

# Edward (Ned) Cooper

PHD CANDIDATE

1/303 Darling Street, Balmain, NSW, 2041

☎ +61 431 187 254 | ✉ edward.cooper@anu.edu.au

## Education

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### Australian National University

DOCTOR OF PHILOSOPHY

Jul 2021–Jan 2025

- Human-Computer Interaction (HCI), Cybernetics
- Advisors: Professor Alex Zafiroglu, Associate Professor Liz Williams, Dr. Ben Swift
- Research Affiliate at the Machine Intelligence and Normative Theory (MINT) lab
- Additional coursework in Programming (Python), Mathematics for Machine Learning (Linear Algebra, Multivariable Calculus, Probability and Statistics), and Deep Learning (PyTorch, fast.ai), Computational Methods for Network Science (current)

### Australian National University

MASTER OF SCIENCE, APPLIED CYBERNETICS

Feb 2020–Feb 2021

- High Distinction across all subjects
- Autonomy, Agency, and Assurance (3A) Institute

### University of New South Wales

GRADUATE CERTIFICATE OF SOCIAL IMPACT

Feb 2016–Jul 2017

- Award from the Centre of Social Impact to undertake elective subjects of an MBA

### Australian National University

GRADUATE DIPLOMA OF LEGAL PRACTICE

Jul 2013–Jul 2014

- For admission as a Lawyer in New South Wales and Australia

### University of Technology Sydney

BACHELOR OF LAWS (FIRST CLASS HONOURS)

Feb 2008–Nov 2012

- High Distinction for Honours thesis
- Honours thesis advisor (Criminology): Professor Thalia Anthony
- Research Assistant to Professor Helen Irving - University of Sydney (Constitutional Law)
- Exchange scholar at the University of Copenhagen, Denmark to complete masters-level subjects in international law

## Experience

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### Google Research

Aug 2022–Aug 2023

STUDENT RESEARCHER, RESPONSIBLE AI AND HUMAN-CENTERED TECHNOLOGIES

Sydney, Australia

Investigated how to improve speech and language technologies for Australian Aboriginal and Torres Strait Islander communities. Publication at EAACL '24 based on this work. Advisors: Ben Hutchinson and Courtney Heldreth.

### Google Research

Nov 2020–Feb 2021

RESEARCH ASSOCIATE, PEOPLE + AI RESEARCH

Remote

Investigated how community-based participatory research and its philosophy might be incorporated into the machine learning development process. Publication at CHI '22 partly based on this work. Advisors: Jess Holbrook and Lauren Wilcox.

### NBN Co

Feb 2018–Feb 2020

NETWORK STRATEGY MANAGER

Sydney, Australia

NBN Co is a Commonwealth government-owned corporation tasked with connecting Australia and bridging the digital divide by designing, building and operating Australia's wholesale broadband access network. At NBN Co, I managed virtual teams across product, engineering, finance, regulatory and legal functions. Key projects included: managing key workstreams to reduce Fixed Wireless upgrade budget from \$1.3bn to \$800m; managing strategic planning for upgrades to and replacement of the Satellite network; shaping regulatory policy related to network upgrades and new developments; developing business cases for State government investment in the network.

## Aboriginal Legal Service

May 2017–Feb 2018

### SENIOR LAWYER AND POLICY OFFICER

Sydney, Australia

The Aboriginal Legal Service (ALS) provides free legal services and representation to Aboriginal people. At the ALS, I led the policy unit during a busy period of government reviews and inquiries. This involved managing all written and verbal submissions to the State and Federal government with respect to laws that are discriminatory or unfair to Aboriginal people.

## Nous Group

May 2012–May 2017

### SENIOR CONSULTANT

Sydney, Australia; London, UK

Nous Group is the largest Australian-headquartered management consulting firm. At Nous, I worked on projects with public, private and social sector clients to address strategic challenges and to develop and evaluate economic and social policies. From 2014–2017 I managed over eight projects, predominately with central government and social services agencies, as well as financial services organisations. Developed and managed Nous' first two Reconciliation Action Plans (RAP).

## Transparency International

Jul 2015–Jan 2016

### LAWYER

Guatemala City, Guatemala

Conducted legal analysis and prepared court documents to support strategic litigation against members of the government for corruption. Supported logistics planning and performed election monitoring to ensure the security of voters and the validity of the democratic process in the 2015 presidential election. (*On leave from Nous Group*)

## Publications

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*Stringently peer-reviewed*

**Cooper, N**, Zafiroglu, A. 2024. From Fitting Participation to Forging Relationships: The Art of Participatory ML. *Accepted to the Conference on Human Factors in Computing Systems (CHI '24)*. (9.8% acceptance rate for short papers)

**Cooper, N**, Heldreth, C, Hutchinson, B. 2024. "It's how you do things that matters": Attending to Process to Better Serve Indigenous Communities with Language Technology. *Accepted to the Proceedings of the 18th Conference of the European Chapter of the Association for Computational Linguistics (EACL '24)*. (16.7% acceptance rate for short papers)

Wang, S\*, **Cooper, N\***, Eby, M. 2023. From Human-Centered to Social-Centered Artificial Intelligence: Assessing ChatGPT's Impact through Disruptive Events. *arXiv:2306.00227*. *Revise and Resubmit at Big Data & Society*.

