

# Talal Rahwan (CV)

Last update: 30-November-2022



## Brief Bio

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Talal Rahwan is an associate professor of Computer Science, directing and the director of the Data Science and AI Lab at New York University Abu Dhabi. He earned his Ph.D. in Computer Science in 2007 from The University of Southampton, UK, where he received the *Dean's award for Early Career Researcher*. His Ph.D. thesis earned him the British Computer Society's *Distinguished Dissertation Award*, which annually recognizes the most outstanding Ph.D. thesis in the UK in Computer Science. He was selected by the IEEE Computer Society as one of the ten most promising, young Artificial Intelligence (AI) researchers in the world. His work appeared in major academic journals including Nature Communications, Nature Human Behaviour, and Nature Machine Intelligence. His research received coverage from international media outlets including The Boston Globe, WIRED, Scientific American, and Nature Middle East. Dr. Rahwan's research interests include: Data Science, Computational Social Science, Game Theory, and Artificial Intelligence.

## Achievements & Awards

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### ▲ AI's 10 to Watch

- I was selected by the IEEE Computer Society as one of *AI's 10 to Watch*. The list is published every two years by IEEE Intelligent Systems, in recognition of the **10 most promising, young Artificial-Intelligent (AI) scientists in the world**; the winners are described as the "*stars who promise to be the leaders of the field*".

### ▲ Distinguished Dissertation Award

- I received the British Computer Society's *Distinguished Dissertation Award*, which annually recognizes **the most outstanding Ph.D. thesis in the UK in Computer Science**.

### ▲ Dean Award for Early Career Researchers

- I was selected by the Faculty of Physical Sciences and Engineering (at the University of Southampton, UK) as one of the recipients of the "*Dean Awards for Early Career Researchers*". I received the award under the "*Scientific Research and Publications*" category.

### ▲ Overseas Research Scholarship (ORS) for a Ph.D.

- Awarded by the School of Electronics & Computer Science at the University of Southampton in the United Kingdom. The school was ranked 2nd in the UK for the quality of its research according to the *2008 Research Assessment Exercise (RAE)*.

### ▲ Presidential Award for Academic Achievement

- Convened by the Syrian Ministry of Higher Education and awarded to *the student ranked 1<sup>st</sup> in each department* at Syrian universities.

## Education

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### ▲ Nov-2003 – July-2007: Ph.D. in Computer Science

- School of Electronics and Computer Science (ECS), University of Southampton, UK  
*The school was **ranked 2nd in the UK for the quality of its research** according to the 2008 Research Assessment Exercise (RAE).*
- **Dissertation Title:** Algorithms for Coalition Formation in Multi-Agent Systems
- **Supervisor:** Prof. Nicholas R. Jennings (the world's 2<sup>nd</sup> most cited scientist in Artificial Intelligence [Microsoft Academic, 2014].)

### ▲ Sep-1998 – Aug-2003: Bachelor of Engineering in Informatics

- Faculty of Informatics Engineering, University of Aleppo, Syria.
- 5-year degree with specialization in Software Engineering.

## Employment History

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### ▲ 2018 – present: Associate Professor of Computer Science

- Department of Computer Science, New York University Abu Dhabi, UAE.

### ▲ 2013 – 2018: Assistant Professor of Computer Science

- Department of Computer Science, Masdar Institute, Khalifa University, UAE.

### ▲ 2007 – 2013: Research Fellow/ Senior Research Fellow

- School of Electronics and Computer Science, University of Southampton, UK.

## Invited talks

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### ▲ October 2022: MIT, Boston

- Invited by Prof. Alex 'Sandy' Pentland, director of MIT Connection Science, to give a talk titled: *"A Global Perspective of Scientific Publications"*.

### ▲ October 2022: Yale, New Haven

- Invited by Prof. Nicholas Christakis, director of the Human Nature Lab at Yale University, to give a talk titled: *"Hiding from AI"*.

### ▲ March 2022: Dubai Expo, UAE

- I gave an invited talk at the conference "Humanities and the Rise of AI - Implications of Cultural and Societal Engineering" at Luxemburg Pavilion, Expo 2020. My talk was titled: *"Cooperating with Machines"*.

### ▲ August 2021: Eurasia Summit

- I gave an invited talk at the Eurasian Summit for Models of Society, 2021. The talk I gave was under the title: *"Hiding Communities and Relationships in a Social Network"*.

### ▲ August 2015: Yokohama, Japan

- Invited speaker at the International Workshop on Market Design Technologies for Sustainable Development, at Yokohama, Japan, to give a talk titled: *"Measuring Synergy in Coalitions"*.

