

# Anthony Constantinou

Curriculum Vitae, Dec 7<sup>th</sup>, 2023

🇨🇵 (Dual) Cypriot, British.  
🇬🇷 Greek (Native), English (Fluent).  
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## WORK EXPERIENCE

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### 10/2009 – Present: **Queen 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 [Bayesian Artificial Intelligence](#) 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.

### 2014 - Present: **Collaborations with industry (Projects, software, and/or technical reports)**

2012 – 2021 **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.  
2017 – 2018 **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: **Collaborations with industry and external institutions (Papers)**

2023 – Present **Munster Technological University** (Ireland): Investigating the validity of structure learning algorithms in identifying risk factors for intervention in patients with diabetes.  
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

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- 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

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- 2018 – 21: Principal Investigator on EPSRC UKRI Innovation Fellowship project "[Bayesian Artificial Intelligence for Decision Making under Uncertainty](#)". EPSRC contribution £475,818. Full economic cost: £594,773. Grant Ref: [EP/S001646/1](#). Project period: Jun 2018 to Jun 2021. Project description [PDF](#).
- 2018 – 20: Appointed Turing Fellow by [The Alan Turing Institute](#) for two years. Contribution by the institute: 5% salary contribution per annum for research time plus allowance for travel. Grant Ref: [EP/N510129/1](#).
  - 2018: Ranked 2<sup>nd</sup> in the international special issue competition *Machine Learning for Soccer*, hosted by the [Machine Learning](#) journal, and published a [paper](#) which describes the model.
- 2017 – 18: Our article "[Things to know about Bayesian networks](#)" ranked in the Top 20 most downloaded papers in [Significance](#) for two consecutive years, in 2017 and in 2018.
  - 2016: Selected to present at the [STEM for BRITAIN](#) 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 [CPHC/BCS Distinguished Dissertations 2013/2014 competition](#), managed by *The council of Professors and Heads of Computing* (CPHC) and *British Computer Society* (BCS).
  - 2012: Grant of €1,000 by the [Open University of Cyprus](#) for collaboration on project "*Management of Myocardial infarction patients in Cyprus, Greece and Albania: A regional comparative study*".
  - 2012: [EPSRC Knowledge Transfer Account](#) (Scheme 1) funding for training and collaboration with industry during PhD studies. Project period: Jun to Sep 2012. Funding: £4,798.
- 2009-12: Full 3.5-years PhD studentship by the [EPSRC](#). 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

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### Supervision (only primary/first supervisions shown):

- 2023 – Present: **Doctoral Research Visitor:** Ms. Sheresh Zahoor, Causal structure learning in healthcare. Visitor from Munster Technological University, Cork, Ireland.
- 2022 – Present: **PhD Student:** Mr Bruno Petrunaro, Causal structure learning in healthcare.
- 2022 – Present: **Doctoral Research Visitor:** Ms. Eya Meddeb, Causal structure learning for employee turnover. Visitor from The University of Worcester, Worcester, UK.
- 2020 – Present: **PhD Student:** Dr. Neville Kenneth Kitson, Causal structure learning for Health Informatics.
  - 2022 – 2023: **Research Visitor:** Mr. Arian Hashemzade Amirkhizi, Causal structure learning. Visitor from Sharif University of Technology, Tehran, Iran.
  - 2022 – 2023: **Research Visitor:** 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, Causal structure learning in the presence of latent variables.
- 2019 – 2023: **PhD Student (Graduated):** Dr. Yang Liu, Causal structure learning in the presence of measurement error.
- 2019 – 2021: **Post-Doctoral Researcher:** Dr. Zhigao Guo, Causal structure learning for high dimensional problems.
- 2019 – 2020: **Post-Doctoral Visitor:** Dr. Neville Kenneth Kitson, Causal structure learning for Health Informatics.
  - 2018 –19: **MSc by Research:** Mr. Bo Peng, Causal structure learning.

## SOFTWARE

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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

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07/2018 – Present: Associate College Member of the [EPSRC](#)

03/2018 – Present: Editor of [PLoS ONE](#)

2023: Programme Committee, *the 2<sup>nd</sup> Workshop on Artificial Intelligence For Healthcare, 22<sup>nd</sup> International Conference of the Italian Association for Artificial Intelligence 2023 (AixIA-2023)*, 6–9 Nov, 2023, Rome, Italy.

