

# Eamon Duede

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## Academic Positions

### Harvard University

Postdoctoral Fellow, 2023 - Present  
*Digital, Data, and Design Institute*

## Education

### University of Chicago

Ph.D. Philosophy & Ph.D. History and Philosophy of Science, 2017 - 2023 (with honors)  
*(Joint PhD) Department of Philosophy & Committee on Conceptual and Historical Studies of Science*

Fellow, AI-enabled Molecular Engineering of Materials and Systems for Sustainability, 2021 - 2023  
*Pritzker School of Molecular Engineering*

A.M. Humanities (Philosophy), 2008 - 2011

### University of Cambridge

Visiting Student, Leverhulme Centre for the Future of Intelligence, Spring 2023  
Sponsor: Marta Halina

### Loyola University Chicago

B.A. Philosophy, 2003 - 2007 (with honors)

## Research Areas

**Specialization:** Artificial Intelligence & Machine Learning | Trust & Trustworthy AI | Philosophy of Science

**Competence:** Ethics of AI | Epistemology | History of Science | Sociology of Science

## Peer Reviewed Journal Articles

Eamon Duede. [“Deep Learning Opacity in Scientific Discovery”](#) *Philosophy of Science* (Forthcoming)

Eamon Duede. [“Instruments, Agents, & Artificial Intelligence: Novel Epistemic Categories of Reliability”](#) *Synthese*, 2022

Misha Teplitskiy, Eamon Duede, Michael Menietti, and Karim R. Lakhani. [“How status of research papers affects the way they are read and cited.”](#) *Research Policy*, 2022

**Media Coverage:** *Times Higher Education*, *LSE Impact Blog*

Feng Shi, Misha Teplitskiy, Eamon Duede, and James A. Evans. [“The Wisdom of Polarized Crowds.”](#) *Nature Human Behavior*, 2019

**Media Coverage:** *CNN*, *Scientific American*, *Harvard Business Review*, *Forbes*, *Nature*, *Nautilus*, *New Scientist*, *Daily Mail*, *UChicago News*

Eamon Duede and Victor Zhorin. [“Convergence of Economic Growth and the Great Recession as Seen From a Celestial Observatory.”](#) *EPJ Data Science*, 2016

**Media Coverage:** *UChicago News*

Misha Teplitskiy, Grace Lu, and Eamon Duede. [“Amplifying the Impact of Open Access: Wikipedia and the Diffusion of Science.”](#) *Journal of the Association for Information Science and Technology*, 2016

**Winner: Best Student Paper**, 2015, *Association for Information Science & Technology*, special interest group for *Measurement of Information Production & Use*

**Media Coverage:** *MIT Tech Review*, *LSE Impact Blog*

## Peer Reviewed Conference Proceedings

Zhi Hong, J. Gregory Pauloski, Aswathy Ajith, Eamon Duede, Kyle Chard & Ian Foster. [“The Diminishing Returns of Masked Language Models to Science.”](#) *Findings of the Association for Computational Linguistics (ACL)’23*, 2023 (Forthcoming)

Yadu Babuji, Kyle Chard, Eamon Duede, and Ian Foster. [“Safe Collections and Stewardship on Cloud Kotta.”](#) *Safe Data ‘17 workshop at IEEE eScience ‘17*, 2017

Yadu Babuji, Kyle Chard, and Eamon Duede. [“Enabling Interactive Analytics of Secure Data using Cloud Kotta.”](#) *Science Cloud ‘17 workshop at ACM International Symposium on High-Performance Parallel and Distributed Computing*, 2017

Yadu Babuji, Kyle Chard, Aaron Gerow, and Eamon Duede. [“Cloud Kotta: Secure and Scalable Data Analytics in the Cloud.”](#) *IEEE BigData ‘16*, 2016

Yadu Babuji, Kyle Chard, Aaron Gerow, and Eamon Duede. [“A Secure Data Enclave and Analytics Platform for Social Scientists.”](#) *IEEE eScience ‘16*, 2016