## Selected Media Coverage

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- Ethics, efficiency, and artificial intelligence, **Boston Globe** | January 30, 2020
- People Don't Learn to Trust Bots. **Scientific American** | February 1, 2020
- Human bias burdens bots. **Nature Middle East** | November 22, 2019
- Can Artificial Intelligence Increase Our Morality? **Psychology Today** | December 9, 2019
- The UAE minister seeking to avert an AI apocalypse. **WIRED** | December 29, 2019
- Robots can work better with concealed identity: Survey. **Khaleej Times** | November 15, 2019
- Bots Outperform Humans if They Impersonate Us. **Scientific American (Podcast)** | December 11, 2019
- How do machines think? **New Statesman** | December 11, 2019
- Cómo engañar al algoritmo y evitar que Facebook sepa a quién conoces. **El País** | September 19, 2019
- These labs are remarkably diverse — here's why they're winning at science. **Nature** | June 6, 2018
- Ethnic diversity boosts scientific impact. **Physics World** | March 21, 2018
- How to Hide Within a Social Network. **Motherboard** | January 30, 2018
- AI's 10 to Watch. **IEEE Intelligent Systems** | January/February 2011

## Selected Publications

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- F. Liu, P. Holme, M. Chiesa, B. AlShebli, T. Rahwan (2022). "*Gender inequality and self-publication patterns among scientific editors*". **Nature Human Behaviour**. Accepted; in press.
- K. Makovi, A. Sargsyan, W. Li, J. Bonnefon, T. Rahwan (2022). "*Trust within human-machine collectives depends on the perceived consensus about cooperative norms*". **Nature Communications**. Accepted; in press.
- M. Waniek, P. Holme, M. Cebrian, T. Rahwan (2022). "*Social diffusion sources can escape detection*". **iScience**.
- M. Waniek, G. Raman, B. AlShebli, J. C. H. Peng, T. Rahwan (2021). "*Traffic Networks are Vulnerable to Disinformation Attacks*". **Scientific Reports**. Publisher: Nature Research.
- F. Ishowo-Oloko, J. Bonnefon, Z. Soroye, J. Crandall, I. Rahwan, T. Rahwan (2019). "*Behavioural Evidence for a Transparency-Efficiency Tradeoff in Human-Machine Cooperation*". **Nature Machine Intelligence**.
- M. Waniek, K. Zhou, Y. Vorobeychik, E. Moro, T. Michalak, T. Rahwan (2019). "*How to Hide One's Relationships from Link Prediction Algorithms*". **Scientific Reports**.
- M. Waniek, T. Michalak, M. Wooldridge, T. Rahwan (2018). "*Hiding Individuals and Communities in a Social Network*". **Nature Human Behaviour**.
- B. AlShebli, T. Rahwan, W. Woon (2018). "*The Preeminence of Ethnic Diversity in Scientific Collaborations*". **Nature Communications**.

## All Publications (sorted by year)

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1. F. Liu, P. Holme, M. Chiesa, B. AlShebli, T. Rahwan (2022). "*Gender inequality and self-publication patterns among scientific editors*". **Nature Human Behaviour**. Accepted; to appear. Publisher: Nature Research.
2. K. Makovi, A. Sargsyan, W. Li, J. Bonnefon, T. Rahwan (2022). "*Trust within human-machine collectives depends on the perceived consensus about cooperative norms*". **Nature Communications**. Accepted; to appear. Publisher: Nature Research.
3. M. Waniek, P. Holme, M. Cebrian, T. Rahwan (2022). "*Social diffusion sources can escape detection*". **iScience**. Publisher: Cell Press.
4. B. AlShebli, E. Cheng, M. Waniek, R. Jagannathan, P. Hernandez-Lagos, T. Rahwan (2022). "*Beijing's Central Role in Global Artificial Intelligence Research*". **Scientific Reports**. Publisher: Nature Research.
5. M. Waniek, P. Holme, T. Rahwan (2022). "*Hiding in Temporal Networks*". **IEEE Transactions on Network Science and Engineering**.
6. M. Chaqfeh, R. Coke, J. Hu, W. Hashmi, L. Subramanian, T. Rahwan, Y. Zaki (2022) "*JSAnalyzer: A Web Developer Tool for Simplifying Mobile Web Pages Through Non-Critical JavaScript Elimination*". **ACM Transactions on the Web**. Publisher: ACM (Association for Computing Machinery).
7. M. Waniek, G. Raman, B. AlShebli, J. C. H. Peng, T. Rahwan (2021). "*Traffic Networks are Vulnerable to Disinformation Attacks*". **Scientific Reports**. Publisher: Nature Research.
8. M. Godziszewski, M. Waniek, Y. Zhu, K. Zhou, T. Rahwan, and T. Michalak (2021). "*Attacking Similarity-Based Sign Prediction*". In Proceedings of the 21st **International Conference on Data Mining (ICDM)** in Auckland, New Zealand. Acceptance rate 20%.
9. M. Waniek, J. Woźnica, K. Zhou, Y. Vorobeychik, T. Rahwan, T. Michalak (2021). "*Strategic Evasion of Centrality Measures*". In Proceedings of the 20th International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in London, UK. Acceptance rate 25%.
10. M. Sahakyan, Z. Aung, T. Rahwan. (2021). "*Explainable Artificial Intelligence for Tabular Data: A Survey*". **IEEE Access**.
11. G. Raman, B. AlShebli, M. Waniek, T. Rahwan, J. C. H. Peng (2020). "*How weaponizing disinformation can bring down a city's power grid*". **PLOS ONE**, 15(8), e0236517.
12. M. Waniek, T. Michalak, T. Rahwan (2020). "*Hiding in Multilayer Networks*". In Proceedings of the 34<sup>th</sup> **AAAI Conference on Artificial Intelligence**, in New York, USA. Acceptance rate 21%.
13. T. Wąs, M. Waniek, T. Rahwan, T. Michalak (2020). "*The Manipulability of Centrality Measures - An Axiomatic Approach*". In Proceedings of the 19th International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Auckland, New Zealand. Acceptance rate 23%.
14. S. Maleki, T. Rahwan, S. Ghosh, A. Malibari, D. Alghazzawi, A. Rogers, H. Beigy, N. Jennings (2020). "*The Shapley Value for a Fair Division of Group Discounts for Coordinating Cooling Loads*". **PLOS ONE**, 15(1), e0227049.

