

DR. ȘTEFAN SARKADI

RAEng UK IC Postdoctoral Research Fellow

 <https://www.stefansarkadi.com/>

SUMMARY

- As an interdisciplinary researcher in Artificial Intelligence I aim to deliver highly impactful research at the intersection of Computer Science, Cognitive Science, and Intelligence Analysis.
- Generally, I investigate the reasoning and behaviour of intelligent agents in hybrid societies. In particular, I am interested in aspects of knowledge-sharing interactions such as reasoning, communication, information dissemination, and explanation, in heterogenous self-organising and open multi-agent systems. My main focus and expertise is in the modelling, analysis, and explanation of deception.
- Areas of research: Deception; Multi-Agent Systems; Intelligence Analysis; AI Ethics; Explainable AI.

EDUCATION

PhD in Computer Science (Artificial Intelligence)

King's College London

 2021

 London, UK

MSc. in Mind, Language, and Embodied Cognition (Cognitive Science)

The University of Edinburgh

 2015

 Edinburgh, UK

B.A. (with Hons.) in Philosophy

West University of Timisoara


 2014

 Timisoara, Romania

RESEARCH EXPERIENCE

Research Fellow

King's College London

 Dec 2022 – present

 London, UK

- Royal Academy of Engineering UK IC Postdoctoral Fellowship
- £200.000 individual grant awarded for at least 2 years to explore the topic *Enhancing deception analysis with storytelling AI*
- My research tackles the integration of techniques from AI and deception analysis to generate narratives about multi-agent interactions in complex systems in order to help intelligence analysts perform inference to the best explanation.
- My fellowship also involves international research collaborations with a potential for very high impact in International Security & Defense, which I will conduct at various institutions and groups in addition to KCL, including the National Police AI Lab and the Uni. of Utrecht in the Netherlands, Inria, CNRS, and 3iA Côte d'Azur in France, and with the Intelligence Community.

Associate Researcher

Inria

 Jan 2022 – present

 London & Sophia-Antipolis, UK & France

- Working on open Multi-Agent Systems that allow successful knowledge-sharing interactions between different types of AI agents (Logic-based, ML, neurosymbolic). I am also part of Inria London and the Wimmics and Hyperagents research groups.

Post-Doctoral Research Associate

King's College London, Dept. of Informatics

📅 Jan 2022 – Jan 2023

📍 London, UK

- Worked the PRAISE project within the National Research Centre on Privacy, Harm Reduction and Adversarial Influence Online (REPHRAIN).
 - Assisting Prof. Jose Such with the supervision of a PhD student working on AI for privacy.
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3IA Post-Doctoral Research Fellowship

Inria, Sophia-Antipolis

📅 Nov 2020 – Dec 2021

📍 Sophia-Antipolis, France

- 3IA Côte d'Azur Project: Design and test multi-agent models and protocols to orchestrate the interactions between agents that embed different AI methods. The aim of this project is ensuring an optimised collaboration to augment, improve, and govern knowledge sharing activities in Open Multi-Agent Systems.
 - Hyper-Agents Project: Define a new class of Multi-Agent Systems that use hypermedia as a general mechanism for uniform interaction to support AI on the Web.
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PhD Researcher

King's College London, Dept. of Informatics

📅 Oct 2016 – Oct 2020

📍 London, UK

- Thesis title: *Deception*
 - Research, design, implementation and evaluation of Agent Based Models and Multi-Agent Systems for the study of deception.
 - Engineering of complex reasoning and communication mechanisms for deceptive artificial agents using techniques from Game-Theory, Knowledge Representation and Agent-Oriented Programming Languages.
 - Extensive interdisciplinary research on the topic of human and machine deception covering literature from Psychology, Philosophy, Sociology, Economics, and Communication Theory.
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Visiting PhD Researcher

MIT, Media Lab

📅 Jul 2018 – Oct 2018

📍 Cambridge, MA, USA

- Research, design, implementation and evaluation of evolutionary game-theoretical models of agents.
 - Development of evolutionary models using high-level cognitive architectures to promote cooperation and ethical behaviour in agent societies where deception is present.
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Research Assistant

