Mario Günther

Research Profile

I apply logical and mathematical tools to philosophical problems in Epistemology, Metaphysics, and the Philosophies of Law and AI.

5412 Normlee Place, Pittsburgh 15217
+49 163 7299 541 or +1 415 513 9960
Mario.Guenther111188@gmail.com
mario-guenther.com
Google Scholar
English, German, French, Ancient Greek

Employment

22- **Assistant Professor**
Munich Center for Mathematical Philosophy
LMU Munich
Visiting Assistant Professor 2024-7
Carnegie Mellon University
Junior Researcher in Residence 2023-4
Center for Advanced Studies, LMU Munich
Academic Visitor 2022
University of Edinburgh

19-21 **Research Fellow**
"Humanising Machine Intelligence"
Australian National University
Academic Visitor 2021
London School of Economics & Political Science

18-19 **Research Fellow**
"Reasoning with Conditionals" (DFG Project)
University of Regensburg

Education

2019 **PhD in Philosophy**
"Learning, Conditionals, Causation"
Munich Center for Mathematical Philosophy & Graduate School of Systemic Neurosciences
LMU Munich
Hannes Leitgeb, Stephan Hartmann

2015 **Master in Logic and Philosophy of Science**
"Non-Monotonic Logics, Artificial Neural Networks, and Complexity Considerations in the Horn Case"
Munich Center for Mathematical Philosophy
LMU Munich

2012 **Bachelor in Philosophy and Cognitive Science**
"The Methodology of Scientific Research Programmes as Modification of Popper's Falsificationism"
Albert Ludwig University Freiburg
Erasmus Year 2011-12
Université Paris-Sorbonne (Paris IV)

Journal Articles

2025 "Probability of Guilt"
Canadian Journal of Philosophy (forthcoming)

"Factual Difference-Making" (with Holger Andreas)
Australasian Philosophical Review (forthcoming)
Lead Article

"Actual Causation" (with Holger Andreas)
dialectica (forthcoming)

"Foundational Challenges in Assuring Alignment and Safety of Large Language Models" (with Usman Anwar et al.)
Transactions on Machine Learning Research (forthcoming)

2024 "Legal Proof Should Be Justified Belief of Guilt"
Legal Theory 30(3): 129-41.

"A Lewisian Regularity Theory" (with Holger Andreas)
Philosophical Studies 181: 2145-2176.

"A Regularity Theory of Causation" (with Holger Andreas)
Pacific Philosophical Quarterly 105(1): 2-32.

"Epistemic Sensitivity and Evidence"
Inquiry 67(6): 1348-1366.

2023 "Counterfactuals for Causal Responsibility in Legal Contexts" (with Holger Andreas and Matthias Armgardt)
Artificial Intelligence and Law 31(1): 115-132.

"Bayesians Still Don't Learn from Conditionals" (with Borut Trpin)
Acta Analytica 38(3): 439-451.

2022 "Causal and Evidential Conditionals"
Minds and Machines 32(4): 613-626.

"Ramsey's Conditionals" (with Caterina Sisti)
Synthese 200(165): 1-31.

"A Connexive Conditional"
Logos and Episteme 13(1): 55-63.

"Algorithmic and Human Decision Making: For a Double Standard of Transparency" (with Atoosa Kasirzadeh)
AI & Society 37(1): 375-381.

2021 "Difference-Making Causation" (with Holger Andreas)
Journal of Philosophy 118(12): 680-701.

"A Ramsey Test Analysis of Causation for Causal Models" (with Holger Andreas)
British Journal for the Philosophy of Science 72(2): 587-615.

2020 "Causation in Terms of Production" (with Holger Andreas)
Philosophical Studies 177(6): 1565-1591.

2019 "On the Ramsey Test Analysis of 'Because'" (with Holger Andreas)
Erkenntnis 84(6): 1229-1262.

2018 "Learning Conditional Information by Jeffrey Imaging on Stalnaker Conditionals"
Journal of Philosophical Logic 47 (5): 851-876.
Wolfgang Stegmüller Award 2022

2017 "Learning Conditional and Causal Information by Jeffrey Imaging on Stalnaker Conditionals"
Organon F, 24(4): 456-486.