15. F. Ishowo-Oloko, J. Bonnefon, Z. Soroye, J. Crandall, I. Rahwan, T. Rahwan (2019). "[Behavioural Evidence for a Transparency-Efficiency Tradeoff in Human-Machine Cooperation](#)". **Nature Machine Intelligence**. Publisher: Nature Research, 1(11), 517-521.
16. M. Waniek, K. Zhou, Y. Vorobeychik, E. Moro, T. Michalak, T. Rahwan (2019). "[How to Hide One's Relationships from Link Prediction Algorithms](#)". **Scientific Reports**. Publisher: Nature Research, 9(1), 1-10.
17. B. AlShebli, O. Skibski, M. Wooldridge, T. Michalak, T. Rahwan (2019). "[A Measure of Added Value in Groups](#)". **ACM Transactions on Autonomous and Adaptive Systems**. 13(4), 18. Publisher: ACM (Association for Computing Machinery).
18. O. Skibski, T. Rahwan, T. Michalak, M. Yokoo (2019). "[Attachment Centrality: Measure for Connectivity in Networks](#)". **Artificial Intelligence (AIJ)**. 274. Pages: 151--179. Publisher: Elsevier.
19. O. Skibski, T. Rahwan, T. Michalak, M. Wooldridge (2019). "[Enumerating Connected Subgraphs and Computing the Myerson and Shapley Values in Graph-Restricted Games](#)". **ACM Transactions on Intelligent Systems and Technology**. Publisher: ACM (Association for Computing Machinery).
20. G. Raman, J. Peng, T. Rahwan (2019). "[Manipulating Residents' Behavior to Attack the Urban Power Distribution System](#)". **IEEE Transactions on Industrial Informatics**. Publisher: IEEE.
21. T. Was, T. Rahwan, O. Skibski (2019). "[Random Walk Decay Centrality](#)". In Proceedings of the 33<sup>rd</sup> **AAAI Conference on Artificial Intelligence**, in Honolulu, Hawaii, USA. Acceptance rate 16%.
22. K. Zhou, T. Michalak, M. Waniek, T. Rahwan, Y. Vorobeychik (2019). "[Attacking Similarity-Based Link Prediction in Social Networks](#)". In Proceedings of the 18th International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Montreal, Canada. Acceptance rate 24%.
23. B. AlShebli, T. Rahwan, W. Woon (2018). "[The Preeminence of Ethnic Diversity in Scientific Collaborations](#)". **Nature Communications**. Publisher: Nature Research, 9(1), 1-10.
24. M. Waniek, T. Michalak, M. Wooldridge, T. Rahwan (2018). "[Hiding Individuals and Communities in a Social Network](#)". **Nature Human Behaviour**. Publisher: Nature Research, 2(2), 139-147.
25. O. Skibski, T. Michalak, T. Rahwan (2018). "[Axiomatic Characterization of Game-Theoretic Centrality](#)". **Journal of Artificial Intelligence Research**. 62. Pages: 33-68 Publisher: AAAI (Association for the Advancement of Artificial Intelligence).
26. L. Kotthoff, T. Michalak, T. Rahwan, H. Hoos, K. Leyton-Brown (2018). "[Quantifying Algorithmic Improvements over Time](#)". In Proceedings of the 27th **International Joint Conference on Artificial Intelligence (IJCAI)**, Special Track on the Evolution of the Contours of AI, in Stockholm, Sweden. Acceptance rate 23%.
27. M. Oudah, T. Rahwan, T. Crandall, J. Crandall (2018). "[How AI Wins Friends and Influences People in Repeated Games with Cheap Talk](#)". In Proceedings of the 32<sup>nd</sup> **AAAI Conference on Artificial Intelligence**, in New Orleans, Louisiana, USA. Acceptance rate 25%.
28. M. Aftab, C. Chen, C. Chau, T. Rahwan (2017). "[Automatic HVAC control with real-time occupancy recognition and simulation-guided model predictive control in low-cost embedded system](#)". **Energy and Buildings**. Volume: 154. Pages: 141--156. Publisher: Elsevier.