2023: Programme Committee, *the 39<sup>th</sup> conference on Uncertainty in Artificial Intelligence 2023 (UAI-2023)*, Jul 31 – Aug 4, 2023, Carnegie Mellon University, Pittsburgh, PA, USA.

2022: Programme Committee, *the 38<sup>th</sup> 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 37<sup>th</sup> conference on Uncertainty in Artificial Intelligence 2021 (UAI-2021)*, 26–30 Jul 2021, Online.

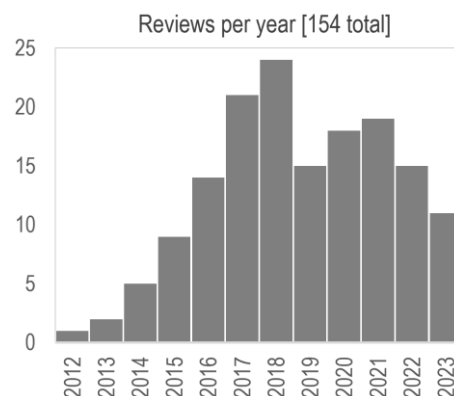
2018: Programme Committee, *5<sup>th</sup> Workshop on Machine Learning and Data Mining for Sports Analytics, European Conference on Machine Learning and Principles and Practice on Knowledge Discovery in Databases (ECML/PKDD)*, 10–14 Dec. 2018, Dublin, Ireland.

2018: Programme Committee, *3<sup>rd</sup> 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	41: Engineering Applications of Artificial Intelligence
2:	Knowledge-Based Systems	10	42: Journal of Risk and Reliability
3:	IEEE Int. Conf. on Mach. Learn. and App. (ICMLA)	9	43: Housing Studies
4:	Artificial Intelligence in Medicine	9	44: Symmetry
5:	Conf. on Uncertainty in Artificial Intelligence (UAI)	7	45: International Journal of Sport Finance
6:	Expert Systems with Applications	5	46: Central European J. of Operations Research
7:	Entropy	5	47: Journal of Forensic Science and Legal Medicine
8:	International Journal of Forecasting	3	48: Journal of the Royal Society Interface
9:	Journal of Quantitative Analysis in Sports	3	49: Engineering Sustainability
10:	Journal of the Operational Research Society	3	50: European Journal of Operational Research
11:	Examined PhD theses (excludes those I supervised)	3	51: European Journal of Applied Mathematics
12:	IEEE Trans. on Knowledge and Data Engineering	3	52: Current Bioinformatics
13:	Int Journal of Approximate Reasoning	3	53: 3 <sup>rd</sup> Int. Conf. on Soft Comp. and Data Mining
14:	2nd AIxIA Workshop on AI For Healthcare	3	54: Sports
15:	Journal of the Royal Statistical Society	2	55: Recent Patents on Computer Science
16:	Information	2	56: UK Research and Innovation NERC, UK
17:	Decision Support Systems	2	57: International Journal of Geo-Information
18:	Scientific Reports (Nature)	2	58: Medical Image Analysis (MEDIA)
19:	5 <sup>th</sup> Workshop on ML and Data Mining for Sports An.	2	59: Sustainability
20:	Journal of Sports Sciences	2	60: The Open Sports Sciences Journal
21:	MRC (Medical Research Council), UK	2	61: The Alan Turing Institute, UK
22:	Data Mining and Knowledge Discovery	1	62: Operations Research Perspectives
23:	Machine Learning	1	63: 2 <sup>nd</sup> Int. Conf. on Comp. Sci. and App. Eng.
24:	IEEE Journal of Biomedical and Health Informatics	1	64: Int. J. of Risk Assessment and Management
25:	Statistics and Computing	1	65: Int. J. of Sport Management and Marketing
26:	Artificial Intelligence Review	1	66: Applied Economic Letters
27:	BMC Bioinformatics	1	67: Journal of Forensic Psychiatry & Psychology
28:	Neurocomputing	1	68: Applied Economics
29:	Dutch Research Council (NOW), Netherlands	1	69: Journal of Sports Analytics
30:	National Science Foundation (NSF), USA	1	70: Environments
31:	BMJ Paediatrics Open	1	71: Games
32:	Journal of Applied Statistics	1	
33:	Journal of Forecasting	1	
34:	Computer Methods and Programs in Biomedicine	1	
35:	Quarterly Review of Economics and Finance	1	
36:	IMA Journal of Management Mathematics	1	
37:	Patterns	1	
38:	BMC Medical Informatics & Decision Making	1	
39:	ACM Trans. on Knowledge Discovery from Data	1	
40:	BMC Medical Research Methodology	1	