King's College London, Dept. of Informatics

📅 Sep 2015 – Sep 2016

📍 London, UK

- Research on the feasibility of applying Blockchain technology for non-proliferation and arms control.
 - Big Data analysis of wheat market data for the development of market behaviour models.
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TEACHING QUALIFICATIONS & EXPERIENCE

Associate Fellow of the HEA

The Higher Education Academy UK

📅 2019 - present

📍 London, UK

Lecturer

King's College London, Dept. of Informatics

📅 Sep 2022 – present

📍 London, UK

- Delivering 20% of the lectures for the *Agents & Multi-Agent Systems Module* (6CCS3AMS/7CCSMAMS).
- Responsible for designing parts of the core material and designing and marking parts of the exam questions for 6CCS3AMS and 7CCSMAMS.
- Supervising MSc projects.

Graduate Teaching Assistant

King's College London, Dept. of Informatics

📅 Sep 2016 – Dec 2019

📍 London, UK

- Guest lecturer - *Artificial Intelligence*.
- Guest lecturer - *Advanced Research Topics in Computer Science*.
- Design and organisation of tutorials and seminar materials - *Philosophy & Ethics of AI* and *Artificial Intelligence*.
- Coursework marking - *Artificial Intelligence*.
- Small group tutorials and seminars teaching - *Introduction to Artificial Intelligence* and *Elementary Logic & Applications*.
- Large group tutorials and seminars teaching - *Artificial Intelligence*; *Elementary Logic & Applications*; and *Philosophy & Ethics of AI*.
- Lab and practicals teaching - *Artificial Intelligence*; *Machine Learning*; *Computer Programming for Data Science*; *Introductory Course to Python* for the MSc in Data Science.

AWARDS & GRANTS

- RAEng UK IC Postdoc Research Fellowship (2022-2024) Grant total: **£ 200,000** (approx. € 233.000).
- Inria Recipient of the 3IA Postdoctoral Fellowship (2020-2022).
- Lead researcher for *Online Deception Survey Research Grant*, The Alan Turing Institute defence and security ARC (2020). Grant total: **£ 8,960** (approx. € 10.500).
- Nomination - Graduate Teaching Assistant for the university-wide 2020 *King's Education Awards*, at King's College London.
- Nomination - Department of Informatics 2018/2019 *Outstanding Teaching Assistant Award*, at King's College London.
- Two *Best Early Researcher Paper* nominations at the EUMAS-AT conference (2018).
- *Graduate Visiting Researcher Funding*, MIT Media Lab (2018).
- *Conference Travel Grant for IJCAI '18*, Artificial Intelligence Journal (2018).
- *NMS Faculty Studentship Scheme*, King's College London (2018-2020).
- *Graduate Teaching Studentship*, King's College London (2016-2018).
- *Academic Performance Scholarship*, West University of Timișoara (2012-2014).

PROFESSIONAL ACTIVITIES

- *General chair* of the 1st and 2nd International Workshops on Deceptive AI @ECAI2020 & @IJCAI2021.
- *Co-chair* of the 1st International Workshop on Argumentation & Machine Learning @COMMA2022.
- *Co-founder and co-editor* of the Online Handbook of Argumentation for Artificial Intelligence (OHA AI).
- *Co-organiser* of the Distributed AI research group seminars, Dept. of Informatics, King's College London.
- *PC Member* - 1st, 2nd and 3rd International Workshops on Explainable Transparent Autonomous Agent and Multi-Agent Systems (EXTRAAMAS).
- *PC Member* - 1st International Conference on AI for People (CAIP'21).
- *PC Member* - 1st Workshop on Argumentation for eXplainable Artificial Intelligence (ArgXAI 2022).
- *Reviewer* - Annual International Conference on Human-Agent Interaction (HAI 2018).
- *Reviewer* - Journal of Autonomous Agents & Multi-Agent Systems (JAAMAS).