29. F. Jahedpari, T. Rahwan, S. Hashemi, T. Michalak, M. De Vos, J. Padget, W. L. Woon (2017). *“Online Prediction via Artificial Continuous Prediction Markets”*. **IEEE Intelligent Systems**. 32(1). Pages 61--68. Publisher: IEEE Computer Society.
30. T. Michalak, T. Rahwan, M. Wooldridge (2017). *“Strategic Social Network Analysis”*. In Proceedings of the 31<sup>st</sup> **AAAI Conference on Artificial Intelligence**, in San Francisco, USA. Featured in the Senior Member track. According to the conference’s [website](#):
  - The Senior Member track is “open to researchers who have acquired an international recognition, and have established a significant publication record of [Artificial Intelligence]-related research”, to present a “well-developed body of research, an important new research area, or a promising new topic”.
31. O. Skibski, T. Rahwan, T. Michalak (2017). *“Axiomatic Characterization of Game-Theoretic Network Centralities”*. In Proceedings of the 31<sup>st</sup> **AAAI Conference on Artificial Intelligence**, in San Francisco, USA. Acceptance rate 25%.
32. M. Waniek, T. Michalak, T. Rahwan, M. Wooldridge (2017). *“On the Construction of Covert Networks”*. In Proceedings of the 16<sup>th</sup> International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Sao Paulo, Brazil. Acceptance rate 26%.
33. T. Michalak, T. Rahwan, E. Elkind, M. Wooldridge, N. R. Jennings (2016). *“A Hybrid Exact Algorithm for Complete Set Partitioning”*. **Artificial Intelligence**. 230. Pages 14--40. Publisher: Elsevier.
34. P. Szczepanski, T. Michalak, T. Rahwan (2016). *“Efficient Algorithms for Game-Theoretic Betweenness Centrality”*. **Artificial Intelligence**. 231. Pages 39--63. Publisher: Elsevier.
35. O. Skibski, T. Rahwan, T. Michalak, M. Yokoo (2016). *“Attachment Centrality: An Axiomatic Approach to Connectivity in Networks”*. In Proceedings of the 15<sup>th</sup> International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Singapore. Acceptance rate 25%.
36. M. Tarkowski, P. Szczepanski, T. Rahwan, T. Michalak, M. Wooldridge (2016). *“Closeness Centrality for Networks with Overlapping Community Structure”*. In Proceedings of the 30<sup>th</sup> **AAAI Conference on Artificial Intelligence**, in Phoenix, USA. Acceptance rate 26%.
37. A. Frechette, L. Kotthoff, T. Michalak, T. Rahwan, H. Hoos, K. Leyton-Brown (2016). *“Using the Shapley Value to Analyze Algorithm Portfolios”*. In Proceedings of the 30<sup>th</sup> **AAAI Conference on Artificial Intelligence**, in Phoenix, USA. Acceptance rate 26%.
38. P. Szczepanski, T. Rahwan, T. Michalak, M. Wooldridge (2016). *“An Extension of the Owen-Value interaction index and Its Application to Inter-links Prediction”*. In Proceedings of the 22<sup>nd</sup> **European Conference on Artificial Intelligence (ECAI)** in The Hague, Netherlands. Acceptance rate 27%.
39. T. Rahwan, T. Michalak, M. Wooldridge, N. R. Jennings (2015). *“Coalition Structure Generation: A Survey”*. **Artificial Intelligence**. 229. Pages 139--174. Publisher: Elsevier.
40. T. Michalak, T. Rahwan, O. Skibski, M. Wooldridge (2015). *“Defeating Terrorist Networks with Game Theory”*. **IEEE Intelligent Systems**. 30(1). Pages 53--61. Publisher: IEEE Computer Society.
41. T. Michalak, T. Rahwan, S. Moretti, R. Narayanam, O. Skibski, P. Szczepanski, M. Wooldridge (2015). *“A New Approach to Measure Social Capital using Game-Theoretic Techniques”*. **ACM Special Interest Group on E-commerce**. 14(1). Publisher: ACM (Association for Computing Machinery).