## PUBLICATIONS

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Up to date citation index since 2012 [here](#)

Google <i>h</i> -index:	19
Google <i>i10</i> -index:	33

Publications are sorted by year as a Journal (**J**) or arXiv (**A**) paper, Conference (**C**), Academic Technical Report (**TR**), Industry Technical Report (**ITR**), or Thesis (**T**).

2023

- A** [1] Kitson, N. K., and **Constantinou, A.** (2023). Causal discovery using dynamically requested knowledge. [arXiv:2310.11154](#) [cs.AI].
- A** [2] Chobtham, K., and **Constantinou, A. C.** (2023). Tuning structure learning algorithms with out-of-sample and resampling strategies. [arXiv:2306.13932](#) [cs.LG]
- J** [3] **Constantinou, A. C.**, Kitson, N. K., Liu, Y., Chobtham, K., Hashemzadeh, A., Nanavati, P. A., Mbuva, R., and Petrunaro, 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** [4] Liu, Y., and **Constantinou, A.** (2023). Improving the imputation of missing data with Markov Blanket discovery. In *Proceedings of the 11<sup>th</sup> International Conference on Learning Representations (ICLR-2023)*, Kigali, Rwanda. [\[Proceedings download\]](#)
- J** [5] 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** [6] **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** [7] 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

- A** [8] Kitson, N. K., and **Constantinou, A. C.** (2022). The Impact of Variable Ordering on Bayesian Network Structure Learning. [arXiv:2206.08952](#) [cs.LG].
- C** [9] 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 11<sup>th</sup> International Conference on Probabilistic Graphical Models (PGM-2022)*, Almeria, Spain, Oct 2022. [\[PMLR Proceedings download\]](#)
- J** [10] 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** [11] **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** [12] 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** [13] 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** [14] Guo, Z. and **Constantinou, A. C.** (2022). Parallel Sampling for efficient high-dimensional Bayesian network structure learning. [arXiv:2202.09691](https://arxiv.org/abs/2202.09691) [cs.LG]

**J** [15] **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** [16] **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** [17] 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** [18] **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](#)]

2020

**J** [19] 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** [20] Chobtham, K. and **Constantinou, A. C.** (2020). Bayesian network structure learning with causal effects in the presence of latent variables. In *Proceedings of the 10<sup>th</sup> International Conference on Probabilistic Graphical Models (PGM-2020)*, Aalborg, Denmark. [[PMLR Proceedings download](#)]

**J** [21] **Constantinou, A. C.** (2020). Learning Bayesian Networks that enable full propagation of evidence. *IEEE Access*, Vol. 8, pp. 124845–124856. [[Open-Access DOI](#)]

**TR** [22] **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: <http://bayesian-ai.eecs.qmul.ac.uk/bayesys/> and <http://www.bayesys.com>

**J** [23] Fenton, N., Neil, M., & **Constantinou, A.** (2020). The Book of Why: The New Science of Cause and Effect, Judea Pearl, Dana Mackenzie, Basic Books (2018). *Artificial Intelligence*, Vol. 284, Article 103286. [[DOI](#)]

**J** [24] **Constantinou, A. C.** (2020). Learning Bayesian Networks with the Saiyan Algorithm. *ACM Transactions on Knowledge Discovery from Data*, Vol. 14, Iss. 4, Article 44. [[DOI](#)]

2019

**TR** [25] **Constantinou, A.** (2019). The Bayesys user manual. Bayesian AI lab, MInDS research group, Queen Mary University of London, London, UK. [Online]. Available: <http://bayesian-ai.eecs.qmul.ac.uk/bayesys/> and <http://www.bayesys.com>

**A** [26] **Constantinou, A.** (2019). Evaluating structure learning algorithms with a balanced scoring function. [arXiv:1905.12666](https://arxiv.org/abs/1905.12666) [cs.LG].

