

# Konstantin Genin

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## Area of Specialization

Philosophy of Science, Philosophy of AI, Formal Epistemology, Causal Discovery, Learning Theory

## Academic Positions

*Assistant Professor* Fall 2025—  
Department of Philosophy  
University of Utah.

*Leader of Independent Research Group:* Spring 2020—Fall 2025  
“Epistemology and Ethics of Machine Learning,”  
at the Cluster of Excellence:  
“Machine Learning: New Perspectives for Science,”  
Department of Computer Science  
Eberhard Karls Universität Tübingen.

*Postdoctoral Fellow* Fall 2018—Spring 2020  
Department of Philosophy  
University of Toronto.

## Education

*Doctor of Philosophy:* Logic, Computation and Methodology Fall 2012—Spring 2018  
Department of Philosophy, Carnegie Mellon University  
Dissertation Title: *The Topology of Statistical Inquiry*.  
Dissertation Advisor: Kevin T. Kelly.

*Master of Science:* Logic, Computation and Methodology Fall 2012—Spring 2015  
Department of Philosophy, Carnegie Mellon University  
Thesis Title: *Theory Choice, Theory Change, and Inductive Truth-Conduciveness*.  
Thesis Advisor: Kevin T. Kelly.

*Bachelors of Arts:* Mathematics and Philosophy Fall 2005—Spring 2009  
Departments of Mathematics and Philosophy resp., Brown University  
Magna Cum Laude

## Primary Supervision

PhD Student, Raysa Benatti Summer 2023—Present  
Group Member “Epistemology and Ethics of Machine Learning,”  
Project Title: *Algorithmic auditing of intimate partner violence risk assessment tools.*

PhD Student, Sebastian Zezulka Summer 2022—Present  
Group Member “Epistemology and Ethics of Machine Learning,”  
Project Title: *Performativity and Fairness in Machine Learning: A Methodology for Evaluating Algorithmic Policies.*

(Visiting) PhD Student, Mykhailo Bogachov Summer 2023—Summer 2024  
Group Member “Epistemology and Ethics of Machine Learning,”  
Project Title: *Ethical Implications of Performative Prediction in Machine Learning.*

Postdoctoral Fellow, Dr. Vlasta Sikimić March 2022—June 2023  
Group Member “Epistemology and Ethics of Machine Learning,”  
Project Title: *Ethics, Privacy and Fairness in Digital Education Environments.*

Postdoctoral Fellow, Dr. Sander Beckers June 2021—January 2023  
Group Member “Epistemology and Ethics of Machine Learning,”  
Project Title: *Causal Reasoning for the Ethical Development of AI.*

## Under Review

Conor Mayo-Wilson, Jiaqi Wang, Konstantin Genin. “Minimax Estimation of Average-Treatment Effects in Randomized Experiments” Submitted to: *Neural Information Processing Systems*, 2026.

Philip Boeken, Eduardo Skapinakis, Konstantin Genin, Joris M Mooij. “Topological Criteria for Hypothesis Testing with Finite-Precision Measurements.” Submitted to: *Annals of Statistics*.

Eduardo Skapinakis, Philip Boeken and Konstantin Genin “Statistics meets Computability” Submitted to: *Machines, Computations and Universality*, 2026.

Sebastian Zezulka, Konstantin Genin. “Predictions as Public Reasons” Submitted to: *Ergo*.

## Publications

Konstantin Genin, Thomas Grote, Thomas Wolfers (2024) “Computational Psychiatry and the Evolving Concept of a Mental Disorder.” *Synthese*, 204(3).

Sebastian Zezulka, Konstantin Genin (2024) “From the Fair Distribution of Predictions to the Fair Distribution of Social Goods.” *ACM Conference on Fairness, Accountability, and Transparency* (FAccT).

Thomas Grote, Konstantin Genin, Emily Sullivan (2024) “Reliability in Machine Learning.” *Philosophy Compass*, 19(5).

Sebastian Zezulka, Konstantin Genin (2023) “Performativity and Prospective Fairness.” *NeurIPS Workshop: Algorithmic Fairness Through the Lens of Time*.

Konstantin Genin, Conor Mayo-Wilson (2022) “Success Concepts for Causal Discovery,” *Behaviormetrika*, 51: 515–538.

