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

University of Oxford	PhD in Computer Science, *"Social Media Intelligence in Disaster Response"* • *Awarded departmental scholarship*	2023
The University of Melbourne	Master of Information Systems • *Dean's Honour List (first in class)*	2014
	Bachelor of Commerce	2013
	Bachelor of Information Systems	2013
Alan Turing Institute	Alan Turing Institute Data Study Group	2019
Microsoft Research, Cambridge	Microsoft Research AI Summer School	2018
NVIDIA Deep Learning Institute	Deep Learning for Multi-GPUs	2021
	Accelerated Data Science with RAPIDS	2021
	Applications of AI for Anomaly Detection	2021

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
- Facilitated eight partnerships between academics and industry practitioners.
- Trained emerging teams in state-of-the-art AI practices.

Harris Manchester College, Oxford, *Junior Dean* — 2017-2021
- Mentored 375 undergraduate and master's students.
- Managed residential college and responded to crises, including medical emergencies.

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: *Requirements Engineering, Agile Methodologies, Enterprise Architecture, Object-Oriented Programming, Agile Engineering Practices, Software Process Quality and Improvement*
- 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 hardware construction and 3D printing.

PROJECTS

Ph.D. Project – Social Media Intelligence in Disaster Response
- 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 1.2 terabytes of 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 5,000 unique users.

Game Development
- Shobu; abstract game with tree search and RL-trained AI, played by over 5,000 unique users.
- 'Welcome To'; card drawing app using bootstrap sampling and motion tweening.
- Antsolation; asynchronous multiplayer ant colony game modelling distributed intelligence.
- 'Civilisation'-style hexagonal turn based strategy framework used by over 100 developers.
- Grand strategy map interface with computational border detection.

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 Hackathon	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