42. P. Szczepanski, T. Michalak, T. Rahwan (2015). *"The Game-Theoretic Interaction Index on Social Networks with Applications to Link Prediction and Community Detection"*. In Proceedings of the 24<sup>th</sup> **International Joint Conference on Artificial Intelligence (IJCAI)** in Buenos Aires, Argentina. Acceptance rate 29%.
43. M. Waniek, A. Niescieruk, T. Michalak, T. Rahwan (2015). *"Spiteful Bidding in the Dollar Auction"*. In Proceedings of the 24<sup>th</sup> **International Joint Conference on Artificial Intelligence (IJCAI)** in Buenos Aires, Argentina. Acceptance rate 29%.
44. T. Michalak, P. Szczepanski, T. Rahwan, A. Chrobak, S. Branzei, M. Wooldridge, N. R. Jennings (2014). *"Implementation and Computation of a Value for Generalized Characteristic Function Games"*. **ACM Transactions on Economics and Computation**. 2, 4. Pages 16:1--16:35. Publisher: ACM (Association for Computing Machinery).
45. O. Skibski, T. Michalak, T. Rahwan, M. Wooldridge (2014). *"Algorithms for the Shapley and Myerson values in Graph-Restricted Games"*. In Proceedings of the 13<sup>th</sup> International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Paris, France. 197-204. Acceptance rate 24%.
46. K. Pawlowski, K. Kurach, K. Svensson, S. Ramchurn, T. Michalak, T. Rahwan (2014). *"Coalition Structure Generation with the Graphics Processing Unit"*. In Proceedings of the 13<sup>th</sup> International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Paris, France. Pages 293-300. Acceptance rate 24%.
47. T. Rahwan, T-D Nguyen, T. Michalak, M. Polukarov, M. Croitoru, N. R. Jennings (2013). *"Coalitional Games via Network Flows"*. In Proceedings of the 23<sup>rd</sup> **International Joint Conference on Artificial Intelligence (IJCAI)** in Beijing, China. Acceptance rate 28%.
48. T. Michalak, T. Rahwan, P. Szczepanski, O. Skibski, R. Narayanam, M. Wooldridge, N. R. Jennings (2013). *"Computational Analysis of Connectivity Games with Applications to the Investigation of Terrorist Networks"*. In Proceedings of the 23<sup>rd</sup> **International Joint Conference on Artificial Intelligence (IJCAI)** in Beijing, China. Acceptance rate 28%.
49. L. Tran-Thanh, T-D Nguyen, T. Rahwan, A. Rogers, N. R. Jennings (2013). *"An Efficient Vector-based Representation for Coalitional Games"*. In Proceedings of the 23<sup>rd</sup> **International Joint Conference on Artificial Intelligence (IJCAI)** in Beijing, China. Acceptance rate 28%.
50. S. Brânzei, T. Michalak, T. Rahwan, K. Larson, N. R. Jennings (2013). *"Matchings with Externalities and Attitudes"*. In Proceedings of the 12<sup>th</sup> International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Minnesota, USA. Acceptance rate 23%.
51. S. Ramchurn, M. Osborne, O. Parson, S. Maleki, T. Rahwan, TD. Huynh, S. Reece, M. Alam, J. Fischer, G. Hines, E. Costanza, L. Moreau, T. Rodden (2013). *"AgentSwitch: Smart Energy Tariff Selection using Agent Technology"*. In Proceedings of the 12<sup>th</sup> International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Minnesota, USA. Acceptance rate 23%.
52. T. Rahwan, T. Michalak, M. Wooldridge, N. R. Jennings (2012). *"Anytime Coalition Structure Generation in Multi-Agent Systems with Positive or Negative Externalities"*. **Artificial Intelligence**. 186, Pages 95--122. Publisher: Elsevier.

