FRANCESCA MOSCA

Final Year PhD Candidate in Computer Science - Artificial Intelligence

@ **francesca.mosca@kcl.ac.uk** **London, UK** `https://francescamosca.github.io/`

- Versatile researcher committed to deeply understanding real-world problems and develop innovative solutions.
- Research focuses on human-centered AI (value-aligned and explainable) to improve people's online experience.
- Project management ability, from proof-of-concept to empirical evaluation (python, user studies).

EDUCATION

PhD in Computer Science @ King's College London

Oct 2017 – Present — London, UK

- Agent-based Modelling, Explainable AI, Human-Computer Interaction, Computational Social Choice, Privacy

MSc in Intelligent Systems @ King's College London

Sep 2016 – Sep 2017 — London, UK

- Awarded with Distinction; Core Modules: Artificial Intelligence, Multi-Agent Systems, Computer Vision, Pattern Recognition, Machine Learning

BSc, MSc in Mathematical Engineering @ Politecnico di Torino

Oct 2010 – Dec 2015 — Torino, Italy

- Core Modules: Business Intelligence, Database Management Systems, Statistical Models and Stochastic Processes, Cryptography and Information Theory, Financial Engineering

RELEVANT EXPERIENCE

PhD Research @ King's College London

Oct 2017 – Present — London, UK

- Value-driven Sensitive Design of *value-aligned* and *explainable* agent-based model for managing multi-user privacy online (e.g., sharing photos depicting multiple people with conflicting privacy preferences)
- Formal and empirical evaluation of the model (python)
- Focus on user-agent interaction evaluated with two user studies
- Research findings communicated in top AI conferences

PhD Research Fellow @ J.P. Morgan AI Research

Jan 2021 – Dec 2021 — London, UK

- Explainable AI and Fairness applications for managing the *Return To The Office* after COVID-19
- 6-month **Research Internship** Sept 2021 – Mar 2022

Co-Founder and Co-Editor @ Online Handbook of Argumentation for Artificial Intelligence

Sept 2019 – Present — London, UK

- Project development and promotion, in a team of five, of an annual PhD research anthology in the field of Argumentation in AI (OHAAI - `https://ohaai.github.io`)
- Management of peer review process and promotion of the project

Graduate Teaching Assistant @ Dept. of Informatics - King's College London

Oct 2017 – Present — London, UK

- Leading small group tutorials and lab sessions for MSc modules (Agents and Multi-Agent Systems, Artificial Intelligence, Cryptography, Data Mining, Computer Vision)
- *Buddy* (Student Mentor) for the UKRI CDT in Safe and Trusted Artificial Intelligence program

Data Scientist @ Reply Ltd - Machine Learning IT

Apr 2016 – Sep 2016 — Torino/Milano, Italy

- Application of machine learning techniques (R, python, SQL) for solving business problems

SKILLS

- *Requirements-driven design* of solutions
- *Formal proofs* of the designed theoretical models
- *Software simulations* for validating the theoretical model (**python**: networkx, pandas, scipy, matplotlib)
- *Qualitative UX research*: based on interdisciplinary studies (e.g., social science, psychology, privacy), design of both within-subjects and between-subjects user studies to evaluate users' attitudes and preferences
- Implementation of a *web platform* to conduct the user studies (**html**, **css**, **python**:Flask) and recruitment of suitable candidates (Prolific)
- *Quantitative UX research*: statistical analysis of user studies results (**python**: pandas, scipy, matplotlib) to evaluate the significance and effect size of the findings
- Writing *academic papers* for top AI conferences and internal *progress reports*
- Experience with **MATLAB** (Advanced Computing, Pattern Recognition and Computer Vision courseworks)
- Familiarity with **SQL** and **R** (Statistics, Database Management Systems and Business Intelligence courseworks; main tools when working as data scientist in Reply Ltd)
- *Presenting* my work to both expert (e.g., in conferences and workshops) and not-expert audiences (e.g., guest lecture in MSc course)
- *Teaching* and *explaining* technical material (Graduate Teaching Assistant for Agents and Multi-Agent Systems, Artificial Intelligence, Cryptography, Data Mining, Computer Vision)
- *Mentoring* junior colleagues ("Buddy" for the UKRI CDT in Safe and Trusted Artificial Intelligence program)
- *Peer-reviewing* for *IEEE Transactions on Dependable and Secure Computing*, *ACM Transactions on Internet Technology* and *Future Generation Computer Systems*; *PC member* for *International Workshop on Privacy Engineering 2021*
- Successful team-working abilities, proven by the positive outputs of the OHAAI project and during the Team Competition COVID-19 Response Challenge at AAMAS 2020
- Native Italian speaker, fluent in English, beginner in French and Romanian

