

# Marko Tešić

Leverhulme Centre for the Future of Intelligence  
University of Cambridge  
Level 1, 16 Mill Lane, Cambridge, CB2 1SB, UK

✉ [mt961@cam.ac.uk](mailto:mt961@cam.ac.uk)  
🌐 [markotesic.org](http://markotesic.org)  
🐦 [@m\\_tesic](https://twitter.com/m_tesic), [in](https://www.linkedin.com/in/m_tesic), [📺](https://www.youtube.com/channel/UC...)

## Research Experience

---

**Research Associate** at **Leverhulme Centre for the Future of Intelligence, University of Cambridge** *July 2023 – Present*

- Investigating AI capabilities and how these capabilities map onto the specific demands in the human workforce. Work done in collaboration with the OECD.

**Royal Academy of Engineering UK IC Postdoctoral Research Fellow** at Birkbeck, University of London *Mar. 2021 – Feb. 2023*

- Exploring the effects of explanations of AI predictions on human beliefs

**Researcher** on *The Bayesian Approach to Robust Argumentation Machines* project at MCMP, LMU, Munich & Birkbeck, University of London *Sep. 2021 – Feb. 2023*

- Automated argument generation and evaluation from Bayesian network models

**Data Study Group (DSG) Principal Investigator** at **the Alan Turing Institute** *Oct. 2022 – April 2023*

- Scoping a data science challenge in collaboration with the data provider, the Department for Transport
- Supporting DSG participants and acting as quality control on code and challenge solutions
- Writing the final report on the outcomes of the data challenge to be published on the Turing website

**DSG Facilitator** at **AI UK showcase, the Alan Turing Institute** *March 23, 2022*

- Led a group of researchers in analyzing climate change data

**DSG Researcher** at **the Alan Turing Institute and LIDA, University of Leeds** *July 5–23, 2021*

- Optimizing Morrisons supermarkets' supply chain as part of a DSG team
- Analyzed data & trained gradient boosting tree models to predict future supplies

**Research Intern** at **BlackRock, Factor Based Strategies Group** *Oct. 2019 – Mar. 2020*

- (Causal) Bayesian modeling of investment factors and ESG criteria

**Member of the Translation Team UK** on the project *Bayesian Argumentation via Delphi (BARD)* within **IARPA** at Birkbeck, University of London & UCL *Oct. 2017 – Nov. 2018*

- Created intelligence gathering-inspired situations
- Built Bayesian network models of these situations
- Fully designed, ran, and analyzed experiments testing people's evidential, causal, and probabilistic reasoning

**Member of the Research Team** on the project *Scientific Reasoning and Argumentation* at the **Center for Advanced Studies**, LMU, Munich *Oct. 2016 – Sep. 2017*

- Worked on explicating an inference pattern called 'Inference to the Best Explanation' (IBE) in Bayesian terms

## Education

---

**Ph.D. in Psychology** *2020*

Department of Psychological Sciences, Birkbeck, University of London, UK

Thesis title: *Explanation and Argument*

Areas of research: causal-probabilistic reasoning, Bayesian networks, psychology of explanations

Supervisors: **Ulrike Hahn** and **David Lagnado**

**M.A. in Logic and Philosophy of Science** *2016*

Munich Center for Mathematical Philosophy, Ludwig Maximilian University, Munich, Germany

**B.A. in Philosophy** *2014*

University of Belgrade, Serbia

## Publications

---

**Marko Tešić** & Ulrike Hahn (2023). **The impact of explanations as communicative acts on belief in a claim: The role of source reliability.** *Cognition*, 240(105586).

Ulrike Hahn & **Marko Tešić** (2023). **Argument and Explanation.** *Philosophical Transactions of the Royal Society A*, 381(2251). Theme issue on *Cognitive Artificial Intelligence*.

**Marko Tešić** & Ulrike Hahn (2022). **Can counterfactual explanations of AI systems' predictions skew lay users' causal intuitions about the world? If so, can we correct for that?** *Patterns*, 3(12).

Data Study Group team. (2022). Data Study Group Final Report: Morrisons. Zenodo. <https://doi.org/10.5281/zenodo.6498140>.

**Marko Tešić** (2021). On the transferability of insights from the psychology of explanation to explainable AI. **Human Centered AI workshop at NeurIPS 2021.**

**Marko Tešić** & Ulrike Hahn (2021). **Explanation in AI systems.** In S. Muggleton & N. Chater (Eds.), *Human-Like Machine Intelligence* (pp. 114–136). Oxford University Press.

**Marko Tešić\***, Alice Liefgreen\*, & David Lagnado (2020). **The propensity interpretation of probability and diagnostic split in explaining away.** *Cognitive Psychology*, 121.

Alice Liefgreen & **Marko Tešić** (2020). **Explaining away and the propensity interpretation of probability: The case of unequal priors.** In C. Dutilh Novaes, H. Jansen, J. A. van Laar, & B. Verheij (Eds.), *Reason to dissent. Proceedings of the 3rd European Conference on Argumentation, Vol. III* (pp. 385–403). College Publications.