- Reviewer - Decision Support Systems (DECSUP).
- Reviewer - Journal of Applied Logic (JAL).
- Reviewer - Journal of Logic and Computation (JLC).
- Reviewer - The Knowledge Engineering Review (KER).
- Reviewer - Philosophical Psychology.
- Reviewer - ACM Transactions on Autonomous & Adaptive Systems (ACM-TAAS).
- Reviewer - IEEE Transactions on Cognitive and Developmental Systems (TCDS).

PUBLICATIONS

Journals

Ştefan Sarkadi, Andreea G.B. Tettamanzi, Fabien Gandon [2022]: *Interoperable AI: Evolutionary Race Towards Sustainable Knowledge Sharing*. In: *IEEE Internet Computing*, <https://doi.org/10.1109/MIC.2022.3214378>.

Ştefan Sarkadi, Alex Rutherford, Peter McBurney, Simon Parsons, Iyad Rahwan [2021]: *The evolution of deception*. In: *Royal Society Open Science* 8:201032, <https://doi.org/10.1098/rsos.201032>.

Ştefan Sarkadi, Alison R. Panisson, Rafael H. Bordini, Peter McBurney, Simon Parsons, Martin Chapman [2019]: *Modelling deception using Theory of Mind in multi-agent systems*. In: *AI Communications* 32.4, pp.287–302., DOI: 10.3233/AIC-190615, <https://content.iospress.com/articles/ai-communications/aic190615>

Conference Proceedings

Xiao Zhan, Ştefan Sarkadi, Natalia Criado Pacheco, Jose Such [2022]: A Model for Governing Information Sharing in Smart Assistants. *Proceedings of the 5th AAIL/ACM Conference on AI, Ethics, and Society*, Oxford, UK, 1-3 August 2022. <https://doi.org/10.1145/3514094.3534129>

Ştefan Sarkadi, Alison R. Panisson, Rafael H. Bordini, Peter McBurney, Simon Parsons [2018]: Towards an Approach for Modelling Uncertain Theory of Mind in Multi-Agent Systems. *Proceedings of the 6th International Conference on Agreement Technologies*, Bergen, Norway, 6-7 December 2018. https://link.springer.com/chapter/10.1007/978-3-030-17294-7_1 **Best Early Researcher Paper Nomination**

Alison R. Panisson, Ştefan Sarkadi, Peter McBurney, Simon Parsons, Rafael H. Bordini [2018]: On the Formal Semantics of Theory of Mind in Agent Communication. *Proceedings of the 6th International Conference on Agreement Technologies*, Bergen, Norway, 6-7 December 2018. https://link.springer.com/chapter/10.1007/978-3-030-17294-7_2 **Best Early Researcher Paper Nomination**

Ştefan Sarkadi [2018]: Deception. *Proceedings of the 27th International Joint Conference on Artificial Intelligence, IJCAI 2018*, Stockholm, Sweden, 13-19 July 2018. <https://www.ijcai.org/proceedings/2018/834>

Workshops with Proceedings

Mosca, Francesca, Ştefan Sarkadi, Jose M. Such, Peter McBurney [2020]: Agent EXPRI: Licence to Explain. *Proceedings of 2nd International Workshop on EXplainable TRansparent Autonomous Agents and Multi-Agent Systems*, Auckland, New Zealand, 9-13 May 2020. https://link.springer.com/chapter/10.1007/978-3-030-51924-7_2

Workshops & Symposia

Ştefan Sarkadi [2019]: Deceptive Autonomous Agents. *Proceedings of the Shrivenham Defence and Security Doctoral Symposium*, Shrivenham, UK, 12-13 Nov 2019. https://cord.cranfield.ac.uk/articles/presentation/Deceptive_Autonomous_Agents/11558397

Ştefan Sarkadi, Peter McBurney, Simon Parsons [2019]: Deceptive Storytelling in Artificial Dialogue Games. *Proceedings of the AAIL 2019 Spring Symposium on Story-Enabled Intelligence*, Stanford, USA, 25-27 March 2019. <http://logical.ai/story/papers/sarkadi.pdf>

Alison R. Panisson, Ştefan Sarkadi, Peter McBurney, Simon Parsons, Rafael H. Bordini [2018]: Lies, B*Ilshit, and Deception in Agent-Oriented Programming Languages. *Proceedings of the 20th International TRUST Workshop (TRUST 2018)*, IJCAI 2018, Stockholm, Sweden, 14/15 July 2018. <http://ceur-ws.org/Vol-2154/paper5.pdf>