Encyclopedia Entries

2021 "Regularity and Inferential Theories of Causation" (with Holger Andreas)
The Stanford Encyclopedia of Philosophy

Conference Proceedings

2019 "Defining Selection Functions" (with Holger Andreas)
The Logica Yearbook 2018, 1-13.

2017 "Disjunctive Antecedents for Causal Models"
Proceedings of the 21st Amsterdam Colloquium, 25-34.

Other Publications

2023 "Kann Europas KI Gesetz eine lebenswerte Zukunft bewahren?" (with William D'Alessandro)
prae\faktisch   (German)

2020 "Large-scale facial recognition is incompatible with a free society" (with Seth Lazar and Claire Benn)
The Conversation

"Was wird die Künstliche Intelligenz für Versicherungsunternehmen bedeuten?"   (German)
prae\faktisch

2018 "What's Hot in Mathematical Philosophy?"
The Reasoner, 12 (11): 90-91.

2014 "Logical Symbolicism vs. Dynamicist Connectionism: Is there a Difference in Computational Power?"
Incipiens, 2(1): 5-28.

Awards & Grants

24-25 LMUexcellent Grant   49,630€
Junior Research Fund
LMU Munich

23/24 Researcher in Residence   ≈30,000€
Center for Advanced Studies
LMU Munich

2023 Grant for Teaching "Democracy & AI"   16,620€
Venice International University
LMU Munich

2022 Wolfgang Stegmüller Award   4,000€
"Learning Conditional Information by Jeffrey Imaging on Stalnaker Conditionals"
German Society for Analytic Philosophy

"A Unifying Theory of Conditionals"
Walter Benjamin Grant   (declined)
Deutsche Forschungsgemeinschaft (DFG)

19-22 Postdoctoral Research Fellow
Grand Challenge Humanising Machine Intelligence
Australian National University

18-19 Postdoctoral Research Fellow
Deutsche Forschungsgemeinschaft (DFG)

15-19 Doctoral Fellowship Grant
Graduate School of Systemic Neuroscience

2014 Top 10% of the master students of the Munich Center for Mathematical Philosophy (refund of study fees)

11-12 Grant for independent studies
Université Paris-Sorbonne (Paris IV)

09/10 Top 5% in the Cognitive Science II exam
ALBERT LUDWIG UNIVERSITY FREIBURG

2008 Top 10% in the Formal Logic I exam
ALBERT LUDWIG UNIVERSITY FREIBURG

TEACHING EXPERIENCE

Instructor at CARNEGIE MELLON UNIVERSITY

2025 "The History of Analytic Philosophy and Its
Influence'"

2024 "AI, Society, and Humanity"

Instructor at LMU MUNICH

2024 "Legal Epistemology"

23/24 "Democracy & AI" (*Venice International University*)

2023 "Knowledge, Belief, and Degrees of Belief"

22/23 "Introduction to Decision Theory"   (German)

"Introduction to Scientific Working"   (German)

2022 "Introduction to Decision Theory"   (German)

"Causation"

Instructor at AUSTRALIAN NATIONAL UNIVERSITY

2021 "Philosophy, AI, and Society"
with Pamela Robinson and Sarita Rosenstock

2020 "Conditionals" (Seminar for PhD students)
with Alan Hájek

Instructor at UNIVERSITY OF BAYREUTH

2020 "Fair Machine Learning"

2019 "Decisions, Fairness, and Machine Learning"

2018 "Decisions and Machines"

2017 "Philosophy of AI"

Teaching Assistant

2020 "Logic & Critical Thinking"
Colin Klein, ANU

2019 "The Moral and Political Philosophy of AI"
Seth Lazar, ANU

2018 "Ethics of AI"
Fiorella Battaglia & Atoosa Kasirzadeh, LMU

"Versions of Realism"
Julian Nida-Rümelin, LMU

17/18 "Logic I"   (German)
Hannes Leitgeb, LMU

2017 "Epistemology and Ethics"
Julian Nida-Rümelin, LMU

"Intro to Philosophy of Science"   (German)
Alexander Reutlinger, LMU

2016 "Intro to Philosophy of Science"   (German)
Alexander Reutlinger, LMU

"The Foundation of the Philosophy of Morals
with Kant"   (German)
Fiorella Battaglia, LMU

