
- ITR [49] Constantinou, A. (2016). Generic Bayesian football predictions based on discrepancies in strength between adversaries. Deliverable Technical Report for Venture Sports & Events Co. Ltd under Collaboration NO:20.SPORTS-BETTING.09/05/2016.
- J [50] Constantinou, A., Fenton, N., Marsh, W. & Radlinski, L. (2016). From complex questionnaire and interviewing data to intelligent Bayesian models for medical decision support. *Artificial Intelligence in Medicine*, Vol. 60, pp. 75–93. [DOI]
- J [51] Yet, B., **Constantinou, A.**, Fenton, N., Neil, M., Luedeling, E., & Shepherd, K. (2016). A Bayesian Network Framework for Project Cost, Benefit and Risk Analysis with an Agricultural Development Case Study. *Expert Systems with Applications*, Vol. 60, 141–155. [DOI].
- ITR [52] Constantinou, A. (2016). Bayesian modelling and dynamic ratings for national football team assessment: The case of EURO 2016. Deliverable Technical Report for Venture Sports & Events Co. Ltd under Collaboration NO:20.SPORTS-BETTING.09/05/2016.
- J [53] **Constantinou, A.**, Yet, B., Fenton, N., Neil, M., & Marsh, W. (2016). Value of Information analysis for Interventional and Counterfactual Bayesian networks in Forensic Medical Sciences. *Artificial Intelligence in Medicine*, Vol. 66, pp. 41–52. [DOI].
- C [54] Constantinou, A., & Fenton, N. (2016). Smart data not just big data: Real-world decision making with Bayesian networks. SETforBRITAIN 2016, Engineering and Mathematical Sciences Exhibition, House of Commons, Parliament, Westminster, London, UK, March 7, 2016. [poster]
- J [55] Coid, J. W., Ullrich S., Kallis, C., Freestone, M., Gonzalez, R., et al. (2016). Improving risk management for violence in mental health services: a multimethods approach. *Programme Grants for Applied Research*, Vol. 4, Iss. 16. [DOI].
- **ITR** [56] **Constantinou, A.** (2016). Extending Bayesian Networks and Dynamic Rating Systems to the German, French and Spanish football leagues. *Deliverable Technical Report for Venture Sports & Events Co. Ltd under Collaboration* NO:19.SPORTS-BETTING.26/02/2016.
- **ITR** [57] **Constantinou, A.** (2016). An expert's guide to providing subjective inputs for Bayesian Network football models. *Deliverable Technical Report for Venture Sports & Events Co. Ltd under Collaboration NO:19.SPORTS-BETTING.26/02/2016.*
- **TR** [58] **Constantinou, A.**, Fenton, N., Marsh, W., & Radlinski, L. (2016). From complex questionnaires and interviewing data to intelligent Bayesian Network models. *Atlas of Science*, 2016. [Online, PDF].
- **ITR** [59] **Constantinou, A.** (2016). Algorithmic rating for determining the current level of football team performance. *Deliverable Technical Report for Venture Sports & Events Co. Ltd under Collaboration NO:18.SPORTS-BETTING.17/11/2015.*
- **ITR** [60] **Constantinou, A.** (2016). Bayesian network modelling for betting decision making of the Under/Over 2.5 Goals Scored outcomes. *Deliverable Technical Report for Venture Sports & Events Co. Ltd under Collaboration NO:18.SPORTS-BETTING.17/11/2015.*

2015

- TR [61] Fenton, N., Neil, M., & Constantinou, A. (2015). Simpson's Paradox and the implications for medical trials. <u>arXiv:1912.01422</u> [stat.ME].
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