**Cooper, N**. 2022. Would the Trees Dim the Lights? Adopting the Intentional Stance for More-Than-Human Participatory Design. *Participatory Design Conference (PDC '22) Participatory Design Conference 2022: Volume 2 (PDC 2022 Vol. 2)*, August 19–September 1, 2022, Newcastle upon Tyne, United Kingdom. ACM, New York, NY, USA, 5 pages.

**Cooper, N**, Horne, T, Hayes, G.R, Heldreth, C, Lahav, M, Holbrook, J, Wilcox, L. 2022. A Systematic Review and Thematic Analysis of Community-Collaborative Approaches to Computing Research. *Conference on Human Factors in Computing Systems (CHI '22)*, April 29–May 5, 2022, New Orleans, LA, USA. ACM, New York, NY, USA, 18 pages. (24.7% acceptance rate)

*Lightly peer-reviewed*

**Cooper, N**. 2023. STS and Feedback Processes for LLMs. *AusSTS Conference 2023: Contributing to and with STS*. 17–18 July, Sydney, Australia.

Berman, G, Dowell, A, **Cooper, N**, Young, L. 2023. Reflections on Encounters with AI Institutes. *AusSTS Conference 2023: Contributing to and with STS*. 17–18 July, Sydney, Australia.

**Cooper, N**. 2023. Bridging Deliberative Democracy and Deployment of Societal-Scale Technology. *CHI '23 Workshop on Designing Technology and Policy Simultaneously*. 23 April, Hamburg, Germany.

Berman, G\*, **Cooper, N\***. 2022. Machine Masquerade: An Interactive Exploration of the Limits of Machine Recognition. *Australian Conference on Human-Computer Interaction 2022: Connected Creativity*. 30 November–2 December, Canberra, Australia.

Prabhudesai, S\*, **Cooper, N\***. 2022. The Potential Harms of Algorithmic Hand-offs. *Workshop on Human-Machine Collaboration in a Changing World 2022 (HMC '22)*. 1–2 December, Paris, France.

Vido, J\*, **Cooper, N\***. 2022. The Artist Formerly Known As Your Computer: Ensuring Safe and Responsible Human-Machine Collaboration with Automated Media Generation Tools. *Workshop on Human-Machine Collaboration in a Changing World 2022 (HMC '22)*. 1–2 December, Paris, France.

- Cooper, N.** 2022. Challenges for the Participation of Local Communities in the Review of Automated Systems and Algorithmic Decisions Used by Local Governments. *CSCW '22 Workshop on "Who Has an Interest in 'Public Interest Technology?'"*. 13 November, Virtual.
- Cooper, N,** Broad, E. 2022. Enabling Participation in the Review and Redesign of Algorithms: Lessons from Law Reform. *Social Responsibility of Algorithms Workshop (SRA '22)*. June 13–17, Canberra, Australia.
- Asadi, A\*, **Cooper, N\***, Ibrahim, M\*, Ruster, L\*. 2022. The Multi-Level Perspective of Mobility Management During a Pandemic: Analysing the Case of the Home Quarantine South Australia App. *Social Responsibility of Algorithms Workshop (SRA '22)*. June 13–17, Canberra, Australia.
- Cooper, N\***, Mainali, N\*, Ruster, L\*, Teffera, T\*. 2021. Creating Intelligent Taps: Introducing a Computer Vision Prototype 'Tappy' for Efficient and Responsible Household Water Use, *Hydrology & Water Resources Symposium 2021: Poster presentation*, 31 August–1 September, Virtual. Engineers Australia.
- Bell, G, Zafiroglu, A, Assaad, Z, Bradley, C, **Cooper, N**, O'Brien, E, Reid, K, Ruster, L. 2021. Custodians and Midwives – The Library of the Future: Research and Analysis on Artificial Intelligence and Emerging Technologies, *Report prepared for The National Library of Australia*. School of Cybernetics.
- Cooper, N**, Shaw, G. 2017. Investing in the Future - The Impact of Youth Programs in Remote Central Australia: An SROI analysis, *Report prepared for the Central Australian Youth Link-Up Service*. Nous Group,
- Cooper, N\***, Joffe, G\*, Johnston, T\*. 2014. Collaboration Between Sectors to Improve Customer Outcomes for Citizens of NSW, *Report prepared for the NSW Public Service Commission*. Nous Group.

