ROSS GALES

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RESEARCH INTERESTS

Human-centred computing, human-computer interaction, AI explainability, AI for social good, open source intelligence (OSINT), responsible research and innovation (RRI), multiagent reinforcement learning

EDUCATION

Ph.D. in Computer Science,	**University of Oxford**	2022
Human-Centred Computing group		
Supervised by Prof. Jirotka		
Awarded departmental scholarship		
Master of Information Systems	**The University of Melbourne**	2014
Dean's Honour List (summa cum laude)		
Bachelor of Commerce	**The University of Melbourne**	2013
Bachelor of Information Systems	**The University of Melbourne**	2013
Alan Turing Institute Data Study Group	**Alan Turing Institute**	2019
Microsoft Research AI Summer School	**Microsoft Research, Cambridge**	2018
Deep Learning for Multi-GPUs	**NVIDIA Deep Learning Institute**	2021
Accelerated Data Science with RAPIDS	**NVIDIA Deep Learning Institute**	2021
Applications of AI for Anomaly Detection	**NVIDIA Deep Learning Institute**	2021

ACADEMIA

Associate Fellow of the Higher Education Academy (AFHEA) — 2022

University of Oxford, *Assistant Lecturer* — 2016-2022
- Developed syllabus for the master's course 'Requirements Engineering'.
- Introduced an ethics course into the undergraduate syllabus.

University of Oxford, *Teaching Assistant* — 2015-2022
- Developed and administered practical sessions for the courses: *Agile Methodologies, Requirements Engineering, Enterprise Architecture, and Object-Oriented Programming*.
- Provided technical support to senior lecturers.

New College School, *ICT Teacher* — 2019-2020
- Designed syllabi and taught programming with Python and Scratch.
- Demonstrated and taught computer construction.

INDUSTRY

Bellingcat, *Software Engineer* — 2022
- Developed network analysis tools for open-source intelligence software.
- Led team integrating findings from my Ph.D. research with software requirements.

Oxlogica, *Founder & Senior Software Engineer* — 2017-2022
- Created partnerships between academics and industry practitioners.
- Introduced state-of-the-art AI practices to emerging teams.

Harris Manchester College, Oxford, *Junior Dean* — 2017-2021
- Mentored undergraduate and master's students.
- Managed residential college and handled crises, including medical emergencies.

PROJECTS

Ph.D. Project – Social Media Intelligence in Disaster Management
- Conducted ethnographic studies of crisis response organisations for requirements engineering.
- Developed algorithm to extract situational intelligence from social media using network data.
- Validated findings through deployment of prototype in live disaster response scenarios.

Russian Invasion of Ukraine – War Crime Identification
- Deployed classification models which identified eyewitness data during invasion.
- Documented evidence of war crimes which contributed to the United Nations investigation.

Reinforcement Learning with Proximal Policy Optimisation
- Trained a PPO agent to play the board game 'Shobu' (action space of 65,536).
- Outperformed heuristic tree search model in ability and time complexity.
- Agent deployed as HTML5 web-app, played by over 3700 unique users.

Computer Game Development
- Shobu; turn-based abstract game with RL-trained AI.
- Grand strategy map interface generator with automatic border detection.
- 'Welcome To'; card drawing app.
- Antsolation; asynchronous multiplayer ant colony game.
- 'Civilisation'-styled hexagonal turn based strategy framework.

Hackathon Projects
- Slouch No More (posture correction app), awarded Judges Prize; Oxford Hack (2017)
- MindBridge: Fake News Detection; Oxford Foundry A.I. Impact Weekend (2018)
- Recruitment AI Explainability App; Oxford Foundry A.I. Impact Weekend (2019)
- Antsolation (asynchronous multiplayer ant colony game); Oxford Hack (2020)

HONOURS AND AWARDS

Ph.D. Research Scholarship, University of Oxford	Current
Microsoft Research AI Summer School Grant	2018
Judges Prize, Oxford Hack	2017
Dean's Honour List, The University of Melbourne	2014

PUBLICATIONS AND TALKS

Green Radio: Dynamic Power Saving Configuration for Mobile Networks	Alan Turing Institute, 2020
Harnessing Interdisciplinarity to Promote the Ethical Design of AI Systems	ECAIR, 2019
#HurricaneHarvey: Community Sensemaking During Hurricane Events	Pending
Detecting On-The-Ground Twitter Users in Crises	Pending
Teaching Agile with Board Games: Empirical Study of getKanban	Under Review
Network Analysis for Social Media Data	University of Oxford, 2022
Understanding Twitter Data for Sociologists	University of Oxford, 2020
Network Analysis for Information Discovery	PSC-E Conference, Bled, 2018
Social Media in Disaster Response	TU Graz, 2018

REFERENCES

Prof. M. Jirotka	*Ph.D. Supervisor*; Professor, University of Oxford	marina.jirotka@cs.ox.ac.uk
Dr. H. Webb	*Research Group Colleague;* Senior Researcher, University of Nottingham	helena.webb@nottingham.ac.uk
Dr. C. Anslow	*Co-Lecturer on SEP*; Senior Lecturer, Victoria University of Wellington	craig@ecs.vuw.ac.nz