Konstantin Genin (2022) “On Falsifiable Statistical Hypotheses.” *Philosophies*, 7(2).

Konstantin Genin (2021) “Statistical Undecidability in Linear, Non-Gaussian Models in the Presence of Latent Confounders.” *Thirty-Fifth Conference on Neural Information Processing Systems* (NeurIPS).

Konstantin Genin, Thomas Grote (2021) “Randomized Controlled Trials in Medical AI: A Methodological Critique.” *Philosophy of Medicine*, 2(1).

Konstantin Genin, Conor Mayo-Wilson (2020). “Statistical Decidability in Linear, Non-Gaussian Models.” *NeurIPS Workshop: Causal Discovery and Causality-Inspired Machine Learning*.

Konstantin Genin, Franz Huber (2020). “Formal Representations of Belief.” in Edward N. Zalta, ed., *The Stanford Encyclopedia of Philosophy*.

Konstantin Genin (2019). “Full and Partial Belief.” in Richard Pettigrew and Jonathan Weisberg, eds., *The Open Handbook of Formal Epistemology*. PhilPapers Foundation, 437–498.

Konstantin Genin, Kevin T. Kelly (2018). “Theory Choice, Theory Change and Inductive Truth-Conduciveness.” *Studia Logica*, 107(5): 948–989.

Konstantin Genin, Kevin T. Kelly (2017). “The Topology of Statistical Verifiability.” *Sixteenth Conference on Theoretical Aspects of Rationality and Knowledge* (TARK), 236–250.

Kevin T. Kelly, Konstantin Genin, Hanti Lin (2016). “Realism, Rhetoric, and Reliability.”

*Synthese*, 193(4): 1191-1223.

Konstantin Genin, Kevin T. Kelly (2015). “Theory Choice, Theory Change, and Inductive Truth-Conduciveness.” *Fifteenth Conference on Theoretical Aspects of Rationality and Knowledge* (TARK), 111-121.

Kevin T. Kelly, Konstantin Genin (2014). “Complexity, Ockham’s Razor, and Truth.” in M. Lissack and A. Graber, eds., *Modes of Explanation: Affordances for Action and Prediction*. Palgrave Macmillian, 121-131.

Ryan Carlson, Konstantin Genin, Martina Rau, Richard Scheines (2013). “Student Profiling from Tutoring System Log Data: When do Multiple Graphical Representations Matter?” *Sixth International Conference on Educational Data Mining* (EDM), 12-20.

## Teaching

*Course Instructor*

**University of Utah**

Ethics in AI (CS 3960) Spring 2027

Justice and International Affairs (PHIL 3730) Fall 2026

Advanced Deductive Logic (PHIL 5200, 6200) Fall 2026

History and Philosophy of Science (PHIL 3350) Spring 2026

Political Philosophy (PHIL 3700) Spring 2026

Advanced Inductive Logic (PHIL 5210) Fall 2025

**Tübingen University**

Philosophy and AI Summer 2025  
Seminar with Hong Yu Wong (Philosophy Faculty, Tübingen)

Philosophy of Science for Machine Learning [syllabus] Seminar	Winter 2024-5
Philosophy and AI [syllabus] Seminar with Hong Yu Wong (Philosophy Faculty, Tübingen)	Summer 2024
Cameron Buckner's <i>From Deep Learning to Rational Machines</i> Block Seminar with Hong Yu Wong (Philosophy Faculty, Tübingen)	Winter 2024
Philosophy of Science for Machine Learning [syllabus] Seminar	Winter 2023-4
Ethics and Philosophy of Machine Learning [syllabus] Seminar with Thomas Grote (Cluster of Excellence: ML for Science, Tübingen)	Summer 2022

### Carnegie Mellon University

Causation, Law and Social Policy with Richard Scheines	Spring 2018
Introduction to Political Philosophy [syllabus]	Summer 2017
Introduction to Philosophy [syllabus]	Fall 2016
Causation, Law and Social Policy [syllabus] with Richard Scheines	Spring 2016
Introduction to Philosophy [syllabus]	Summer 2015
Introduction to Philosophy [syllabus]	Summer 2014

