Boris Babic

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Academic Appointments

Assistant Professor, **University of Toronto, St. George**　　　　　　　*2021-*

Department of Statistical Sciences
Department of Philosophy
Faculty of Law (by courtesy)
Faculty Fellow, Schwartz Reisman Institute for Technology and Society

NOTE: For 2023-2024, I will be on a leave of absence and at the University of Hong Kong, where I will serve as HKU100 Associate Professor of Data Science, Law and Philosophy.

Assistant Professor, **INSEAD**　　　　　　　*2019-2021*
Department of Decision Sciences (France and Singapore)

Postdoctoral Scholar, **California Institute of Technology (Caltech)**　　　　　　　*2017-2019*

Education

PhD in Philosophy, University of Michigan, Ann Arbor　　　　　　　*2013-2017*

Dissertation Title: Foundations of Epistemic Risk
Committee:
James Joyce (Chair), Peter Railton,
Brian Weatherson, Rich Gonzalez (Statistics/ Psychology)

MS in Statistics, University of Michigan, Ann Arbor　　　　　　　*2015-2017*

JD, *cum laude*, Harvard Law School　　　　　　　*2007-2010*

BA, *summa cum laude*, York University　　　　　　　*2003-2007*

Grants/Fund Raising

I have raised over **$330,000** in research funding in the last two years from:
○ Social Sciences and Humanities Research Council of Canada,
○ Schwartz Reisman Institute for Technology and Society,
○ Connaught Labs Fund,
○ Transform Heart Failure, and
○ the Ted Rogers Center for Heart Research.

Further details are provided below.

Areas of Specialization and Competence

AOS: Law, Policy, and Ethics of AI and Machine Learning; Bayesian Statistics
AOC: Decision & Game Theory, Legal Theory

Publications

Academic Journal Articles

1. On the Epistemic Significance of Noise, **Oxford Studies in Epistemology**   Exp 2024
with Zoe Johnson King

2. The Algorithmic Explainability Bait and Switch, **Minnesota Law Review**   Exp. 2024
with I. Glenn Cohen

3. Moral Encroachment Under Moral Uncertainty, **Philosophers' Imprint**   2023
with Zoë Johnson King

4. How AI Can Learn from the Law, **Nature Digital Medicine**   2023
with I. Glenn Cohen, Sara Gerke, Theodoros Evgeniou, Klaus Wertenbroch
and Qiong Xia

5. Algorithmic Fairness and Resentment, **Philosophical Studies**   2023
with Zoe Johnson King

6. Comment on Ariel Dora Stern, "Regulation of Medical AI",   2023
The Economics of Artificial Intelligence
edited by Ajay Agrawal, Joshua Gans, and Avi Goldfarb

7. Beware Explanations from AI in Health Care, **Science**   2021
with I. Glenn Cohen, Theodoros Evgeniou, and Sara Gerke

8. Direct Advertising of Medical Machine Learning, **Nature Machine Intelligence**   2021
with I. Glenn Cohen, Theodoros Evgeniou, and Sara Gerke

9. Normativity, Epistemic Rationality and Noisy Statistical Evidence,   2021
British Journal for the Philosophy of Science
with Anil Gaba, Ilia Tsetlin, and Robert L. Winkler

10. Approximate Coherentism and Luck, **Philosophy of Science**   2021

11. A System View for Medical Machine Learning Policy, **Nature Digital Medicine**   2020
with I. Glenn Cohen, Theodoros Evgeniou, and Sara Gerke

12. Moral Obligation & Epistemic Risk, **Oxford Studies in Normative Ethics**   2020
with Zoë Johnson-King

13. Algorithms on Regulatory Lockdown, **Science**   2019
with I. Glenn Cohen, Theodoros Evgeniou, and Sara Gerke

14. A Theory of Epistemic Risk, **Philosophy of Science**   2019

Other Writing

15. Explaining Medical AI is Easier Said than Done, **STAT News**   2021
with Sara Gerke

16. When Machine Learning Goes off the Rails, **Harvard Business Review**   2020
with I. Glenn Cohen, Theodoros Evgeniou, and Sara Gerke