Misha Teplitskiy, Grace Lu, and Eamon Duede. [“The Transmission of Scientific Knowledge to Wikipedia.”](#) *International Association for the Advancement of Artificial Intelligence Conference on Weblogs and Social Media (ICWSM’15 Oxford, UK)*, 2015

Aaron Gerow, Bowen Lou, Eamon Duede, and James A. Evans. [“Proposing Ties in a Dense Hypergraph of Academics”](#) *SocInfo ‘15*, 2015

## Manuscripts in Review

Eamon Duede. “Deep Learning and Representational Models” (Revise & Resubmit)

Eamon Duede, Misha Teplitskiy, Karim R. Lakhani, & James A. Evans. “Being Together in Place as a Catalyst for Scientific Advance” (Revise & Resubmit at *Research Policy*)

Eamon Duede & James A. Evans. “The Social Abduction of Science”

## Honours, Awards, Grants

Named “Rising Star in Data Science”, *Data Science Institute*, University of Chicago, 2022

Fellow, AI-enabled Molecular Engineering of Materials and Systems for Sustainability, *National Science Foundation*, 2021 - 2023

HiPSS Prize Lectureship, 2022

Fellow, Diverse Intelligences Summer Institute, 2021

(PI) *Latent Knowledge Capture on Covid-19 Literature*, Google, 2020 (\$20,000)

(Co-PI) *Engineering Opportunity: Identifying optimal skill and relationship mixtures for individual, enterprise, and regional prosperity*. Center for Data and Computing, w/ James Evans, Lingfei Wu, Matt Gee, 2019 (\$50,000)

(Workshop Grant) *When Technology Transforms Society: Considering the Societal and Ethical Impacts of Quantum Computing and AI*. Center for Data and Computing, w/ Chihway Chang, Daniel Bowring, Brian Nord, 2019 (\$15,000)

LinkedIn Economic Graph Research Awardee, 2017

Fishbein Fellowship, 2017 - 2022

University of Chicago Social Sciences Fellowship, 2017 - 2020

**Winner: Best Student Paper**, 2015, *Association for Information Science & Technology*, special interest group for *Measurement of Information Production & Use* for "Amplifying the Impact of Open Access: Wikipedia and the Diffusion of Science."

Amazon Research Award, 2015 (\$50,000)

Departmental Honors B.A. in Philosophy, *Loyola University of Chicago*

## Refereed Conference Presentations

"Epistemic Safety for AI Safety", *SAS23 - Reliability or Trustworthiness?*, Stuttgart, DE., 2023 (Scheduled)

"Instruments, Agents, and Artificial Intelligence: Novel Epistemic Categories of Reliability", *SAS23 - Reliability or Trustworthiness?*, Stuttgart, DE., 2023 (Scheduled)

"The Social Abduction of Science", *Society for the Social Studies of Science*, Honolulu, HI., 2023 (Scheduled)

"Deep Learning Opacity in Scientific Discovery", *The American Philosophical Association Central Division 120<sup>th</sup> Annual Meeting*, Colloquium Paper, Denver, CO., 2023

"Deep Learning Opacity in Scientific Discovery", *Philosophy of Science Association (PSA 2022) 28th Biannual Meeting*, Pittsburgh, PA., 2022

"Distance Matters in Science and Scholarship", *8th International Conference on Computational Social Science (IC<sup>2</sup>S<sup>2</sup>)*, Chicago, IL., 2022

"Accelerating Computational Social Science with ScholarBERT", *8th International Conference on Computational Social Science (IC<sup>2</sup>S<sup>2</sup>)*, Chicago, IL., 2022

"Ethical Frameworks for Balancing Bystander Risk with Public Health Priorities in Social Network Research", *Sunbelt 2022*, Cairns, Australia, 2022

"Digital Analogues", *Social Sci Foo*, 2022 (Virtual due to COVID-19)

"Being Together in Place as a Catalyst for Scientific Advance", *Seminars in Economic Geography*, 2022 (Virtual due to COVID-19)

