Hannah Bailey

University of Oxford

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Personal Profile

I am a final year PhD candidate at the University of Oxford, where I specialize in applying NLP, statistical modeling, machine learning and computer vision to analyze the spread of disinformation on social media.

Education

Oxford Internet Institute, University of Oxford   *October 2020 - July 2024*

DPhil (PhD) in Social Data Science

- Awarded Shirley Scholarship Global Merit Award and Dieter Schwarz Foundation Award
- Supervised by Professor Phil Howard and Dr. Tom Nicholls
- **Thesis:** The Art of Digital Persuasion: A Social Data Science Study of China's Attempts to Influence International Discourse

University of Oxford   *October 2018 - October 2020*

MSc in Social Science of the Internet and MSc in Contemporary Chinese Studies   *Distinction*

- **Courses:** Natural Language Processing, Statistics, Research Design for Data Science, Quantitative Methods in Social Science

London School of Economics   *September 2015 - July 2018*

BSc Hons. in Politics and Philosophy   *First Class with Honors*

- Awarded LSE Government Department Dissertation Prize for best undergraduate dissertation
- Awarded LSE and Fudan University Fred Halliday Mandarin Language Scholarship Award to study Mandarin at Fudan University

Experience

Oxford Internet Institute, University of Oxford   *June 2020 - Present*

Seminar Instructor and Teaching Assistant

- Led graduate-level MSc in Data Science seminars on 'Introduction to Python' and interdisciplinary 'Digital Social Research: Methods Core' course.

Programme on Democracy and Technology, University of Oxford   *December 2021 - October 2022*

Researcher

- Published data-driven research on China's use of inauthentic bots for disinformation on major platforms like Twitter and Facebook.
- Presented research findings to legislative and governmental bodies, including the UK and European Parliaments and the Canadian Government.
- Advised tech companies, including Facebook and Twitter, on our research regarding state-backed media account labeling policies, contributing to ongoing platform improvements.

Computational Propaganda Project, University of Oxford   *February 2020 - December 2021*

Researcher

- Conducted large-scale data analysis to produce policy-relevant reports on organized social media manipulation, covering trends across 81 countries.
- Published research on COVID-19 disinformation campaigns by state-backed news outlets, quantifying their reach and impact.
- Corresponded with national media outlets such as *The New York Times*, the *BBC*, and *The Washington Post* to disseminate findings.

Alternative News Networks, University of Oxford   *May 2020 - September 2020*

Researcher

- Gathered data from Reddit, Twitter, Facebook, and YouTube to monitor divisive narratives in the UK.
- Generated real-time analytics and weekly reports to inform UK Home Office and regulatory stakeholders on the spread and amplification of harmful content.

Skills

Programming   Python (PyTorch, pandas, Sklearn, matplotlib, seaborn), Linux, High Performance Computing (slurm), Git, LaTeX

Languages   English (Native), Mandarin (Learner)

Selected Publications

Bailey, Hannah. "Sentiment in Statecraft: A Natural Language Processing Analysis of China's Digital Diplomacy." *Under review at American Political Science Review*

Bailey, Hannah. "Discursive Statecraft: China's Information Operations." Report No. GPP03. Westminster, UK: Council on Geostrategy, 2023.

Thorley, Martin, Sam Hogg, **Hannah Bailey**, and Meia Nouwens. "China Index: Measuring PRC Influence Around the Globe: The United Kingdom". Taiwan: Doublethink Lab, 2022.

Schliebs, Marcel, **Hannah Bailey**, Jonathan Bright, and Philip N. Howard. "China's Public Diplomacy Operations: Understanding Engagement and Inauthentic Amplification of PRC Diplomats on Facebook and Twitter". Programme on Democracy and Technology, Oxford University, 2021.

Schliebs, Marcel, **Hannah Bailey**, Jonathan Bright, and Philip N. Howard. "China's Inauthentic UK Twitter Diplomacy: A Coordinated Network Amplifying PRC Diplomats". Programme on Democracy and Technology, Oxford University, 2021.

