## Geoff Keeling

**♀** London, United Kingdom

## **Employment**

Senior Research Scientist, Google Research.	2023-Present
Bioethicist, Google Health.	2021-2023
Postdoctoral Fellow, Institute for Human-Centered AI & Center for Ethics in Society, Stanford University	. 2020–2021
Research Assistant, Leverhulme Centre for the Future of Intelligence, University of Cambridge.	2019-2020

### **Affiliations**

Fellow, Institute of Philosophy, School of Advanced Study, University of London.	2024-Present
<b>Associate Fellow</b> , Leverhulme Centre for the Future of Intelligence, <i>University of Cambridge</i> .	2020-Present

## Education

<b>PhD Philosophy</b> , <i>University of Bristol</i> , No Corrections.	2017-2020
MA Philosophy, University of Bristol, Distinction in all Components (Rank: 1st/24)	2016-2017
<b>BSc Philosophy, Logic, and Scientific Method</b> , <i>London School of Economics</i> , First Class (Rank: Joint 1st/51)	2013-2016

#### Research

Ethics of AI/ML, Moral and Political Philosophy, Bioethics, Cognitive Science.

## **Papers**

- 1. Gabriel, I.\*, Manzini, A.\*, **Keeling, G.\***, ..., Agüera y Arcas, B., Isaac, W., & Manyika, J. (2024). The ethics of advanced AI assistants. *arXiv preprint arXiv:2404.16244*. (\*Equal Contribution) [Media: WIRED, CBS, The Information, Axios, The Verge, MSN, Tech Policy Press, MarkTechPost]
- 2. **Keeling, G.\***, Street, W.\*, Stachaczyk, M., Zakharova, D., Comṣa, I., Sakovych, A., Logothetis, I., Zhang, Z., Agüera y Arcas, B., & Birch, J. (2024). Can LLMs make trade-offs involving stipulated pain and pleasure states? *arXiv preprint arXiv:2411.02432v1.* (\*Equal Contribution) [Media: Scientific American, The Guardian]
- 3. Keeling, G. & Street, W. (2024). On the attribution of confidence to large language models. *Inquiry*, 1-27.
- 4. Manzini, A., **Keeling, G.**, Marchal, N., McKee, K., Reiser, V., Haas, J., & Gabriel, I. (2024, June). Should users trust advanced AI assistants? Justified trust as a function of competence and alignment. In: *Proceedings of FAccT '24: ACM Conference on Fairness, Accountability, and Transparency.*
- 5. Manzini, A., **Keeling, G.**, Alberts, L., Vallor, S., Ringel Morris, M., & Gabriel, I. (2024, October). The code that binds us: Navigating the appropriateness of human-AI assistant relationships. In: *Proceedings of the Seventh AAAI/ACM Conference on AI, Ethics, and Society.* [ Runner Up: Best Paper Award]