**ITR** [27] **Constantinou, A.** (2019). Rating-based Golf Tournament Simulation. *Deliverable Technical Report under Collaboration NO:24.20181101*.

2018

**A** [28] **Constantinou, A.**, Fenton, N., & Neil, M. (2018). How do some Bayesian Network machine learned graphs compare to causal knowledge? [arXiv:2101.10461](https://arxiv.org/abs/2101.10461) [cs.AI]

**ITR** [29] **Constantinou, A.** (2018). As assessment of set-based ratings in capturing player ability in tennis. *Deliverable Technical Report under Collaboration NO:23.20180911*.



- TR** [30] **Constantinou, A.** (2018). Bayesian Artificial Intelligence for Decision Making under Uncertainty. *Engineering and Physical Sciences Research Council*, [EP/S001646/1](#). [\[PDF\]](#)
- J** [31] **Constantinou, A.** (2018). Dolores: A model that predicts football match outcomes from all over the world. *Machine Learning*, pp. 1–27. [\[DOI\]](#)
- Dolores ranked 2<sup>nd</sup> in the international special issue competition Machine Learning for Soccer. Discussed in Prof. Fenton's [Probability and Risk](#) blog.*
- J** [32] **Constantinou, A., & Fenton, N.** (2018). Things to know about Bayesian Networks. *Significance*, Vol. 15, Iss. 2, pp. 19–23. [\[Open Access DOI\]](#)
- Top 20 most downloaded paper in [Significance](#) for 2017 and 2018.*
- ITR** [33] **Constantinou, A.** (2018). Tennis player ratings based on points won and lost when serving and returning. *Deliverable Technical Report under Collaboration NO:22.20180524*.
- J** [34] Yet, B., Neil, M., Fenton, N., **Constantinou, A.**, & Dementiev, E. (2018). An Improved Method for Solving Hybrid Influence Diagrams. *International Journal of Approximate Reasoning*, Vol. 95, pp. 93–112. [\[DOI\]](#)
- J** [35] Yet, B., **Constantinou, A.**, Fenton, N., & Neil, M. (2018). Expected Value of Partial Perfect Information in Hybrid Models using Dynamic Discretization. *IEEE Access*, Vol. 6, pp. 7802–7817. [\[DOI\]](#)
- ITR** [36] **Constantinou, A.** (2018). Temporal modelling and match prediction in Darts. *Deliverable Technical Report under Collaboration NO:21.20171114*.

2017

- C** [37] Fenton, N., **Constantinou, A.**, & Neil, M. (2017). Combining judgments with messy data to build Bayesian Network models for improved intelligence analysis and decision support. In *Proceedings of the 26<sup>th</sup> conference on Subjective Probability, Utility and Decision Making (SPUDM 26)*, Haifa, Israel, August 20-24. [\[long abstract, slides\]](#)
- J** [38] **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 [\[Open Access DOI\]](#)
- J** [39] **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. [\[DOI\]](#)

2016

- C** [40] **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 13<sup>th</sup> UAI Bayesian Modeling Applications Workshop (BMAW 2016), 32<sup>nd</sup> Conference on Uncertainty in Artificial Intelligence (UAI 2016)*, New York City, USA, June 25-29, 2016, pp. 54–59. [\[extended abstract, slides\]](#)
- J** [41] **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** [42] 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** [43] **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** [44] **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. [\[DOI\]](#)

Discussed in [Atlas of Science](#). Also discussed in Prof. Fenton's [Probability and Risk](#) blog.

- J [45] 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. [\[DOI\]](#).

Discussed in [CGIAR Water, Land and Ecosystems \(WLE\)](#).

- ITR [46] **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 [47] **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. [\[DOI\]](#).

Discussed in [Atlas of Science](#) and in Prof. Fenton's [Probability and Risk](#) blog.