### Talks

<i>To be Determined</i> AI x Philosophy: Bridging Minds and Machines Dagstuhl Seminar	August 2026
“Predictions as Public Reasons” 1. Work in progress Workshop on AI Philadelphia	June 2026
2. AI + Ethics Workshop University of Utah	April 2026
3. AI.Humanity Conference Emory University	March 2026

4. Departments of Statistics & Philosophy University of Toronto	January 2026
5. Data Science and AI Lecture Series University of Utah	September 2025
6. Philosophy Colloquium Rijksuniversiteit Groningen	May 2025
“Prediction, Performativity, and Potential Outcomes” EAAMO Conference Pittsburgh	November 2025
“Prediction, or Measurement?” Philosophy of ML Tübingen-Hannover Workshop Universität Tübingen.	April 2025
“Prediction, Projection and Performativity” Workshop On Philosophy of Machine Learning Seoul National University.	February 2025
“Foundations for Randomized Designs” Cognitive Science Colloquium Universität Tübingen.	November 2024
“Can Unbiased Estimation Justify Randomized Trials?” Probabilistic Reasoning in the Sciences Universita Politecnica Delle Marche, Ancona.	August 2024
“Minimax Foundations for Randomized Trials” Joint Statistical Meetings Portland.	August 2024
“Feasible Success Concepts for (Confounded) Causal Discovery” Pacific Causal Inference Conference Shanghai.	July 2024
“A Popperian’s Progress” Carl Friedrich von Weizsaecker Colloquium Tuebingen.	May 2024
“The Fair Distribution of Predictions, or Social Goods?”	
1. Center for Philosophy, Science and Policy Università Politecnica Delle Marche.	March 2024
2. Epistemological Issues of Machine Learning in Science	February 2024

TU Dortmund.	
3. Division of Humanities and Social Sciences Caltech.	January 2024
“Performativity and Prospective Fairness” NeurIPS Workshop: Fairness Through the Lens of Time New Orleans.	December 2023
“Machine Learning as Policy Science” Lingnan-Cambridge Workshop on AI in Science Cambridge.	December 2023
“Performativity and Prospective Fairness” Ethical AI Workshop @ Comète Inria Polytechnique, Paris.	November 2023
“Tragic Randomization? A Mythical Conflict Between Science and Ethics” Fifth Sowerby Interdisciplinary Workshop King’s College London.	November 2023
“Why Not Reliability?” AI, Trustworthiness and Explainability (AITE) Conference Tübingen.	October 2023
“A Novum Organum? Machine Learning and Experimental Design” Philosophy of ML Tübingen-Hannover Workshop Leibniz University Hannover.	May 2023
“Reconsidering the Foundations of Experimental Design”	
1. Logic, Uncertainty, Computation and Information (LUCI) Seminar University of Milan.	April 2023
2. Epistemology and Theory of Machine Learning Munich Center for Mathematical Philosophy.	March 2023
“Morals and Methodology” Technopolitics Conference University of Coimbra.	February, 2023
“On Falsifiable Statistical Hypotheses” Logic Colloquium University of Konstanz.	January, 2023
“Simplicity and Scientific Progress”	

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| 1. Philosophy @ High Performance Computing Center<br>Universität Stuttgart.  | July 2023      |
| 2. Colloquium in Logic and Philosophy of Science<br>Munich Center for Mathematical Philosophy.   | June 2023      |
| 3. Imre Lakatos Centenary Conference<br>London School of Economics.  | November 2022  |
| “Randomization, Causal Discovery and Individualized Treatment”   |                |
| 1. SciCAR-Konferenz<br>Dortmund.   | August 2022    |
| 2. German Society for Philosophy of Science<br>Technische Universität Berlin.  | August 2022    |
| 3. Leibniz Workshop on Digital Ethics<br>Leibniz Universität Hannover.   | July 2022      |
| 4. Philosophy of Socially Aware Data Science<br>University of Pennsylvania.  | June 2022      |
| 5. First Luxembourg Workshop on Epistemology and AI,<br>Luxembourg.  | June 2022      |
| “On Falsifiable Statistical Hypotheses”<br>Formal Epistemology Workshop<br>UC Irvine.  | May, 2022      |
| “Success Concepts for Causal Discovery”<br>International Workshop on Causality and Philosophy<br>Shiga University, Kyoto (virtual).  | March, 2022    |
| “Against Predictive Invariance”<br>with Alexander Tolbert,<br>Philosophy of Science Association Conference<br>Baltimore.   | November, 2021 |
| “Exploitation, or Amelioration?<br>Dueling Pictures of Data-Scientific Rationality”<br>with Alexander Tolbert,<br>Philosophy of Science Association Conference<br>Baltimore. | November, 2021 |
| “Against Predictive Invariance”<br>with Alexander Tolbert,   | October, 2021  |

Bias and Discrimination in Algorithmic Decision-Making  
Leibniz Universität, Hannover.