"Being Together in Place as a Catalyst for Scientific Advance", *Networks 2021: A Joint Conference of Sunbelt and NetSci*, 2021 (Virtual due to COVID-19)

"Citations and Impact: Evidence from ground-truth measures of influence", *2020 Bibliometrics and Research Assessment Symposium*, National Institutes of Health, 2020 (Virtual due to COVID-19)

"Distance Matters in Science and Scholarship", *11<sup>th</sup> Annual International Science of Team Science Conference*, Duke University, Durham, NC, 2020 (Virtual due to COVID-19)

"Deep Neural Networks and the Philosophy of Science", *Overcoming Opacity in Machine Learning*, Society for the Study of Artificial Intelligence and the Simulation of Behaviour (AISB) annual convention, St. Mary's University, London, 2020 (Cancelled due to COVID-19)

"Do Citations Measure Influence?", *17<sup>th</sup> International Conference on Scientometrics & Informetrics*, Rome, Italy, 2019

"What do Citations Measure?" *Innovation Growth Lab*, Berlin, Germany, 2019

"Why (almost) Everything We Know About Citations is Wrong: Evidence from Authors", *23<sup>rd</sup> International Conference on Science and Technology Indicators (STI 2018)*, Leiden, Netherlands, 2018

"Why Citations Don't Mean What We Think They Mean: Evidence from Citers", *4<sup>th</sup> Annual International Conference on Computational Social Science*, Northwestern University, Evanston, IL., 2018

"The Wisdom of Polarized Crowds", *4<sup>th</sup> Annual International Conference on Computational Social Science*, Northwestern University, Evanston, IL., 2018

"Do Citations Measure Influence?", *MIT Economic Sociology Working Group*, MIT, Cambridge MA., 2017

"Wisdom of Politically Polarized Crowds", *Meeting of the Society for the Social Studies of Science (4S)*, Boston, 2017

"Wisdom of Polarized Crowds", *Collective Intelligence Conference*, NYC, 2017 (Poster)

"Convergence of Economic Growth and the Great Recession as Seen From a Celestial Observatory", *Mind Bytes 2017*, Chicago, 2017 (Poster)

"Amplifying Open Access: Wikipedia and the Diffusion of Science", *Quantifying Science* a workshop at the *Conference on Complex Systems*, Tempe, 2015

"Proposing Links in a Mined Hypergraph of Academics", *110<sup>th</sup> Annual Meeting of the American Sociological Association*, Chicago, 2015

"The Transmission of Scientific Knowledge to 50 Wikipedias: Coverage and the Role of Accessibility", *9<sup>th</sup> International Conference on Web and Social Media*, Oxford University, Oxford, UK., 2015

## Invited Talks, Panels, & Workshops

"After Science: AI and the Aims of Science", *Lingnan / Cambridge conference on the philosophy of AI in science*, University of Cambridge, Cambridge, UK., 2023

"Being Together in Place as a Catalyst for Scientific Advance", *The Emergence of Innovation in New Places*, Mansueto Institute for Urban Innovation, Chicago, IL., 2023

"Epistemics of AI-Infused Science", *Leverhulme Centre for the Future of Intelligence*, University of Cambridge, Cambridge, UK., 2023

"Epistemics of AI-Infused Science", *Department of Philosophy of Science and Technology of Computer Simulation*, High-Performance Computing Center Stuttgart, Stuttgart, DE., 2023

Symposium Paper Commentary: "Functional Psychology and the Computer Model of Mind", by Howard Callaway, *The American Philosophical Association Eastern Division 119<sup>th</sup> Annual Meeting*, Montreal, Quebec, Canada, 2023

"AI in Society: Inductive Risk and the Problem of Value Alignment", *Practical Philosophy Workshop*, University of Chicago, Chicago, IL., 2023

"Optimizing AI for the Human Loop", *Harnessing Data for Materials Symposium*, Chicago, IL., 2022

"Quantifying Scholarly Engagement with Artificial Intelligence", *Parsl & funcXfest 2022*, Chicago, IL., 2022