53. E. Elkind, T. Rahwan, and N. R. Jennings (2012). "*Computational Coalition Formation*". Chapter 8, **Multiagent Systems (2<sup>nd</sup> Edition)**. Pages 329—380. Publisher: The MIT press.
54. T. Rahwan, T. Michalak, N. R. Jennings (2012). "*A Hybrid Algorithm for Coalition Structure Generation*". In Proceedings of the 26<sup>th</sup> **AAAI Conference on Artificial Intelligence**, in Toronto, Canada. Acceptance rate 26%.
55. P. Szczepanski, T. Michalak, T. Rahwan (2012). "*A New Approach to Betweenness Centrality based on the Shapley Value*". In Proceedings of the 11<sup>th</sup> International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Barcelona, Spain. Acceptance rate 20%.
56. G. Hines, T. Rahwan, N. R. Jennings (2012). "*An Anytime Algorithm for Finding the  $\alpha$ -Core in Nontransferable Utility Coalitional Games*". In Proceedings of the 20<sup>th</sup> **European Conference on Artificial Intelligence (ECAI)** in Montpellier, France. Acceptance rate 28%.
57. T. Rahwan, T. Michalak, N. R. Jennings (2011). "*Minimum Search to Establish Worst-Case Guarantees in Coalition Structure Generation*". In Proceedings of the 22<sup>nd</sup> **International Joint Conference on Artificial Intelligence (IJCAI)** in Barcelona, Spain. Acceptance rate 17%.
58. T. Rahwan, T. Michalak, E. Elkind, P. Faliszewski, J. Sroka, M. Wooldridge, N. R. Jennings (2011). "*Constrained Coalition Formation*". In Proceedings of the 25<sup>th</sup> **AAAI Conference on Artificial Intelligence**, in San Francisco, USA. Acceptance rate 25%.
59. T. Michalak, T. Rahwan, D. Marciniak, M. Szamotulski, N. R. Jennings (2010). "*Computational Aspects of Extending the Shapley Value to Coalitional Games with Externalities*". In Proceedings of the 19<sup>th</sup> **European Conference on Artificial Intelligence (ECAI)** in Lisbon, Portugal. Acceptance rate 20%.
60. T. Michalak, J. Sroka, T. Rahwan, M. Wooldridge, P. McBurney, N. R. Jennings (2010). "*A distributed algorithm for anytime coalition structure generation*". In Proceedings of the 9<sup>th</sup> International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Toronto, Canada, 1007-1014. Acceptance rate 24%.
61. T. Michalak, D. Marciniak, M. Szamotulski, T. Rahwan, M. Wooldridge, P. McBurney, N. R. Jennings (2010). "*A logic-based representation for coalitional games with externalities*". In Proceedings of the 9<sup>th</sup> International Conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Toronto, Canada, 125-132. Acceptance rate 24%.
62. T. Rahwan, S. D. Ramchurn, A. Giovannucci, and N. R. Jennings (2009). "*An Anytime Algorithm for Optimal Coalition Structure Generation*". **Journal of Artificial Intelligence Research**. 34, Pages 521--567. Publisher: AAAI (Association for the Advancement of Artificial Intelligence).
63. T. Rahwan, T. Michalak, N. R. Jennings, M. Wooldridge, P. McBurney (2009). "*Coalition Structure Generation in Multi-Agent Systems with Positive and Negative Externalities*". In Proceedings of the 21<sup>st</sup> **International Joint Conference on Artificial Intelligence (IJCAI)** in Pasadena, USA. Pages 257--263. Acceptance rate 26%.
64. T. Michalak, T. Rahwan, J. Sroka, A. Dowell, M. Wooldridge, P. McBurney, N. R. Jennings (2009). "*On Representing Coalitional Games with Externalities*". In Proceedings of the 10<sup>th</sup> **ACM conference on Electronic Commerce (ACM-EC)** in Stanford, USA. Pages 11--20. Acceptance rate 25%.
65. T. Rahwan and N. R. Jennings (2008). "*Coalition Structure Generation: Dynamic Programming Meets*



- Anytime Optimization*". In Proceedings of the 23<sup>rd</sup> **AAAI Conference on Artificial Intelligence**, in Chicago, USA. Pages 156--161. Acceptance rate 24%.
66. T. Rahwan and N. R. Jennings (2008). "*An Improved Dynamic Programming Algorithm for Coalition Structure Generation*". In Proceedings of the 7<sup>th</sup> international conference on **Autonomous Agents and Multi-Agent Systems (AAMAS)** in Estoril, Portugal. Pages 1417--1420.
67. T. Rahwan (2007). "*Algorithms for Coalition Formation in Multi-Agent Systems*". Ph.D. Thesis. Published by the **British Informatics Society**, ISBN: 978-1906124144. *Winner of the British Computer Society's Distinguished Dissertation award, which annually recognizes the most outstanding Ph.D. thesis in the UK in Computer Science.*
68. T. Rahwan and N. R. Jennings (2007). "*An Algorithm for Distributing Coalitional Value Calculations among Cooperating Agents*". **Artificial Intelligence**. 171 (8-9). Pages 535--567. Publisher: Elsevier.
69. T. Rahwan, S. D. Ramchurn, A. Giovannucci, V. D. Dang, N. R. Jennings (2007). "*Anytime Optimal Coalition Structure Generation*". In Proceedings of the 22<sup>nd</sup> **AAAI Conference on Artificial Intelligence**, in Vancouver, Canada. Pages 1184--1190. Acceptance rate 27%.
70. T. Rahwan, S. D. Ramchurn, V. D. Dang, N. R. Jennings (2007) "*Near-Optimal Anytime Coalition Structure Generation*". In Proceedings of the 20<sup>th</sup> **International Joint Conference on Artificial Intelligence (IJCAI)** in Hyderabad, India. Pages 2365--2371. Acceptance rate 16%.
71. T. Rahwan and N. R. Jennings (2005). "*Distributing Coalitional Value Calculations among Cooperating Agents*". In Proceedings of the 20<sup>th</sup> **AAAI Conference on Artificial Intelligence**, in Pittsburgh, USA. Pages 152--157. Acceptance rate 18%.
72. T. Rahwan, T. Rahwan, I. Rahwan, R. Ashri (2004). "*Agent-based Support for Mobile Users Using AgentSpeak(L)*". In volume 3030 of **Agent-Oriented Information Systems**, Springer-Verlag, Berlin, Germany. Pages 45--60.