- 6. El-Sayed, S., Akbulut, C., McCroskery, A., **Keeling, G.**, Kenton, Z., Jalan, Z., Marchal, N., Manzini, A., Shevlane, T., Vallor, S., Susser, D., Franklin, M., Bridgers, S., Law, H., Rahtz, M., Shanahan, M., Tessler, M.H., Douillard, A., Everitt, T., & Brown, S. (2024). A mechanism-based approach to mitigating harms from persuasive generative AI. *arXiv preprint arXiv:2404.15058.* [Media: VentureBeat]
- 7. Street, W., Siy, J.O., **Keeling, G.**, Baranes, A., Barnett, B., McKibben, M., Kanyere, T., Lentz, A., Agüera y Arcas, B., & Dunbar, R. (2024). LLMs achieve adult human performance on higher-order theory of mind tasks. *arXiv preprint arXiv:2405.18870v1*.
- 8. Schaekermann, M., Spitz, T., Pyles, M., Cole-Lewis, H., Wulczyn, E., Pfhol, S.R., Martin, D., Jaroensri, R., **Keeling, G.**, Liu, Y., Farquhar, S., Xue, Q., Lester, J., Hughes, C., Strachan, P., Tan, F., Bui, P., Mermel, C.H., Peng, L.H., Matias, Y., Corrado, G.S., Webster, D.R., Virmani, S., Semturs, C., Liu, Y., Horn, I., & Chen, P-H.C. (2024). Health equity assessment of machine learning performance (HEAL): a framework and dermatology AI model case study. *Lancet eClinical Medicine*. [Media: MarkTechPost]
- 9. Alberts, L., **Keeling, G.**, & McCroskery, A. (2024). Should agentic conversational AI change how we think about ethics? Characterising an interactional ethics centred on respect. *arXiv preprint arXiv:2401.09082v2*.
- 10. **Keeling, G.**, Lange, B., McCroskery, A., Pedersen, K., Weinberger, D., & Zevenbergen, B. (2024). Moral imagination for engineering teams: The technomoral scenario. *International Review of Information Ethics*, 34(1).
- 11. Lange, B.\*, **Keeling, G.\***, McCroskery, A., Zevenbergen, B., Blascovich, S., Pedersen, K., Lentz, A., & Agüera y Arcas, B. (2023). Engaging engineering teams through moral imagination: a bottom-up approach for responsible innovation and ethical culture change in technology companies. *AI and Ethics*, 1-10. (\*Equal Contribution)
- 12. Keeling, G. (2023). Algorithmic bias, generalist models, and clinical medicine. AI and Ethics, 1-12.
- 13. **Keeling, G.** & Nyrup R. Explainable machine learning, patient autonomy, and clinical reasoning. In: Véliz, C. (Ed). (2023). *Oxford Handbook of Digital Ethics* (pp. 528–552). Oxford University Press.
- 14. Keeling, G. (2023). A dilemma for reasons additivity. Economics & Philosophy, 39(1), 20-42.
- 15. Grote, T. & **Keeling, G.** (2022). Enabling fairness in healthcare through machine learning. *Ethics and Information Technology*, *24*(*3*), 39.
- 16. **Keeling, G.** Automated vehicles and the ethics of classification. In: Jenkins, R., Cerný, D., & Hríbek, T. (Eds). (2022). *Autonomous Vehicle Ethics: The Trolley Problem and Beyond* (pp. 41-57). Oxford University Press.
- 17. Grote, T. & **Keeling, G.** (2022). On algorithmic fairness in medical practice. *Cambridge Quarterly of Healthcare Ethics*, 31(1), 83-94.
- 18. **Keeling, G.** & Burr, C. Digital manipulation and mental integrity. In: Jongepier, F., & Klenk, M. (2022). *The Philosophy of Online Manipulation* (pp. 253-271). Routledge.
- 19. **Keeling, G.** & Paterson, N. (2022). Proper functions: etiology without typehood. *Biology & Philosophy*, 37(3), 19.
- 20. Bommasani, R., ..., **Keeling, G.**, ..., & Liang, P. (2021). On the opportunities and risks of foundation models. *arXiv* preprint arXiv:2108.07258. [Media: Forbes, The Economist, VentureBeat, WIRED]
- 21. **Keeling, G.** (2020). Why trolley problems matter for the ethics of automated vehicles. *Science and Engineering Ethics*, *26*(1), 293-307.
- 22. **Keeling, G.**, Evans, K., Thornton, S. M., Mecacci, G., & Santoni de Sio, F. Four perspectives on what matters for the ethics of automated vehicles. In: Meyer, G. & Beiker, S. (Eds). (2019). *Road Vehicle Automation 6* (pp. 49-60). Springer International Publishing.
- 23. **Keeling, G.** (2018). Legal necessity, Pareto efficiency & justified killing in autonomous vehicle collisions. *Ethical Theory and Moral Practice*, 21(2), 413-427.

- 24. **Keeling, G.** Against Leben's Rawlsian collision algorithm for autonomous vehicles. In: Müller, V. (Ed). (2018). *Philosophy and Theory of Artificial Intelligence 2017* (pp. 259-272). Springer International Publishing.
- 25. Keeling, G. (2018). The sensitivity argument against child euthanasia. Journal of Medical Ethics, 44(2), 143-144.
- 26. Keeling, G. (2018). Autonomy, nudging and post-truth politics. Journal of Medical Ethics, 44(10), 721-722.
- 27. **Keeling, G.** (2017). Commentary: Using virtual reality to assess ethical decisions in road traffic scenarios: applicability of value-of-life-based models and influences of time pressure. *Frontiers in Behavioral Neuroscience*, 11, 247-48.

## **Talks**

#### 1. Do Large Language Models Have Credences?

AI and Ethics Workshop, Princeton University, 2024.

Institute for Ethics in Technology, Hamburg University of Technology, 2024.

2. Can LLMs Make Trade-Offs Involving Stipulated Pain and Pleasure States? with Winnie Street.

Institute of Philosophy, School of Advanced Study, University of London, 2024.

#### 3. The Ethics of Advanced AI Assistants.

Being Human in the Age of AI, Institute of Philosophy, 2024.

Conference on the Ethics of Generative AI & Conversational Agents, LMU Munich, 2024.

#### 4. Educational Impact of Advanced AI Assistants.

AI in Education Workshop, University of Bristol, 2024.