"Deep Learning Opacity in Scientific Discovery", *The International Philosophy of Biology Working Group*, University of Texas at Austin, 2022 (Virtual due to COVID-19)

"Instruments, Agents, and Artificial Intelligence: Novel Epistemic Categories of Trust", *Theoretical Philosophy Workshop*, University of Chicago, Chicago, IL., 2022

"Being Together in Place as a Catalyst for Scientific Advance", *Seminars in Economic Geography*, 2022 (Virtual due to COVID-19)

Discussant: "Evolution and the Metabolism of Error: Biological Practice as Foundation for a Scientific Metaphysics", by William Wimsatt, *History and Philosophy of Science Workshop*, University of Chicago, 2021 (Virtual due to COVID-19)

Panel Moderator: "Interdisciplinary Data Science Panel" at *Rising Stars in Data Science Workshop*, 2021 (Virtual due to COVID-19)

"Distance Matters in Science and Scholarship", *ParslFest 2020*, 2020 (Virtual due to COVID-19)

"Diverse Intelligences, Distance, & the Logic of Influence", *Crossref*, 2020 (Virtual due to COVID-19)

"Deep Neural Networks and the Philosophy of Science", *Theoretical Philosophy Workshop*, University of Chicago, Chicago, IL., 2020

"Distance Matters in Science and Scholarship", *Laboratory for Innovation Science*, Harvard University, Cambridge, MA., 2020

Discussant: "Horizontal Persistence and the Complexity Hypothesis", by Aaron Novick, *History of Human Sciences*, University of Chicago, 2020

Discussant: "Generative Entrenchment and Modularity", by William Wimsatt, *History of Human Sciences*, University of Chicago, 2020

Discussant: "Affect and Inference: Genealogies of Affect Recognition in AI", by Alex Campolo, *Affect and Emotions Workshop*, University of Chicago, 2020

"Diverse Intelligences, Distance, & the Logic of Influence.", *Workshop in the History and Philosophy of Science*, University of Chicago, Chicago, IL., 2019

"Word Embedding with Python" *Data Therapy*, University of Chicago, 2019

"Model Realism and Theory Detection" *Center for Data Science and Computing Research*, University of Chicago, 2019

"Roads of Influence" *Laboratory for Innovation Science*, Harvard University, 2019

"Model Realism and Theory Detection" *Environmental Data Science Seminar Series*, University of Chicago, 2019

"Social Syllogisms Drive the Logic of Scientific Advance", *Workshop in the History and Philosophy of Science*, University of Chicago, Chicago, IL., 2018

"The Wisdom of Politically Polarized Crowds" *Center for Data Science and Computing Research*, University of Chicago, 2018

"How We Cite, and What It Means for Measuring the Value of Science: Survey Evidence from 12,000 Authors", *Laboratory for Innovation Science*, Harvard University, Cambridge, MA., 2018

"Big Data, Innovation, and Insights into the Complexities of the Scientific Enterprise" at *Science Works: Measuring the Innovation Output of Science*, Netherlands, 2017

"Hacking the Web of Science" at *ALA 2017*, Chicago, 2017

"The Wisdom of Politically Polarized Crowds" at *WikiCite 2017*, Vienna, Austria, 2017

Panelist: "Co/Eval" at *Converge: Disciplinarity and Digital Scholarship*, Los Angeles, 2017

Panel Moderator: "Computation and analytics are driving innovation across disciplines in new and interesting ways" at *Mind Bytes 2017*, Chicago, 2017

"Computational Social Science" at *Research Computing Center*, University of Chicago, 2017

"Delphi: Leveraging Research Analytics to Understand and Navigate the Research Enterprise", *The John Templeton Foundation*, Philadelphia, 2016

"Toward a Theory of Peer Review", *PLOS*, San Francisco, 2016

"Science of Peer Review", *PLOSCast*, San Francisco, 2016

"Science of Science", *PLOSCast*, Berlin, Germany, 2016

"Data and Machine Enabled Science", *Globus World*, Argonne National Lab, 2015

"A Search for Knowledge About Knowledge", *Center for Robust Decision Making on Climate and Energy Policy*, University of Chicago, 2014