17. Can AI Decide Who Gets an Organ Transplant?, **Harvard Business Review**   2020
with I. Glenn Cohen, Theodoros Evgeniou, Sara Gerke, and Nikos Trichakis

18. Onboarding AI, **Harvard Business Review**   2020
with Daniel Chen, Theodoros Evgeniou, and Anne-Laure Fayard

In Progress

19. Resolute and Correlated Bayesians (R&R)
with Anil Gaba, Ilia Tsetlin and Robert L. Winkler

20. Reframing the Interpretability Accuracy Tradeoff (under review)
with Zhanghan Yin

21. Bayesian Bandits and New Hypotheses (in progress)
with Anil Gaba, Ilia Tsetlin and Robert L. Winkler

22. The Cost of Data Bias:
A Model of the Diminishing Value of Noisy Information (in progress)
with Robin Gong

23. Managing Failure: How Should We Govern Problems from Medical AI/ML Devices?
(in progress) with Ariel Dora Stern and I. Glenn Cohen

24. Anchoring, Explainability and Monty Hall:
An Empirical Study of the Value of Algorithmic Transparency (in progress)
with David Soberman and Pankaj Aggarwal

Presentations

"The Cost of Data Bias"
  IMS International Conference on Statistics and Data Science, Lisbon (December 2023)

"Managing Failure: How Should We Govern Problems from Medical AI/ML Devices?"
  NUS Faculty of Medicine (September 2023)

"How Not to Open Up The AI Black Box"
  HKU Faculty of Law (June 2023)

"The Algorithmic Explainability Bait and Switch"

HKU Faculty of Law (June 2023)
HKU Institute for Data Science (June 2023)
NUS Faculty of Medicine (June 2023)

"Bayesian Bandits and New Hypotheses"

NYU-Rutgers Workshop on the Foundations of Probability (January 2023)

"The Case Against Explainable Medical Machine Learning"

Canadian Statistical Society, Annual Meeting (June 2021)
University of Toronto, Schwartz Reisman Institute (September 2021)
Frankfurt School of Finance and Management (June 2022)
University of Toronto, Rotman School of Management (October 2022)

"Resolute and Correlated Bayesians"

California Institute of Technology (June 2021)
University of Bristol (May 2021)
UC Irvine, Formal Epistemology Workshop (May 2022)

"Noisy Stereotypes"

UC Irvine, Formal Epistemology Workshop (April 2020)
University of Toronto (February 2020)
University of Washington (February 2020)
University of Stirling and Edinburgh, Varieties of Risk Project (November 2021)

"Algorithmic Discrimination and Epistemic Risk"

London School of Economics (February 2019)
INSEAD (February 2019)
California Institute of Technology (January 2019)
King's College London (July 2021)

"Moral Obligation and Epistemic Risk"

Arizona Workshop in Normative Ethics (January 2019)

"A Challenge for Approximate Coherentism"

University of Colorado, Boulder, 34th Conf. on Chance and Probability (October 2018)

"Testing for Discrimination and the Risk of Error"

The Australian National University (July 2018)

"Dynamic Epistemic Risk"

University of California, Irvine (February 2018)
California Institute of Technology (January 2018)

"Generalized Entropy and Epistemic Risk"

University of Michigan, Philosophy of Science Colloquium (February 2018)
London School of Economics, Philosophy of Probability Conference (June 2017)
University of Chicago, Graduate Conference (April 2016)

"Frequency Encoding Credences"

London School of Economics, Decisions, Games and Logic Workshop (June 2015)

"Degrees of Belief, Moral Judgment, and Legal Responsibility"

Harvard Legal Philosophy Colloquium (November 2014)

Grants (Selected)