Bradshaw, Samantha, **Hannah Bailey**, and Philip N. Howard. "Industrialized Disinformation: 2020 Global Inventory of Organized Social Media Manipulation". Project on Computational Propaganda, Oxford University, 2021.

Bradshaw, Samantha, Ualan Campbell-Smith, Amelie Henle, Antonella Perini, Sivanne Shalev, **Hannah Bailey**, and Philip N. Howard. "Country Case Studies in Industrialized Disinformation: 2020 Global Inventory of Organized Social Media Manipulation". Project on Computational Propaganda, Oxford University, 2021.

Bright, Jonathan, Hubert Au, **Hannah Bailey**, Mona Elswah, Marcel Schliebs, Nahema Marchal, Christian Schwieter, Katerina Rebello, and Philip N. Howard. "Coronavirus Coverage by State-Backed English-Language News Sources". Data Memo 2020.2. Project on Computational Propaganda, Oxford University, 2020.

Selected Conference Paper Presentations

Bailey, Hannah (2023) "Visual Communication in Influence Operations: An Unsupervised Machine Learning Approach". Paper to be presented at Thirteenth Annual Conference on New Directions in Analyzing Text as Data (TADA 2023), November 9–10, Amherst, MA, USA.

Bailey, Hannah, Hannah Kirk, and Philip N. Howard (2022) "Quantifying Idea Diffusion in China's AI Policymaking: A Natural Language Processing Analysis". Paper presented at the 118th Annual Meeting of the American Political Science Association, September 15–28, Montréal, Québec, Canada.

Bailey, Hannah (2022) "Sentiment in Statecraft: A Natural Language Processing Analysis of China's Digital Diplomacy". Paper presented at the 118th Annual Meeting of the American Political Science Association, September 15–28, Montréal, Québec, Canada.

Elswah, Mona, Marcel Schliebs, **Hannah Bailey**, Jonathan Bright and Philip N. Howard (2022) "Engaging Social Media Audiences: A Comparative Study Between English-Language State-Backed Media Outlets". Paper presented at the 72nd Annual Meeting of the International Communication Association, March 26–30, Paris, France.

Bailey, Hannah (2018) "China's Two Faced Rhetoric: Mobilizing Citizens and Calming Foreigners?". Poster presented at Ninth Annual Conference on New Directions in Analyzing Text as Data (TADA 2018), September 21-22, 2018, Seattle, Washington, USA.

Working Papers

Bailey, Hannah, Hannah Kirk, and Philip N. Howard. "Quantifying Idea Diffusion in China's AI Policymaking: A Natural Language Processing Analysis".

Bailey, Hannah. "Visual Communication in Influence Operations: An Unsupervised Machine Learning Approach".

Bailey, Hannah and Philip N. Howard. "The Instigators and Targets of Organised Social Media Manipulation: Global Index 2022".

Bailey, Hannah and Tom Nicholls. "Understanding the Diffusion of Novel Information Using Unsupervised Embedding Techniques".

Awards

2022	**Dieter Schwarz Foundation Award**, Research Programme on AI, Government and Policy	*£23,500 GBP*
2020	**Shirley Scholarship: Global Merit Award**, Oxford Internet Institute, University of Oxford	*£40,710 GBP*
2018	**Dissertation Prize**, London School of Economics Government Department	
2017	**Fred Halliday Mandarin Language Scholarship Award**, London School of Economics and Fudan University	

Selected Media Features

The Editorial Board (2021). Running a Disinformation Campaign is Risky. So Governments are Paying Others to do it. *The Washington Post*, August 17.

Fisher, Max (2021). Disinformation for Hire, a Shadow Industry, Is Quietly Booming. *The New York Times*, July 25.

Ni, Vincent (2021). China Has Used Pandemic to Boost Global Image, Report Says. *The Guardian*, May 12.

Sudworth, John (2021). China's Pressure and Propaganda – the Reality of Reporting Xinjiang. *BBC News*, January 15.

The Economist (2021). A Growing Number of Governments are Spreading Disinformation Online. *The Economist*, January 13.