- C [48] **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 [49] 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 [50] **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 [51] **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 [52] **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 [53] **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 [54] **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 [55] Fenton, N., Neil, M., & **Constantinou, A.** (2015). Simpson's Paradox and the implications for medical trials. [arXiv:1912.01422](#) [stat.ME].

- J [56] **Constantinou, A.**, Freestone, M., Marsh, W., & Coid, J. (2015). Causal inference for violence risk management and decision support in Forensic Psychiatry. *Decision Support Systems*, Vol. 80, pp. 42–55. [\[DOI\]](#).

- J [57] **Constantinou, A.**, Freestone, M. F., Marsh, W., Coid, J., & Fenton, N. (2015). Risk assessment and risk management of violent reoffending among prisoners. *Expert Systems with Applications*, Vol. 42, Iss. 21, pp. 7511–7529. [\[DOI\]](#).

Discussed in Prof. Fenton's [Probability and Risk](#) blog.

- C [58] Yet, B., **Constantinou, A.**, Fenton, N., Neil, M., Luedeling, E., & Shepherd, K. (2015). Project Cost, Benefit and Risk Analysis using Bayesian Networks. In *Proceedings of the 12th UAI Bayesian Modeling Applications Workshop, 31st Conference on Uncertainty in Artificial Intelligence (UAI 2015)*, Amsterdam, Netherlands, July 12-16, 2015. [\[Abstract\]](#)



- ITR [59] **Constantinou, A.** (2015). Managing the risk of model overfitting when parameterising complex Bayesian networks with football data. *Deliverable Technical Report for Venture Sports & Events Co. Ltd under Collaboration NO:18.SPORTS-BETTING.17/11/2015.*
- TR [60] **Constantinou, A.,** Yet, B., Fenton, N., Neil, M., & Marsh, W. (2015). What is the value of missing information when assessing decisions that involve actions for intervention? *Atlas of Science*, 2015. [[Online](#), [PDF](#)].
- ITR [61] **Constantinou, A.** (2015). Bayesian network modelling for football match prediction of the Asian Handicap odds. *Deliverable Technical Report for Venture Sports & Events Co. Ltd under Collaboration NO:17.BETTING.21/7/2015.*
- ITR [62] **Constantinou, A.,** Yet, B., Fenton, N., & Neil, M. (2015). Bayesian Modelling Framework for Planning and Evaluating Agricultural Development Projects. *Final Deliverable Report by Agena Ltd for ICRAF under Collaboration SD4/2012/214.*

2014

- TR [63] Coid, J. W., Ullrich, S., Kallis, C., Freestone, M., Gonzalez, R., Bui, L., Igoumenou, A., **Constantinou, A.,** Fenton, N., Marsh, W., Yang, M., DeStavola, B., Hu, J., Shaw, J., Doyle, M., Archer-Power, L., Davoren, M., Osumili, B., McCrone, P., Barrett, K., Hindle, D., Bebbington P. (2014). Improving Risk Management in Mental Health Services – A Multi-Methods Approach. *The National Institute for Health Research (NIHR) PGfAR Report*, UK 2014.
- C [64] Marsh, W., **Constantinou, A.,** Yet, B., & Fenton, N. (2014). Evidence synthesis for patient-specific decision support using Bayesian networks. *Life Sciences Conference: Population Health in a Post-Genomic Era*, London, UK, December 2014.
- J [65] **Constantinou, A.,** Fenton, N. E., & Pollock, L. J. H. (2014). Bayesian networks for unbiased assessment of referee bias in Association Football. *Psychology of Sport and Exercise*, Vol. 15, Iss. 5, pp. 538–547. [[DOI](#)].  
  