GRANTS AND AWARDS

- *NMS Faculty Studentship Scheme*, King's College London (2017 – 2021)
- *AAMAS 2020 Student Grant* sponsored by the Artificial Intelligence Journal
- Winner of the Team Competition COVID-19 Response Challenge @ AAMAS DC 2020
- Winner of the People's Choice Award at the Research Spotlight Competition @ London Hopper Colloquium 2020
- *JPMorgan PhD Fellowship in AI Research* 2021
- *AAMAS 2021 Student Grant*

CERTIFICATIONS

- *Nature Masterclass*, Scientific Writing and Publishing (Three Parts) - June 2020
- Associate Fellow of Higher Education Academy - April 2019

PUBLICATIONS

Conference Proceedings

- Mosca, Francesca and Jose Such (2021). "ELVIRA: an Explainable Agent for Value and Utility-driven Multiuser Privacy". In: *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*.
- Mosca, Francesca (2020). "Value-Aligned and Explainable Agents for Collective Decision Making: Privacy Application". In: *Proceedings of the 19th International Conference on Autonomous Agents and MultiAgent Systems*, pp. 2199–2200.
- Mosca, Francesca, Ştefan Sarkadi, et al. (2020). "Agent EXPRI: Licence to Explain". In: *International Workshop on Explainable, Transparent Autonomous Agents and Multi-Agent Systems*. Springer, pp. 21–38.
- Mosca, Francesca, Jose M Such, and Peter McBurney (2020). "Towards a Value-driven Explainable Agent for Collective Privacy". In: *Proceedings of the 19th International Conference on Autonomous Agents and MultiAgent Systems*, pp. 1937–1939.

- Mosca, Francesca, Jose M Such, and Peter McBurney (2019). "Value-driven collaborative privacy decision making". In: *Proceedings of the AAAI Spring Symposium on Privacy-Enhancing Artificial Intelligence and Language Technologies (PAL)*.

Edited Books

- *Online Handbook of Argumentation for AI* (2021). Vol. 2. ArXiv.
- *Online Handbook of Argumentation for AI* (2020). Vol. 1. ArXiv.

TALKS

ELVIRA: An Explainable Agent for Value and Utility-driven Multiuser Privacy @ AAMAS

May 2021 — Virtual Event

An Explainable Assistant for Multiuser Privacy @ Cybersecurity Seminar, KCL

April 2021 — Virtual Event

Human-centered AI for Multiuser Privacy @ London Hopper Colloquium

October 2020 — Virtual Event

EXPRI, Agent EXPRI: Licence to Explain @ EXTRAAMAS

May 2020 — Virtual Event

Value-Aligned and Explainable Agents for Collective Decision Making: Privacy Application @ AAMAS Doctoral Consortium

May 2020 — Virtual Event

Towards a Value-driven Explainable Agent for Collective Privacy @ AAMAS

May 2020 — Virtual Event

Value-driven Collaborative Privacy Decision Making @ AAAI Spring Symposium

March 2019 — Stanford, CA

Automated Value-driven Decision Making for Privacy @ Reasoning and Planning Seminar, KCL

March 2019 — London, UK

Design of a Value-driven Decision Making Mechanism for Privacy @ Guest Lecture for Advanced Research Topics in Computer Science, King's College London

Nov 2018 — London, UK

POSTER PRESENTATIONS

Human-centered AI for Multiuser Privacy @ SophI.A Summit 2020 Conference

November 2020 — Virtual Event

EXAMPLE: an Explainable Agent for Avoiding Multiparty Privacy LEaks @ Faculty Poster Competition

November 2019 — King's College London

Value-driven Collaborative Privacy Decision Making @ AAAI Spring Symposium

March 2019 — Stanford, CA