“Statistical Decidability in Linear, Non-Gaussian Causal Models” September, 2021  
with Conor Mayo-Wilson,  
Combining Probability and Logic (Prolog 2021)  
Ludwig-Maximilians-Universität München, Virtual Conference.

“Statistical Decidability in Confounded, Linear Non-Gaussian Causal Models” July, 2021  
Neglected Assumptions in Causal Inference Workshop  
38th International Conference on Machine Learning (ICML 2021)  
Virtual Conference.

“Clinical Equipoise and Causal Discovery” July, 2021  
Seminar Series of the Cluster of Excellence:  
“Machine Learning: New Perspectives for Science”  
Eberhard Karls Universität, Tübingen (Virtual).

“Statistical Decidability in Linear, Non-Gaussian Causal Models” December, 2020  
with Conor Mayo-Wilson,  
Causal Discovery and Causality-Inspired Machine Learning Workshop  
34th Conference on Neural Information Processing Systems (NeurIPS 2020)  
Virtual Conference.

“Morals and Methodology” December, 2020  
Seminar Series of the Cluster of Excellence:  
“Machine Learning: New Perspectives for Science”  
Eberhard Karls Universität, Tübingen (Virtual).

“Simplicity and Scientific Progress”

1. Logic and Philosophy of Science Research Group Seminar, October 2019  
University of Toronto.
2. American Philosophical Association, Central Division February 2020  
Chicago.
3. Foundations of Probability Seminar, November 2020  
Princeton (Virtual).
4. Logic and Interactive Rationality Seminar, December 2020  
Amsterdam (Virtual).

“Progressive Methods for Causal Discovery” August, 2019  
16th International Congress  
Logic, Methodology and Philosophy of Science and Technology (CLMPST)  
Czech Technical University, Prague.

- “Topological Learning Theory” June, 2019  
Workshop in Philosophy and Physical Computing,  
Virginia Tech, Blacksburg.
- “Progressive Methods for Statistical Inquiry” March, 2019  
Statistics Department Seminar,  
Washington University, St Louis.
- “Inductive vs. Deductive Statistical Inference” November, 2018  
26th Biennial Meeting of the Philosophy of Science Association,  
Seattle, Washington.
- “The Topology of Statistical Inquiry” October 20, 2018  
Workshop on Logic, Information, and Topology, CMU, Pittsburgh.
- “Progressive Methods for Causal Discovery” September 22, 2018  
Workshop on Foundations of Causal Discovery, CMU, Pittsburgh.
- “Topological Epistemology of Science” June 23-29, 2018  
with Kevin T. Kelly,  
North American Summer School of Logic, Language and Information (NASSLLI),  
CMU, Pittsburgh.
- “Simplicity and Scientific Progress” June 2-3, 2018  
7th CSLI Workshop on Logic, Rationality, and Intelligent Interaction,  
Stanford, California.
- Reply to “Two Cheers for Akrasia” (Kevin Dorst) January 2018  
Meeting of the American Philosophical Association Eastern Division,  
Savannah, Georgia.
- “The Topology of Statistical Verifiability” July 2017  
*XVI<sup>th</sup>* Conference on Theoretical Aspects of Rationality and Knowledge,  
University of Liverpool.
- “How Inductive is Bayesian Conditioning?” July 2017  
Workshop in Experience and Updating,  
University Bochum, Germany.
- “The Topology of Statistical Inquiry.” June 2017  
Workshop in Philosophy and Physical Computing,  
Virginia Tech, Blacksburg (Invited Talk).
- “What is Statistical Deduction?” June 2017  
Workshop in Modality and Method,

CMU, Pittsburgh.