## Project Funding

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Project title: "*Developing Coalition Formation Algorithms and Solution Concepts, with Applications to Virtual Power Plants*"

- Duration: Sep-2014 till Sep-2016
- Budget: \$280,000
- Principle Investigator (PI): Talal Rahwan
- Sponsor: Masdar Institute of Science and Technology

Project title: "*Strategic Social Network Analysis to Enhance Security and Privacy*"

- Duration: July-2018 till June-2021
- Budget: \$670,000
- Principle Investigator (PI): Talal Rahwan
- Sponsor: Khalifa University of Science and Technology

## Internal Committees & Services

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- ▲ **Ph.D. Programme Coordinator**, from Sept-2019 to present day.

- ⤴ Chair of the **Visiting Faculty Search Committee**, from Jan-2022 to present day.
- ⤴ Chair of the **Lecturer Search Committee**, from Oct-2019 to May-2021.
- ⤴ Head of the **Undergraduate Curriculum Committee**, from Nov-2017 to Dec-2018. Responsible for developing curricula and policies for undergraduate studies.
- ⤴ Member of the **Graduate Selection Committee** for MSc students in the Department of Computer Science, from May-2017 to present day. Responsibilities included evaluating every MSc applicant to the Computing and Information Science programme.
- ⤴ Member of the **Faculty Recruitment and Advancement Committee**, from November-2015 to present day. Responsibilities included evaluating every applicant to a faculty position in the entire university.
- ⤴ Member of the **Ph.D. Admissions Committee** from February-2014 to February-2016. Responsibilities included evaluating every Ph.D. applicant to the entire university on a weekly basis.

### Teaching & Supervision

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I have taught the following courses:

- Computational Social Science
- Data Structures
- Sustainable Energy
- Multimodal Data mining
- Techniques in Data Science
- Machine Learning

I supervised the following students:

Student Name	Degree	Date complete/ expected	University	Main Advisor	Thesis/Dissertation Title
Fengyuan (Michael) Liu	Ph.D.	2023	New York University Abu Dhabi	Yes	Understanding Publication Patterns of Journal Editors
Bedoor AlShebli	Ph.D.	2018	Masdar Institute of Science and Technology, UAE	Yes	Diversity: Trendy Buzzword or Scientific Imperative?
Sarah Bamatraf	MSc	2018	Khalifa University of Science and Technology, UAE	Yes	Investigating the relation between diversity and group success
Fatimah Ishowo-Oloko	Ph.D.	2017	Masdar Institute of Science and Technology, UAE	Yes	On Man and Machines: Competition, Cooperation and Coordination

Mayada Oudah	Ph.D.	2017	Masdar Institute of Science and Technology, UAE	Yes	How Machines Win Friends and Influence People
Chien Chen	M.Sc.	2016	Masdar Institute of Science and Technology, UAE	Yes	Modelling and Prediction of Occupancy Patterns in Energy Performance of Mosques
Jwen Fai Low	M.Sc.	2015	Masdar Institute of Science and Technology, UAE	Yes	<i>Group Dynamics in Resource Management</i>
Maryam Al mehrezi	M.Sc.	2015	Masdar Institute of Science and Technology, UAE	Yes	<i>Dynamics of Organizational Networks in USA and China</i>
Pai-Ju Chang	M.Sc.	2015	Masdar Institute of Science and Technology, UAE	Yes	<i>Temporal Trends of International Relations from Event Data</i>
Sasan Maleki	Ph.D.	2015	University of Southampton, UK	No	<i>Addressing the Computational Issues of The Shapley Value With Applications In The Smart Grid</i>