Regulating the AI Lifecycle: A Multidisciplinary Perspective (Co PI, $120,000)	*2023-2025*
XSeed Grant, DOSS, ECE, Transform HF/Ted Rogers Centre for Heart Research	
Summer Research Fellowship ($5,250)	*2023*
University of Toronto Excellence Award	
From Outcome Disparity to Data Inequality, Insight Grant (Sole PI, $76,500)	*2021-2025*
Social Sciences and Humanities Research Council of Canada	
Faculty Fellowship ($25,000)	*2021-2025*
Schwartz Reisman Institute	
Faculty Fellowship ($25,000)	*2021-2025*
Connaught New Faculty Research Prize	
Reconceiving Procedural Fairness, Insight Dlpt Grant (Collaborator, $64,584)	*2021-2025*
Social Sciences and Humanities Research Council of Canada	
Institutional Grant (Sole PI, $2,500)	*2021-2022*
Social Sciences and Humanities Research Council of Canada	
Fair Machine Learning, Research Grant ($7,500)	*2020*
The Desmarais Fund for Research in AI	
Doctoral Fellowship ($60,000)	*2015-2018*
Social Sciences and Humanities Research Council of Canada	

Teaching

Bayesian Statistics (BA)	*Spring 2023, Spring 2022*
University of Toronto	
Philosophy of Science (PhD)	*Spring 2022*
University of Toronto	
Statistics, Ethics and Law (new course) (MSc)	*Fall 2021*
University of Toronto	
Ethical Issues in Big Data (new course) (BA)	*Spring 2023, Fall 2021*
University of Toronto	
Bayesian Statistics (PhD)	*Fall 2020, Fall 2019*
INSEAD	
Management Decision Making (MBA)	*Spring 2021, Spring 2020*
INSEAD	
Data Analysis (Masters in Management)	*Fall 2020*
INSEAD	
Quantitative Methods (MBA)	*Summer 2019, Fall 2019, Fall 2020*
INSEAD	
Statistics, Ethics and Law (new course)	*Spring 2018*
Caltech	
Probability, Evidence and Belief	*Spring 2018, Fall 2018*
Caltech	

Knowledge and Reality	*Fall 2017, Spring 2019*
Caltech	
Nature of Science	*Fall 2016*
University of Michigan	
Knowledge and Reality	*Summer 2016*
University of Michigan	

Professional Service

Editorial Positions

Senior Associate Editor,	*2023-*

ACM Transactions on Probabilistic Machine Learning
TOPML is a newly established ACM journal on Bayesian machine learning, edited by Fang Liu, Theodoros Papamarkou and Wray Buntine.

Other Service

Reviewer for the following publications:
Philosophy of Science, Mind, BJPS, Theory & Decision, PPR, Ergo, Synthese, PPQ, APQ
Philosophical Studies, Nature Digital Medicine, OUP, Philosophy & Technology
Journal of Law and the Biosciences

7th Conference on Bayesian, Frequentist and Fiducial Inference (BFF7)	*June 2022*
Session Organizer	
ACM Conference on Fairness, Accountability and Transparency (ACM FAccT)	*June 2022*
Program Committee	
AAAI/ACM Conference on AI, Ethics and Society	*May 2021*
Program Committee	
Philosopher's Annual	*2017, 2016*
Editor (Volumes 35 and 36)	
Harvard Journal of Law and Technology	*2007-2009*
Editor	

Legal Experience

Stikeman Elliott, LLP	Toronto
Litigation Attorney	*2012–2013*
Quinn, Emanuel, Urquhart & Sullivan, LLP	Los Angeles
Litigation Attorney	*2010–2012*
Kirkland & Ellis, LLP	New York
Summer Associate (offer extended)	*Summer 2009*
Petrie-Flom Center for Health Law Policy, Biotechnology & Bioethics	Cambridge, MA
Research Assistant	*2009–2010*

Computer Skills

R, Python, SAS, JAGS, Stan

Memberships & Affiliations

State Bar of California, Provincial Bar of Ontario

References

Research

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Teaching

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