Reply to “Credal Omniscience and Relevance Confirmation.” (Joel Pust)      March 2017  
Meeting of the American Philosophical Association Central Division,  
Kansas City.

“Deduction, Induction, Statistics and Topology.”      November 2016  
with Kevin T. Kelly,  
Workshop in the Logical Structure of Correlated Information Change,  
Institute for Logic, Language and Computation, Amsterdam.

“A Topological Explanation of Empirical Simplicity.”      November 2016  
with Kevin T. Kelly,  
Philosophy of Science Association Meeting,  
Atlanta.

“Deduction, Induction, and Statistical Inference.”      September 2016  
with Kevin T. Kelly,  
Philosophy of Scientific Experimentation 5,  
University of Belgrade.

“Simplicity and Scientific Questions.”      June 2016  
Questions and Attitudes Workshop,  
Carnegie Mellon University, Pittsburgh.

“Theory Choice, Theory Change, and Inductive Truth Conduciveness.”

1. Bristol-Gröningen Conference in Formal Epistemology,      July 2015  
University of Bristol.
2. XV<sup>th</sup> Conference on Theoretical Aspects of Rationality and Knowledge,      June 2015  
Carnegie Mellon.
3. Formal Epistemology Workshop,      May 2015  
University of Washington, St. Louis.
4. CSLI Workshop on Logic, Rationality, and Intelligent Interaction,      May 2015  
Stanford (Invited Talk).

“A Topological Theory of Empirical Simplicity.”      November 2014  
with Kevin T. Kelly, Hanti Lin,  
Philosophy of Science Association Meeting,  
Chicago.

“Learning with Ockham: Simplicity in Inductive Inference.”      October 2014  
Cool Logic Seminar,  
Institute for Logic, Language and Computation, Amsterdam.

“An Epistemic Justification of Ockham’s Razor” October 2014  
with Kevin T. Kelly,  
René Descartes Lectures,  
Tilburg University.

“The St. Petersburg Paradox.” July 2014  
with Remco Heesen,  
Swiss Institute Exhibition,  
New York City.

“Contraction and the Loss of True Belief.”  
with Ted Shear,

1. North American Summer School in Logic, Language, and Information, June 2014  
Univeristy of Maryland, College Park.
2. Canadian Society for History and Philosophy of Science Meeting, May 2014  
St. Catherine’s, Ontario.
3. Association of Symbolic Logic North American Meeting, May 2014  
University of Colorado, Boulder.
4. Colombian Conference in Logic, Epistemology and Phil. of Science, February 2014  
Universidad de Los Andes, Bogota.

“Tracking and Statistical Knowledge.” January 2014  
11th Annual Graduate Student Conference in Epistemology,  
University of Miami.

“When do Multiple Graphical Representations Matter?” July 2013  
with Ryan Carlson, et. al.  
Educational Data Mining Conference,  
Memphis.

“Empirical Simplicity, Efficient Inquiry, and Ockham’s Razor.” June 2013  
with Kevin T. Kelly, Hanti Lin,  
Workshop on the Logic of Simplicity,  
Carnegie Mellon, Pittsburgh.

### Disciplinary Service

Organizer, *ICML 2026 Philosophy-ML Workshop* July 2026  
Conf. Organizer, *Philosophy of AI Workshop* (Tübingen) June 2025  
Conf. Organizer, *Philosophy of Science Meets Machine Learning* (PhilML 2024) Sep 2024  
Conf. Organizer, *Philosophy of Science Meets Machine Learning* (PhilML 2023) Sep 2023

Conf. Organizer, *Philosophy of Science Meets Machine Learning* (PhilML 2022) Oct 2022  
 Program Committee, *Euro. Conference on Machine Learning* (ECML 2022) Spring 2022  
 Program Committee, *Uncertainty in Artificial Intelligence* (UAI 2022) Spring 2022  
 Organizer, Pitt-CMU Grad Conference in Philosophy March 2017  
 Program Committee, NASSLLI Summer 2014

### Memberships

American Philosophical Association  
 Philosophy of Science Association

### Languages

Language	Speaking	Reading	Writing
<b>English</b>	First Language	First Language	First Language
<b>German</b>	C1	C1	C1
<b>Russian</b>	Fluent	Proficient	Beginner
<b>French</b>	Intermediate	Intermediate	Beginner