*Discussed in [The Huffington Post](#) and in [Football Perspectives](#). Also discussed in Prof. Fenton's [Probability and Risk](#) blog.*
- C [66] **Constantinou, A.,** Freestone, M., & Coid, J. W. (2014). Development of a Bayesian network for violence risk management. *14th Annual Meeting of the International Association of Forensic Mental Health Services (IAFMHS)*, Toronto, Canada. June 2014.
- C [67] Coid, J. W., **Constantinou, A.,** Freestone, M., Kallis, C., & Bui, L. (2014). Causal models for violence risk assessment and management: a new paradigm. *14th Annual Meeting of the International Association of Forensic Mental Health Services (IAFMHS)*, Toronto, Canada. June 2014.
- C [68] **Constantinou, A.,** Freestone, M., & Coid, J. W. (2014). Using causal inference in risk analysis of violent re-offending among UK prisoners. *15th Annual Conference of the British and Irish Group for the Study of Personality Disorder (BIGSPD)*, Lincoln, UK. February 2014.
- TR [69] **Constantinou, A.,** Fenton, N. E., & Pollock, L. J. H. (2014). Bayesian networks for unbiased assessment of referee bias in football. *Football Perspectives*, 4 July, 2014 [[Online](#)].

2013

- J [70] **Constantinou, A.,** & Fenton, N. E. (2013). Profiting from arbitrage and odds biases of the European gambling market. *The Journal of Gambling Business and Economics*, Vol. 7, Iss. 2, pp. 41–70. [[PDF](#)]
- TR [71] **Constantinou, A.** (2013). Football: Win, Lose or Draw? *Computer Science For Fun (CS4FN)* [[Online](#)].
- J [72] **Constantinou, A.,** Fenton, N. E., & Neil, M. (2013). Profiting from an Inefficient Association Football Gambling Market: Prediction, Risk and Uncertainty Using Bayesian Networks. *Knowledge-Based Systems*, Vol. 50, pp. 60–86. [[Open Access DOI](#)].  
  
*Dedicated website: [PI-Football](#).*
- J [73] **Constantinou, A.,** & Fenton, N. E. (2013). Determining the level of ability of football teams by dynamic ratings based on

the relative discrepancies in scores between adversaries. *Journal of Quantitative Analysis in Sports*, Vol. 9, Iss. 1, pp. 37–50. [\[DOI\]](#).

Dedicated website: [PI-Football](#). Also discussed in Jona's [Opisthokonta](#) blog.

2012 (prior and during PhD)

- |     |  |
|-----|--|
| T   | [74] <b>Constantinou, A.</b> (2012). Bayesian Networks for Prediction, Risk Assessment and Decision Making in an inefficient Association Football gambling market. Ph.D Thesis, Risk & Information Management Research Group, School of Electronic Engineering and Computer Science, Queen Mary, University of London. Primary Supervision: <a href="#">Prof. Norman Fenton</a> , Secondary Supervision: Prof. Martin Neil. September 2012. <a href="#">[Original version]</a> <a href="#">[Restructured version]</a> (easier to read)]. |
| ITR | [75] <b>Constantinou, A.</b> (2012). Professional business models based on football match odds. Technical Report for Agena Ltd, London, UK. August 2012.   |
| J   | [76] <b>Constantinou, A.</b> , Fenton, N. E., & Neil, M. (2012). pi-football: A Bayesian network model for forecasting Association Football match outcomes. <i>Knowledge-Based Systems</i> , Vol. 36, pp. 322–339. <a href="#">[DOI]</a> .<br><br><i>Discussed in <a href="#">CS4FN</a>. Dedicated website: <a href="#">PI-Football</a>.</i>   |
| J   | [77] <b>Constantinou, A.</b> , & Fenton, N. E. (2012). Solving the Problem of Inadequate Scoring Rules for Assessing Probabilistic Football Forecast Models. <i>Journal of Quantitative Analysis in Sports</i> , Vol. 8, Iss. 1, Article 1. <a href="#">[DOI]</a> .<br><br><i>Discussed in Jona's <a href="#">Opisthokonta</a> blog</i>  |
| T   | [78] <b>Constantinou, A.</b> (2009). Mathematical study of rational behaviour in Poker. MSc Thesis. Developed using C++. Department of Engineering and Information Sciences, University of Hertfordshire, UK, Supervised by <a href="#">Prof Daniel Polani</a> . Grade: A.   |
| T   | [79] <b>Constantinou, A.</b> (2008). Alpha-Beta in Computational Chess. BSc Final Year Project. Developed using C#. Department of Engineering and Information Sciences, University of Hertfordshire, UK. Supervised by <a href="#">Prof Daniel Polani</a> . Grade: A.  |