Edited Collections

Stefan Sarkadi, Benjamin Wright, Peta Masters, Peter McBurney [2021]. *Deceptive AI*. Springer CCIS vol.1296. <https://doi.org/10.1007/978-3-030-91779-1>

Online Handbook of Argumentation for AI [2021]. Vol.2. ArXiv. <https://arxiv.org/abs/2106.10832>

Online Handbook of Argumentation for AI [2020]. Vol.1. ArXiv. <https://arxiv.org/abs/2006.12020>

Book Chapters

Stefan Sarkadi [2020]: Argumentation-based Dialogue Games for Modelling Deception. In: *Online Handbook for Argumentation in AI Vol.1*.

Florin Lobonț, **Stefan Sarkadi** [2016]: Religion in the public cybersphere of social machines. 3e Colloque International Comsymbol (Comsymbol 2016), Montpellier, France, 9-10 Nov 2016. Book Chapter in Mihaela-Alexandra Tudor and Stefan Bratosin (Eds.): *Religion(s), Laïcité(s) Et Société(s) Au Tournant Des Humanités Numériques*.

Stefan Sarkadi [2016]: Artificial Consciousness in an Artificial World. In: M. Micle and C. Mesaroş (Eds.): *Communication Today: An Overview from Online Journalism to Applied Philosophy*, Trivent Publishing.

TALKS & LECTURES

How to Model Deception with AI

Deception and Autonomous Systems Seminar Series, WASP-HS

 May 2022

 Sweden, (online)

Trustworthy deceptive machines

Guest Lecture for Trust Systems Course, Faculty of Business & IT, Ontario Tech University


 Mar 2022

 Ontario, Canada (online)

Creating deceptive machines

UK National Cyber Deception Symposium

 Dec 2021

 Shrivenham, UK (online)

A Short Introduction into Deception & AI

Philosophy of AI Seminar Series, Dept. of Philosophy, West University of Timisoara


 May 2021

 Timisoara, Romania (online)

AI & Deception in Multi-Agent Systems

WIMMICS Seminar Series, Inria

 Feb 2021

 Sophia-Antipolis, France (online)

Deceptive AI

Distributed AI Seminar Series, King's College London

 Nov 2020

 London, UK (online)

AI & Ethics

Guest Lecture for the Artificial Intelligence Module, King's College London

 Dec 2019

 London, UK

Deceptive Autonomous Agents

Shrivenham Defence and Security Symposium

 Nov 2019

 Shrivenham, UK

Deceptive Storytelling in Argumentation Games

Reasoning and Planning Group Seminar, King's College London

📅 May 2019

📍 London, UK

Deceptive Storytelling in Artificial Dialogue Games

AAAI 2019 Spring Symposium

📅 March 2019

📍 Stanford, California

Towards an Approach for Modelling Uncertain Theory of Mind in Multi-Agent Systems

EUMAS-AT 2018

📅 Dec 2018

📍 Bergen, Norway

On the Formal Semantics of Theory of Mind in Agent Communication

EUMAS-AT 2018

📅 Dec 2018

📍 Bergen, Norway

Lies, Bullshit and Deception in Agent-Oriented Programming Languages

20th International TRUST Workshop @ IJCAI/AAMAS

📅 July 2018

📍 Stockholm, Sweden

Is Your AI Cheating on You?

Doctoral Consortium of IJCAI'18

📅 July 2018

📍 Stockholm, Sweden

Deception: A Multi-Agent Systems Approach

Guest Lecture for Advanced Research Topics in Computer Science Module, King's College London

📅 Nov 2017

📍 London, UK

Modelling Deception

Agents and Intelligent Systems PhD Symposium, King's College London

📅 Aug 2017

📍 London, UK

Introduction to Cognitive Science

Guest Lecture for the Psychology Module, Dept. of Philosophy, West University of Timisoara

📅 Jan 2016

📍 Timisoara, Romania