15/16 "Human Liberty vs. Freedom of Will"   (German)
Fiorella Battaglia, LMU

2015 "Responsibility in the Sciences and Technology"
Fiorella Battaglia, LMU   (German)

"Philosophy of Mind"
Stephan Sellmaier, LMU

14/15 "Life-form and Science"   (German)
Fiorella Battaglia, LMU

"Metaethics: Constructivism and Realism"
Fiorella Battaglia, LMU   (German)

2014 "Metaethical Foundation of Moral Reasoning"
Fiorella Battaglia, LMU   (German)

13/14 "Robotisation of Warfare. Risk, Ethics and
Politics"   (German)
Fiorella Battaglia, LMU

10/11 "Cognitive Science II"   (German)
Gerhard Strube
ALBERT LUDWIG UNIVERSITY FREIBURG

"Logic I"   (German)
Markus Junker
ALBERT LUDWIG UNIVERSITY FREIBURG

Organisation of Events

2024 Workshop "Theories of Legal Proof"
Catholic Academy of Bavaria, Munich
Main organizer of an international workshop supported by the Junior Research Fund of LMUexcellent.

2023 Seminar "Democracy & AI"
Venice International University, San Servolo, Italy
Organizer

2022 Workshop "Responsibility & AI"
University of Vienna
Co-organizer

2021 Seminar "Humanising Machine Intelligence" (led by Seth Lazar)
Australian National University
Convener

2020 Reading Group on "Conditionals" (with Frank Jackson, Alan Hájek, and Brian Hedden)
Australian National University
Organizer

2019 Workshop "Decision Theory & the Future of Artificial Intelligence"
Australian National University
Co-organizer

Workshop "Knowledge of Knowledge"
University of Regensburg
Co-organizer

2018 Seminar "The Ethics of Artificial Intelligence"
Venice International University, San Servolo, Italy
Co-organizer

2018 Seminar "Versions of Realism"
Venice International University, San Servolo, Italy
Co-organizer

2017 International Workshop "Democracy as a Form of Life"
Parmenides Foundation, Germany
Co-organizer

ECAP9 Symposium on "Current Trends in Neurophilosophy"
LMU Munich, Germany
Organizer at the 9th European Congress of Analytic Philosophy

Conference "Causation, Explanation, Conditionals"
Ev. Akademie, Tutzing (Lake Starnberg) and LMU Munich, Germany
Main organizer of an international conference supported by the Graduate School of Systemic Neuroscience, the Bernstein Center for Computational Neuroscience, and the Munich Center for Mathematical Philosophy

Seminar "Epistemology and Ethics"
Venice International University, San Servolo, Italy
Co-organizer

2015 Conference "Predictive Brain"
Venice International University, San Servolo, Italy
Co-Organizer

Selected Recent Talks

2024 "How to Estimate $P(Doom \mid AGI)$?"   (invited)
AI, Safety, Ethics, and Society
Center for AI Safety

2023 "Legal Proof is Rational Belief of Guilt" (refereed)
Central APA 2023
Denver

2022 "Probability of Guilt"   (refereed)
GAP.11
Humboldt University of Berlin

"Legal Proof is Rational Belief of Guilt" (refereed)
96th Joint Session of the Aristotelian Society and the Mind Association
University of St Andrews

"Actual Causation"   (invited)
The LSE Choice Group
London School of Economics & Political Science

Service

2024 Referee for a Consolidator Grant Proposal of the European Research Council

Referee for Swiss National Science Foundation

"14th Tbilisi Symposium on Logic, Language and Computation (TbiLLC 2023)"
Referee for post-proceedings

"Essay Award of the Society for Analytic Philosophy and *Grazer Philosophische Studien*"
Jury member

2023 "ACM Conference on Fairness, Accountability, and Transparency"
Chicago, USA
Program committee member

2022 "ACM Conference on Fairness, Accountability, and Transparency"
Seoul, South Korea
Program committee member

2020 "Data, AI and Society Seminar Series"
Australian National University
Permanent Panelist for the public online seminar series

"Ethics of data science conference 2020"
University of Sydney
Program committee member

2019 "Conditional Logics and Conditional Reasoning: New Joint Perspectives"
Schloss Dagstuhl, Leibniz Center for Informatics
Collector for the Dagstuhl report