## 5. Autonomy, Advice-Giving, and AI Assistants.

Autonomy in an AI World, Imperial College London, 2024.

6. Engaging Google Teams Through Moral Imagination, with Amanda McCroskery, Ben Zevenbergen, et al.

Paris Conference on AI & Digital Ethics, 2023.

NeurIPS Workshop on Cultures in AI/AI in Culture, 2022.

7. Panel: Fairness in Machine Learning, with Sam Corbett-Davies and Susan J. Brison.

Neukom Institute for Computational Science, Dartmouth College, 2022.

#### 8. Algorithmic Bias, Generalist Models, and Clinical Medicine.

Workshop on the Ethics of Influence, University of Oxford, 2022.

#### 9. The Ethics of Autonomous Vehicles.

Philosophy and AI Seminar, Meta, 2022.

Center for Human-Compatible AI, UC Berkeley, 2021.

#### 10. Enabling Fairness in Healthcare through Machine Learning.

Stereotyping and Medical AI Colloqium, King's College London, 2021.

#### 11. Digital Manipulation and Mental Integrity, with Christopher Burr.

Workshop on the Philosophy of Online Manipulation, 2021.

#### 12. A Dilemma for Reasons Additivity

Political Theory Workshop, Stanford University, 2021.

#### 13. On Algorithmic Fairness in Medical Practice, with Thomas Grote.

Workshop on Algorithmic Fairness, University of Copenhagen, 2020.

#### 14. Decision Support Systems and Clinical Reasoning, with Rune Nyrup.

Leverhulme Centre for the Future of Intelligence, University of Cambridge, 2020.

Philosophy of Medical AI Workshop, University of Tübingen, 2020.

Issues in Explainable AI, Saarland University, 2019.

#### 15. Proper Functions: Etiology Without Typehood, with Niall Paterson.

9th Philosophy of Biology and Cognitive Sciences Workshop, University of the Basque Country, 2019. British Society for the Philosophy of Science, University of Durham, 2019.

#### British overety for the 1 miosophy of verence, Oniversity of Burnam, 2017.

2nd CEPPA Graduate Conference on Moral and Political Philosophy, University of St Andrews, 2019.

Automated Vehicles Symposium, Orlando FL, 2019.

Research Institute for Ethics and Law, Swansea University, 2019.

iCog5: Approaches to Higher Cognitive Function, University of Reading, 2019.

16. Object Classification, Autonomous Vehicles, and the Reasonable Belief Standrd

Smart Cities Workshop, University of Bristol, 2019.

#### 17. Uncertainty About Persons in Autonomous Vehicle Collisions

Automated Vehicles Symposium, San Francisco, CA, 2018.

# 18. Panel: Ethical and Social Implications of Autonomous Vehicles, with Nicholas G. Evans, Noah Goodall, Ryan Jenkins, and Katherine Evans.

Automated Vehicles Symposium, San Francisco, CA, 2018.

#### 19. Against Leben's Rawlsian Algorithm for Autonomous Vehicles

Philosophy and Theory of Artificial Intelligence, University of Leeds, 2017.

Artificial Ethics Symposium, University of Southampton, 2017.

#### 20. Reliability Weighted Belief Revision in Peer Disagreements, with Nemo D'Orill.

Graduate Conference on Epistemology of Disagreement, University of Tartu, 2017.

9th European Congress of Analytic Philosophy, LMU Munich, 2017.

#### 21. Blame in Autonomous Vehicle Collisions

10th Symposium on Computing and Philosophy, Annual Convention of the Society for the Study of Artificial Intelligence and the Simulation of Behaviour, University of Bath, 2017.

#### Service

Organising Committee, Paris Conference on AI & Digital Ethics.	2024
Program Committee, AI Alignment Track, AAAI Conference on Artificial Intelligence.	2024
Program Committee, FAccT, Association for Computing Machinary.	2022-2023
<b>Program Committee</b> , Explanatory AI: Between Ethics and Epistemology, <i>TU Delft</i> .	2021-2022
<b>Program Committee</b> , Bias and Discrimination in Algorithmic Decisions, <i>Leibniz University, Hannover</i> .	2021-2022
Program Committee, Philosophy After AI Symposium, AISB.	2019-2020
President, British Postgraduate Philosophical Association.	2018-2019
Executive Committee Member, British Philosophical Association.	2018-2019