#### Academic Reviewing (sorted by date)

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1. Reviewer: **Nature Communications**, Nature Publishing Group, 2022.
2. Reviewer: *UAE Graduate Students Research Conference*, 2022.
3. Reviewer: **Science Advances**, American Association for the Advancement of Science, 2021.
4. Reviewer: *The 31<sup>st</sup> International World Wide Web (WWW) Conference, 2021. Lyon, France.*
5. Reviewer: **Nature Machine Intelligence**, Nature Publishing Group, 2020.
6. Reviewer: **Nature Human Behaviour**, Nature Publishing Group, 2018.
7. Reviewer: *Artificial Intelligence Journal (AIJ)*, Elsevier, 2018.
8. Reviewer: **Constraints**, published by Springer, 2018.
9. Reviewer: *Artificial Intelligence Journal (AIJ)*, Elsevier, 2017.
10. Technical programme committee member: *The 31<sup>st</sup> AAAI conference on Artificial Intelligence*, 2017. San Francisco, California USA.
11. Technical programme committee member: *The 8<sup>th</sup> Workshop on Cooperative Games and Multiagent Systems (CoopMAS)* 2017. São Paulo, Brazil.
12. Reviewer: *Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)*, Springer, 2016.
13. Reviewer: *European Journal of Operational Research (EJOR)*, Elsevier, 2016.
14. Technical programme committee member: *The 24<sup>th</sup> International Joint Conference on Artificial Intelligence (IJCAI)* 2015. Buenos Aires, Argentina.
15. Technical programme committee member: *The 6<sup>th</sup> Workshop on Cooperative Games and Multiagent Systems (CoopMAS)* 2015. Istanbul, Turkey.

16. Technical programme committee member: *International Workshop on Optimisation and Multi-Agent Systems (OptMAS)* 2015. Istanbul, Turkey.
17. Reviewer: **ACM Computing Surveys**, published by ACM, 2014.
18. Reviewer: *Artificial Intelligence Journal (AIJ)*, Elsevier, 2014.
19. Reviewer: *Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)*, Springer, 2014
20. Technical programme committee member: *The 28<sup>th</sup> AAAI conference on Artificial Intelligence*, 2014. In Quebec, Canada.
21. Technical programme committee member: *the 21<sup>st</sup> European Conference on Artificial Intelligence (ECAI)*, 2014. Prague, Czech Republic.
22. Technical programme committee member: *The 5<sup>th</sup> Workshop on Cooperative Games in Multiagent Systems (CoopMAS)* 2014. Paris, France.
23. Technical programme committee member: *International Workshop on Optimisation and Multi-Agent Systems and Distributed Constraint Reasoning (OptMAS-DCR)* 2014. Paris, France.
24. Reviewer: *Journal of Artificial Intelligence Research (JAIR)*, published by AAAI, 2013.
25. Reviewer: *Artificial Intelligence Journal (AIJ)*, Elsevier, 2013.
26. Reviewer: *Engineering Applications of Artificial Intelligence (EAAI)*, Elsevier, 2012.
27. Reviewer: *Artificial Intelligence Journal (AIJ)*, Elsevier, 2012.
28. Technical programme committee member: *the 20<sup>th</sup> European Conference on Artificial Intelligence (ECAI)*, 2012. Mont pellier, France.
29. Technical programme committee member: *IEEE International Conference on Robotics and Automation (ICRA)*, 2012. Minnesota, USA.
30. Technical programme committee member: *The 5<sup>th</sup> international workshop on Optimisation in Multi-Agent Systems (OptMAS)* 2012. Valencia, Spain.
31. Reviewer: *Artificial Intelligence Journal (AIJ)*, Elsevier, 2011.
32. Reviewer: **The Knowledge Engineering Review**, Cambridge University Press, 2011.
33. Reviewer: *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2011. San Francisco, USA.
34. Reviewer: *Artificial Intelligence Journal (AIJ)*, Elsevier, 2010.
35. Reviewer: *Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)*, Springer, 2010
36. Technical programme committee member: *The 24<sup>th</sup> AAAI conference on Artificial Intelligence*, 2010. Atlanta, USA.
37. Technical programme committee member: *The 9<sup>th</sup> international conference on Autonomous Agents and Multi-Agent Systems (AAMAS)* 2010, Toronto, Canada.
38. Technical programme committee member: *The 1<sup>st</sup> Workshop on Cooperative Games in Multiagent Systems (CoopMAS)* 2010. Toronto, Canada.
39. Technical programme committee member: *The 3<sup>rd</sup> international workshop on Optimisation in Multi-Agent Systems (OptMas)* 2010. Toronto, Canada.
40. Reviewer: *Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)*, Springer, 2009.
41. Technical programme committee member: *The 8<sup>th</sup> international conference on Autonomous Agents and Multi-Agent Systems (AAMAS) 2009*, Budapest, Hungary.
42. Technical programme committee member: *The 2<sup>nd</sup> international workshop on Optimisation in Multi-Agent Systems (OPTMAS)* 2009, Budapest, Hungary.
43. Reviewer: *Artificial Intelligence Journal (AIJ)*, Elsevier, 2008.
44. Reviewer: *2<sup>nd</sup> international workshop on Computational Social Choice (COMSOC)* 2008, Liverpool, UK.
45. Reviewer: *Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)*, Springer, 2007.

## Contact Details

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