2017 "Causation, Explanation, Conditionals"
Graduate School of Systemic Neuroscience, Bernstein Center for Computational Neuroscience, Munich Center for Mathematical Philosophy, LMU Munich
Program chair

Journal Reviewing

The Journal of Philosophy, *Noûs*, *Mind*, *Australasian Journal of Philosophy* (2x), *Philosophical Quarterly*, *Canadian Journal of Philosophy* (2x), *Journal of Philosophical Logic* (6x), *Review of Symbolic Logic*, *Philosophical Studies* (7x), *Analysis* (5x), *British Journal for the Philosophy of Science* (4x), *Mind & Language* (3x), *Erkenntnis* (3x), *Philosophy of Science* (2x), *Minds and Machines* (3x), *Synthese* (20x) *Theoria* (2x), *Artificial Intelligence* (2x), *AI and Ethics*, *Ergo* (2x), *Kriterion*, *Philosophia*, *Episteme*, *European Journal for Philosophy of Science*, *The Australasian Journal of Logic*.

Research Stays

2022 "Academic Visitor"
University of Edinburgh

2021 "Academic Visitor"
London School of Economics & Political Science

2018 "International Rationality Summer Institute 2018"
LMU Munich, Irsee

2017 Research Stay
University of British Columbia, Kelowna

2016 "International Rationality Summer Institute 2016"
Justus Liebig University, Aurich

2015 "European Summer School of Logic, Language and Computation"
University Pompeu Fabra, Barcelona

11-12 "Studies in Philosophy and Cognitive Science"
University Paris-Sorbonne (Paris IV), Paris

Supervision

2024 Postdoctoral Researcher Conrad Friedrich
Rational Belief and Guilt funded by LMUexcellent
LMU Munich

2023 "The Limits of Technocracy"
MA Thesis of Victor Karl Magnússon
LMU Munich

"The Distance Minimization Approach to the Learning of Conditionals"
MA Thesis of Zahra Moghimkhan
LMU Munich

"Climate Justice and Game Theory: An Investigation of the Significance of Cooperation and CO_2 Reductions in International Climate Negotiations"
BA Thesis of Clara Goetz
LMU Munich

2020 "Sleeping Beauty and Belief Updating"
Independent Study with Honours Student Huon Porteous
Australian National University

2019 "An Ethical Governor for Reinforcement Learning Agents"
MA Thesis of Torben Swoboda
University of Bayreuth

References

Prof. DDr. Hannes Leitgeb
Chair of Logic and Philosophy of Language
Co-Director of the Munich Center for Mathematical Philosophy
LMU Munich
✉Hannes.Leitgeb@lmu.de

Prof. Dr. Stephan Hartmann
Chair of Philosophy of Science
Co-Director of the Munich Center for Mathematical Philosophy
LMU Munich
✉S.Hartmann@lmu.de

Prof. Dr. Alan Hájek
Research Professor
School of Philosophy
Australian National University
✉Alan.Hajek@anu.edu.au

Prof. Dr. Christian List
Chair of Philosophy and Decision Theory
Co-Director of the Munich Center for Mathematical Philosophy
LMU Munich
✉C.List@lmu.de

Prof. Dr. Igor Douven
Research Professor
Sciences, Normes, Décision
Centre National de la Recherche Scientifique
Université Paris IV – La Sorbonne
✉Igor.Douven@sorbonne-universite.fr

Prof. Dr. Katie Steele
Professor of Philosophy
School of Philosophy
Australian National University
✉Katie.Steele@anu.edu.au

Prof. Dr. Gregory Wheeler
Professor of Theoretical Philosophy & Computer Science
Director of the Centre for Human and Machine Intelligence
Frankfurt School of Finance and Management
✉G.Wheeler@fs.de

Prof. Dr. Olivier Roy
Chair of Philosophy 1
Department Chair of Philosophy
University of Bayreuth
✉Olivier.Roy@uni-bayreuth.de

Prof. Dr. Dr. hc. Julian Nida-Rümelin, Former Minister of State
Former Chair of Philosophy and Political Theory
LMU Munich
✉Julian.Nida-Ruemelin@lrz.uni-muenchen.de