## **Teaching**

Ethics, Law, and Politics of Artificial Intelligence, Primary Instructor, Stanford University.  Political Philosophy, Seminar Tutor, University of Bristol.  Research Methods for Social Science, Seminar Tutor and Guest Lecturer, University of Bristol.  Formal Logic, Seminar Tutor, University of Bristol.	2020-2021 2019-2020 2018-2019 2017-2018
Ad-Hoc Teaching  Fairness in Machine Learning Cuest Lecture Princeton University	2024
Fairness in Machine Learning, Guest Lecture, Princeton University.  Do LLMs have credences?, Guest Lecture, Drake University, with Winnie Street.	2024
Moral Imagination for Responsible Inovation, Guest Lecture, LMU Munich, with Benjamin Lange.	2024
Fairness in Machine Learning, Guest Lecture, Princeton University.	2023
Black Boxes and Explainability, Guest Lecture, Chinese University of Hong Kong.	2021
Ethics of Medical AI, Guest Lecture, Utrecht University.	2020
Awards	
PhD Studentship, Arts and Humanities Research Council, c.a. £55,000.	2017-2020
Awarded through the South, West and Wales Doctoral Training Partnership.	
Andrea Mannu Prize, London School of Economics.	2016
Awarded for joint-best performance across all undergraduate philosophy programs (joint-1st/51).	
Research Students	
Lize Alberts, DPhil Candidate in Computer Science, University of Oxford.	2023
Primary supervisor for 3 month Student Researcher engagement at Google Research.	
Public Policy	
Law Commission of England and Wales and Scottish Law Commission.	2021
Consulted for the 2022 joint report on 'Autonomous Vehicles.' [Link]	
Wider Engagement	
Fireside Chat: AI Cognition and Consciousness, with Henry Shevlin.	2025
Homerton College, University of Cambridge.	
Panel: Industry-Academia Collaboration in Responsible AI, with Murray Shanahan & Winnie Street.	2024
Leverhulme Centre for the Future of Intelligence, University of Cambridge.	
Talk: Thinking about AI Consciousness, with Winnie Street.	2024
LSE Philosophy Society, London School of Economics.	
Panel: AI, Tech and Humanities Careers, with Harriet Walker, Dora Szabo & Genevieve Liveley.	2024
South, West and Wales Doctoral Training Partnership.	2027
Panel: Careers in Philosophy, with Leticia García Martínez, Hamza King, Rachel Ghaw & Jefferson Courtne	y. 2024

Department of Philosophy, Logic, and Scientific Method, London School of Economics.	
Panel: Careers in AI Ethics and Policy, with Risto Uuk & Ashyana-Jasmine Kachra.	2024
London School of Economics.	
Podcast: Could AI Undermine Informed Consent?, with Rune Nyrup & Reid Blackman.	2024
Ethical Machines Podcast.	
Panel: Spotlight on Ethical AI, with Mandeep Soor, Ismael Garcia & Timothy Wu.	2023
London School of Economics.	
Talk: Ethics and Large Language Models.	2023
Penningtons Manches Cooper & Ethical Reading.	
Talk: Practical Ethics in Silicon Valley.	2022
Uehiro Centre for Practical Ethics, University of Oxford.	
Talk: Teaching AI Ethics: Lessons from Stanford and Google.	2022
National Symposium on Developing Socially Responsible STEM Professionals, City, University of London.	
Talk: Practical Ethics in Tech.	2021
Let's Phi: Beyond Academic Philosophy.	
Talk: AI Ethics and the Long Term Future.	2021
CreAItivity Workshop (for underprivileged high school students).	
Talk: Philosophy Careers Outside Academia.	2021
Department of Philosophy, University of Bristol.	
Talk: Medical Reasoning in the Age of Artificial Intelligence.	2020
Milton Keynes Artificial Intelligence Expert Forum.	
Panel: Artificial Intelligence in Healthcare, with Kourosh Saeb-Parsy, Slawomir Nasuto & Weizi Vicky Li.	2019
Austin Vita & Ethical Reading Public Event on AI in Healthcare.	
Talk: The Ethics of Automated Vehicles.	2018
St Edward's School, Oxford.	

## **Peer Review**

Referee for Nature, Nature Machine Intelligence, Philosophical Studies, British Journal for the Philosophy of Science, Journal of Applied Philosophy, Utilitas, Journal of Ethics, Synthese, Journal of Medical Ethics, Ethics and Information Technology, Science and Engineering Ethics, Philosophy and Technology, Res Publica, AI and Society, IEEE Transactions on Technology and Society, IEEE Intelligent Transportation Systems Transactions, IEEE Access, and Virtual Reality. I have also refereed for ACM FAccT, NeurIPS and AAAI/ACM Conference on AI, Ethics and Society, alongside the MIT Press and the John Templeton Foundation.