"Knowledge Lab", *Computation Institute Student Engagement Lightning Talk*, University of Chicago, 2013

## Other Publications

"Citation counts reinforce the influence of highly cited papers and nudge us towards undervaluing those with fewer", *The London School of Economics: Impact Blog*, 2022

"Harnessing Polarized Minds", *Nature: After the Paper*, 2020

"Finding Wisdom in Politically Polarized Crowds", *Nature: Behind the Paper*, 2019

"Are Politically Diverse Teams More Effective?", w/ Feng (Bill) Shi, Misha Teplitskiy, and James A. Evans, *Harvard Business Review*, 2019

"Wikipedia is significantly amplifying the impact of Open Access publications", *The London School of Economics: Impact Blog*, 2015

(A 'Top Post' of 2015)

## Professional Service

Co-Organized with Harlin Lee and Rishi Sonthalia: "Networks in Science of Science" a Satellite Symposium at *NetSci 2023*, Vienna, Austria, 2023

Co-Organized with James A. Evans and Rebecca Willett: "Trusted Intelligence in Society Workshop", 2022 - 2023

Co-Organized with Jeff Lockhart, Chris Esposito, and Donghyun Kang: "Social Sciences Bootcamp for Natural Scientists", *Pritzker School of Molecular Engineering*, Chicago, IL., 2023

Special Advisor, *University of Chicago Division of the Social Sciences*, 2021 - 2023

Co-Organized with James A. Evans the "Technology Session" of the *American Sociological Association*, 2021

Co-Organized with Chihway Chang, Daniel Bowring, Brian Nord: "When Technology Transforms Society: Considering the Societal and Ethical Impacts of Quantum Computing and AI" *Workshop*, Chicago, 2019

Research Mentor *Data and Computing Summer Lab & Computation Institute Summer Internship Program*, 2014 - 2020

Coordinator, "Seminar on Important Things", *Committee on the Conceptual and Historical Studies of Science*, University of Chicago, 2018 - 2019

Special Advisor, *University of Chicago Research Development Services*, 2017 - 2023

Special Advisor, *ARETE*, University of Chicago, 2014 - 2017

Co-Director with Kyle Chard and Alison Brizius of the *Computation Institute Summer Internship Program*, 2014 - 2018

Co-Organized with Ian Foster and Julia Lane: "Safe data: A workshop on paradigms and platforms for safe analysis of sensitive data", a one day workshop at *eScience2017*, Auckland, New Zealand, 2017

Co-Organized with Feng Shi and Valentin Danchev: "Knowledge Networks in Science and Technology", a Satellite Symposium at *NetSci 2017*, Indianapolis, 2017

Co-Organized with Rayid Ghani and Joe Walsh: "Computational Social Science & Public Policy Colloquium", a monthly speaker series co-organized with *Knowledge Lab* and the *Center for Data Science & Public Policy*, Chicago, 2017

Chicago Innovation Exchange Advisory Group, 2013 - 2016

Co-Organized with Katy Börner and James Pringle: "Web of Science as Research Dataset", a two-day workshop organized with *Thomson Reuters*, Bloomington, 2016

Co-Organized "B<sup>3</sup>: Big Questions, Big Data, Big Computation", a joint conference with *Microsoft Research*, Chicago, 2016

Co-Organized with James A. Evans and Dashun Wang: "International Symposium on the Science of Science", a two-day conference held at the *Library of Congress*, Washington D.C., 2016

Organized "About Discovery Engines: Under the Hood", a monthly workshop series at the *University of Chicago's Computation Institute*, 2015 - 2016

Co-Organized, "Information, Interaction, and Influence", a two-day workshop co-organized with *Knowledge Lab* and *Digital Science* at the University of Chicago, 2014

Co-Organized with *hack@uchicago*, "Fall 2014 Hackathon", a two-day, data science focused, event featuring tools and techniques workshops. Chicago, 2014