\*Equal contribution

## Workshops

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- Andres, J, Danta, D, Bianchi, A, Hong, S, Li, Z, Sandoval, EB, Martin, CP, **Cooper, N.** 2024. Understanding and Shaping Human-Technology Assemblages in the Age of Generative AI, *Designing Interactive Systems (DIS) Conference - in progress*. July, Copenhagen, Denmark.
- Berman, G\*, **Cooper, N\***, Horn, Z\*, Young, L\*. 2023. PhD Winter Workshop in Critical Technology Studies, *ARC Centre of Excellence for Automated Decision-Making and Society (ADM+S)*. July, Sydney, Australia.

\*Equal contribution

## Selected Policy Submissions

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- Individual submission, 2023, Supporting Responsible AI, *Australian Government - Department of Industry, Science, and Resources*.
- Central Australian Youth Link-Up Service, 2019, Inquiry into Expenditure on Children in the Northern Territory, *Australian Government - Productivity Commission*.
- Aboriginal Legal Service, 2018, Inquiry into the Adequacy of Youth Diversion Programs, *NSW Parliament*.
- Aboriginal Legal Service, 2017, Review of Community Legal Centre (CLC) Services, *NSW Department of Justice*.
- Aboriginal Legal Service, 2017, Inquiry into the Provision of Drug Rehabilitation Services in Regional, Rural and Remote New South Wales, *NSW Parliament*.
- Aboriginal Legal Service, 2017, Inquiry into the Incarceration Rate of Aboriginal and Torres Strait Islander people, *Australian Government - Australian Law Reform Commission*.

## Awards

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2021-2025	<b>Florence MacKenzie Memorial Scholarship</b> , Australian National University	\$73,420 AUD
2021-2025	<b>Research Training Program Scholarship</b> , Australian Government	\$128,282 AUD
2024	<b>Vice-Chancellor's HDR Travel Grant</b> , Australian National University	\$1,500 AUD
2024	<b>Conference Grant</b> , Google Research	\$3,000 USD
2023	<b>Conference Grant</b> , Google Research	\$3,000 AUD
2020-2021	<b>3A Institute Masters Stipend</b> , Australian National University	\$50,000 AUD
2020-2021	<b>3A Institute Masters Scholarship</b> , Australian National University	\$35,180 AUD
2017	<b>Discovery Project DP170100003 - Allegiance and Citizenship in Australian Law and History</b> , Australian Research Council (Assistant to Professor Helen Irving)	\$153,000 AUD
2016-2017	<b>Centre of Social Impact National Award</b> , University of New South Wales	\$10,000 AUD
2011	<b>Exchange Scholarship</b> , University of Technology, Sydney	\$1,000 AUD
2008 - 2012	<b>Equity Access Scholarship</b> , University of Technology, Sydney	\$8,800 AUD

## Teaching

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2024	<b>Tutor / Guest Lecturer</b> , (LAWS8405) Artificial Intelligence, Law & Society
2023	<b>Guest Critic</b> , (CYBN8001) Building Cyber-Physical Systems
2023	<b>Guest Lecturer</b> , (POGO8136) Participating in Public Policy: Citizen Engagement and Public Talk

## Academic Service

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2024	<b>Organising Committee</b> , Australasian Language Technology Association (ALTA) Workshop
2024	<b>Reviewer (Ethics)</b> , International Conference on Machine Learning (ICML)
2024	<b>Reviewer</b> , Conference on Designing Interactive Systems (DIS)
2024	<b>Program Committee</b> , Conference on Fairness, Accountability, and Transparency (FAccT)
2024	<b>Engagement, Research, and Impact Committee</b> , School of Cybernetics
2023, 2024	<b>Reviewer</b> , Conference on Human Factors in Computing Systems (CHI)
2022	<b>Proceedings Chair</b> , Australian Conference on Human-Computer Interaction (OzCHI)

## Other Service

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2013-2021	<b>Volunteer Lawyer, Policy Officer and Data Analyst</b> , Aboriginal Legal Service
2017-2019	<b>Volunteer Policy Officer</b> , Central Australian Youth Link Up Service
2018	<b>Board Observer</b> , Child Abuse Prevention Service
2011 - 2014	<b>iTrack Youth Mentor</b> , The Smith Family

## Skills

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**Data Analysis:** Excel, SQL, Alteryx, Tableau, Power BI

**Programming:** Python (NumPy, Pandas, Matplotlib, Seaborn), HTML/CSS/JavaScript, LaTeX

**Machine Learning:** PyTorch, scikit-learn

**Research Methods:** Interviews, Ethnography, Surveys, Statistical Analysis

**Languages:** English, Spanish (B2), German (A2)