Nicole Cruz, Saoirse Desai, Stephen Dewitt, Ulrike Hahn, David Lagnado, Alice Liefgreen, Kirsty Phillips, Toby Pilditch & **Marko Tešić** (2020). **Widening access to Bayesian problem solving.** *Frontiers in Psychology*, 11, 660.

**Marko Tešić** & Ulrike Hahn (2019). **Sequential diagnostic reasoning with independent causes.** In A.K. Goel, C.M. Seifert, & C. Freksa (Eds.), *Proceedings of the 41st Annual Conference of the Cognitive Science Society* (pp. 2947–2953). Montreal, QB: Cognitive Science Society.

Alice Liefgreen\*, **Marko Tešić\***, & David Lagnado (2018). **Explaining away: Significance of priors, diagnostic reasoning, and structural complexity.** In T. T. Rogers, M. Rau, X. Zhu, & C. W. Kalish (Eds.), *Proceedings of the 40th Annual Meeting of the Cognitive Science Society* (pp. 2047–2052). Austin, TX: Cognitive Science Society.

**Marko Tešić** (2017). **Confirmation and the generalized Nagel-Schaffner model of reduction: A Bayesian analysis.** *Synthese*, 196(3), 1097–1129. DOI: 10.1007/s11229-017-1501-1.

\* indicates equal contribution

## Work in Progress

---

**Marko Tešić**, Ulrike Hahn, Jason Burton, & Kirsty Phillips. (Un)interesting correlations: What are the chances that correlations lead to causation? (in prep.).

**Marko Tešić**, Benjamin Eva, & Stephan Hartmann. **Confirmation by explanation: A Bayesian justification of IBE.**

## Recent Presentations and Workshops

---

**Can AI explanations skew our causal intuitions about the world? If so, can we correct for that?**

- 8<sup>th</sup> Intelligence Community Academic Research Symposium (ICARS), USA September 14, 2022
- ONI National Intelligence Community Research Symposium, Canberra, Australia December 1, 2022

**Workshop on Human Behavioral Aspects of (X)AI**

- I organized a workshop bringing together cognitive scientist and machine learning researchers from academia, industry and government working on and with (explainable) AI. September 23–24, 2022

## Teaching Experience

---

- Visiting Lecturer** for the M.A. courses *Computational Approaches to Mind and Fundamental Debates in Cognitive Science* Jan. 2023 – Apr. 2023  
 Department of Psychological Sciences  
 Birkbeck, University of London  
**Taught:** Bayesian modeling, Agent-based modeling, and Marr’s levels of explanation
- Visiting Lecturer** for the M.A. course *Cognitive and Economic Science of Rational Choice* Oct. 2020 – Dec. 2020  
 Department of Psychology and Department of Economics  
 City, University of London  
**Taught:** Rationality as logic and as probability theory, Probabilistic fallacies, and Causal reasoning and modeling
- Seminar leader** for the M.A. courses *Neuroscience, Individual Differences, Social Psychology, and Developmental Psychology* Feb., Nov. 2020; Feb. 2021  
 Department of Psychological Sciences  
 Birkbeck, University of London, UK
- Tutor** for the B.A. course *Logic and Discrete Structures* Summer 2017  
 Computer Science Department  
 Ludwig Maximilians University, Munich, Germany
- Teaching assistant** for the M.A. course *Central Topics in Philosophy of Science* Winter 2016  
 Munich Center for Mathematical Philosophy  
 Ludwig Maximilians University, Munich, Germany
- Tutor** for the B.A. course *Logic 1* Winter 2016  
 Faculty of Philosophy  
 Ludwig Maximilians University, Munich, Germany

## Honors and Awards

---

- The Alan Turing Institute Post-Doctoral Enrichment Award** July 2022 – Jan. 2023
- The Royal Academy of Engineering UK IC Postdoctoral Research Fellowship** Mar. 2021 – Feb. 2023
- Ph.D. studentship from the Department of Psychological Sciences, Birkbeck, UoL 2018 – 2020
- Ph.D. studentship from the BARD project 2017 – 2018
- Dositeja** scholarship for graduate studies 2017/18; 2015/16; 2014/15
- BAYHOST** scholarship for graduate studies 2015/16; 2014/15

## Skills

---

### Software Skills:

- Text editing:  $\LaTeX$
- Programming languages: R, Python, Matlab, NetLogo

### Other:

- **Violinist** at **Paprika: The Balkan and East European Band** and **The Pico Players** (a symphony orchestra)
- **Xen-Do kickboxing**
- **Resident Advisor** at the University of London Halls of Residence (2019 – 2021)
  - Residents’ welfare support
  - Academic assistance, peer-counseling
  - Emergency response (physical and mental first aid, fire emergency, Covid-19 related)

### Online courses and further training:

- **Machine Learning** (Coursera)
- **Deep Learning** (DeepLearning.AI on Coursera): **Neural Networks and Deep Learning, Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization, Structuring Machine Learning Projects, Convolutional Neural Networks, Sequence Models.**
- **Python Data Structures** (Coursera)
- **Science Policy Primer** (5-day course organized by The Royal Society, London, UK)
- **Business and Commercialization** (4-day course organized by The Royal Academy of Engineering, London, UK)
- **Media training** (full day course organized by The Royal Academy of Engineering, London, UK)