Co-Organized "In the Loop: A City Data and Digital Manufacturing STEM Learning Project", a 6 week course on computer programming, data analysis, and digital fabrication for Chicago high school students. Chicago, 2014

## Peer Review(er)

Proceedings of the National Academy of Sciences (PNAS) | Nature Human Behavior | Philosophy of Science | Synthese | Minds and Machines | Philosophy & Technology | European Journal for Philosophy of Science (EJPS) | American Journal of Sociology (AJS) | PLoS One | ACM FAccT

## Teaching & Advising

The Science and Philosophy of Artificial Intelligence (Designed & Sole Instructor), *University of Chicago*, (2021 - 2022)

B.A. Thesis Advisor to Bobby Zhang, *University of Chicago*, (2019 - 2020)

Ethics in the Digital Age (TA), *University of Chicago*, (Fall 2020)

Modern Logic and the Structure of Knowledge (TA), *University of Chicago*, (Winter 2020)

Elementary Logic (TA), *University of Chicago*, (Fall 2019)

Philosophy of Quantum Mechanics (TA), *University of Chicago* (Winter 2019)

Computer Science Graduate Practicum Advisor, *University of Chicago* (2014 - 2017)

"In the Loop: A City Data and Digital Manufacturing STEM Learning Project", a 6 week course on computer programming, data analysis, and digital fabrication for *Chicago Public Schools* high-school students (2014)

Elementary Logic (Sole Instructor), *Harold Washington College* (2011, 2012, 2013)

Introduction to Philosophy (Sole Instructor), *Harold Washington College* (2011, 2012, 2013)

Introduction to Ethics (Sole Instructor), *Harold Washington College* (2011, 2012, 2013)

## Media Coverage of Research

"Citation counts reinforce the influence of highly cited papers and nudge us towards undervaluing those with fewer", *The London School of Economics: Impact Blog*, 2022

"FAREED'S TAKE: Democrats win with a big tent", *CNN*, 2020

"Finding Wisdom in Politically Polarized Crowds", *Nature: Behind the Paper*, 2019

"Are Politically Diverse Teams More Effective?", *Harvard Business Review*, 2019

"Wikipedia and the Wisdom of Polarized Crowds: A lesson in how to break out of filter bubbles", *Nautilus*

"The Wisdom of Crowds Requires the Political Left and Right to Work Together", *Scientific American*

"Wikipedia encourages healthy debate among people with different political views", *Daily Mail*, 2019



"Wikipedia's civil wars show how we can heal ideological divides online", *New Scientist*, 2019

"Academics cite work they don't know particularly well", *Times Higher Education*, 2018

"Testing Economics From the Celestial Observatory", *UChicago News*, 2016

"Science of Peer Review", *PLOSCast*, 2016

"Science of Science", *PLOSCast*, 2016

"The Impact of Open Access Scientific Knowledge", *Brookings TechTank*, 2016

"Why Wikipedia + Open Access = Revolution", *X<sub>b</sub> MIT Technology Review*, 2015

"Wikipedia, open access and knowledge dissemination", *OpenScience.com*, 2015

"Wikipedia is significantly amplifying the impact of Open Access publications", *The London School of Economics: Impact Blog*, 2015

## Technical Skills

Python, R, HPC for Big Data, L<sup>A</sup>T<sub>E</sub>X

## Languages

Natural: English (Native) | German (Working)

## Other Employment

Founder, *Philosophic Ai*, 2015 - Present

Special Advisor, *Knowledge Lab*, University of Chicago, 2017 - 2023

Executive Director, *Knowledge Lab*, University of Chicago, 2013 - 2017

Co-Founder and CTO, *Practice Prism*, 2015 - 2017

Administrator, *The Metaknowledge Research Network*, 2013 - 2016

Co-Founder and CEO, *SwiftDates*, LLC., 2012 - 2013

Sr. Director, *HR-Meter International*, 2007 - 2013

Instructor of Philosophy, *Harold Washington College*, 2012 - 2013

## References

Available upon request