Alexander Williams Tolbert

Contact Information

Office: 36 Eagle Row, 5th Floor, PAIS 570: Quantitative Theory & Methods Dept, Emory University

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Education

PhD in Philosophy, University of Pennsylvania, 2019-2023
Advisers: Michael Kearns, Quayshawn Spencer, Anita Allen
Committee: Samuel Freeman, Aaron Roth, Scott Weinstein

M.A. in Statistics, The Wharton School, University of Pennsylvania, 2019-2023

M.S. in Biochemistry, Virginia Polytechnic Institute and State University, 2017-2019

M.A. in Philosophy, Virginia Polytechnic Institute and State University, 2017-2019

B.S. in Biology, University of Mobile, 2009-2013

Academic Appointments

Assistant Professor, Department of Quantitative Theory and Methods, Emory University, starting Fall 2024

Postdoctoral Researcher (2023-Present, Transitioning to Assistant Professor in Fall 2024)
Department of Quantitative Theory and Methods
Emory University

Visiting Graduate Scholar, Fall 2020
The Graduate School and University Center of the City University of New York
Supervisor: Charles Mills

Areas of Specialization

- Philosophy of Science
- Causal Inference
- Machine Learning (Learning Theory, Algorithmic Fairness)
- Game Theory

- Social & Political Philosophy

- Philosophy, Politics & Economics

- Philosophy of Race

Area of Concentration

Logic and Computation

Publications

1. Aaron Roth, Alexander Tolbert, and Scott Weinstein. Reconciling individual probability forecasts. In *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency*, pages 101–110, 2023

2. Alexander Tolbert. Causal agnosticism about race: Variable selection problems in causal inference. *Philosophy of Science*, 2024. Forthcoming

3. Alexander Williams Tolbert. Race and causation. *Philosophy Compass*, Forthcoming

4. Alexander Williams Tolbert. Machine learning fairness from bias mitigation to design and deployment. In Adrian Currie, editor, *Philosophy of Science – A User's Guide*. MIT Press, Forthcoming

5. Alexander Williams Tolbert. Algorithms, justice, and the urban ghetto. *Synthese*, Forthcoming

Manuscripts in Under Review: RR

1. Alexander Williams Tolbert. An epistemic case for reparations in addressing positivity violations in causal inference. *Synthese*, Forthcoming

Works in Progress Preprinted

1. Alexander Tolbert and Emily Diana. Correcting underrepresentation and intersectional bias for fair classification. *arXiv preprint arXiv:2306.11112*, 2023

Manuscripts in Submission

1. Alexander Williams Tolbert. Examining anti-ethnic critiques within a capabilities model of reparative justice. *Radical Philosophy Review*, Forthcoming

2. Alexander Williams Tolbert and Jamelle Watson-Daniels. Racial disregard in ai. *American Philosophical Quarterly*, Forthcoming

3. Alexander Williams Tolbert. Addressing sensitive attributes in algorithmic decisions through extended conditional independence. *American Philosophical Quarterly*, Forthcoming

4. Alexander Williams Tolbert. Causal knowledge and fairness in predictive data science. *Synthese*, Forthcoming

Talks and Presentations

1. *Biennial Meeting of the Philosophy of Science Association*
   Title: Causal Race Agnosticism
   Year: 2022

2. *TOC4Fairness Seminar, Simons Collaboration on the Theory of Algorithmic Fairness, supported by The Simons Foundation*
   Title: Individual Probability, Reference Class Problem, Model Multiplicity, Reconciling Belief
   Year: 2022

3. *Penn Law Symposium on Innovation and Criminal Justice*
   Title: Algorithms in Criminal Justice (Panel)
   Year: 2022

4. *Biennial Meeting of the Philosophy of Science Association*
   Title: Against Predictive Invariance
   Year: 2021

5. *Biennial Meeting of the Philosophy of Science Association*
   Title: Exploitation, or Amelioration? Dueling Pictures of Data-Scientific Rationality
   Year: 2021

6. *Bias and Discrimination in Big Data and Algorithmic Processing Conference – BIAS*
   Title: Against Predictive Invariance
   Year: 2021

7. *Pacific Division Meeting: American Philosophical Association*
   Title: Causation and Algorithmic (un)Fairness in Machine Learning
   Year: 2021

8. *Eastern Division Meeting: American Philosophical Association*
   Title: Causation and Algorithmic (un)Fairness in Machine Learning
   Year: 2021

9. *Ernest E. Just Biomedical Society at the University of Pennsylvania*
   Title: Causation and Algorithmic (un)Fairness in Machine Learning
   Year: 2020

10. *Philosophy and Physical Computing Conference*
    Title: Dynamics and Biochemical Kinds
    Year: 2019

11. *Virginia Tech Department of Biochemistry Speakers in Biochemistry Series*
    Title: Exploring the Ability of the Inositol 1,3,4 Trisphosphate 5/6-Kinase (ITPK) to Accommodate Inositol hexakisphosphate (InsP6)
    Year: 2019

12. *Philosophy and Physical Computing Conference*
    Title: Finding Natural Kinds
    Year: 2018

Work Experience

Jun 2022 –
Fall 2022
Amazon Web Services (Remote)
Research Scientist II Intern

Supervisor: Peter Hallinan
Research Topic: Algorithmic Harm and Bias Database (Working Paper)
Language: Python

Jun 2021 –
Sep 2021
Amazon Web Services (Remote)
Research Scientist Intern

Supervisor: Peter Hallinan
Research Topic: An Algorithmic Framework for Bias
Language: Python

Jun 2022 – **Aug 2022**	Wharton Sports Analytics and Business Initiative, University of Pennsylvania, Philadelphia, PA *Instructor*

Supervisor: Abraham J. Wyner

Duties: Instructor for Money-ball Academy, a program designed to draw in talented middle and high school students from minority and underrepresented backgrounds into coding and data science.

Language: R

Service

- Founder and Organizer, W. E. B. Du Bois, Ida B. Wells Symposium on Socially Aware Data Science and Ethical Issues in Modeling (2022-)

- Founder and Organizer, University of Pennsylvania Philosophy of Computation and Data Workshop (2021-)

- Organizer, Penn-Rutgers Philosophy of Race Reading Group (2020-)

- Africana Summer Institute Fellow, University of Pennsylvania (2020-2021)

- Co-President, Minorities and Philosophy, Virginia Tech (2018-2019)

- Editorial assistant, HOPOS: The Journal of the International Society for the History of Philosophy of Science (2018-2019)

Teaching Assistantships

University of Pennsylvania

- VLST 101: Eye, Mind, and Image (Spring 2022)

- PHIL 025-001: Philosophy of Science (Fall 2021)

- PHIL 077: Philosophy of Law (Spring 2021)

- PHIL 277-001: Justice, Law, and Morality (Fall 2020)

Virginia Polytechnic Institute and State University

- PHIL 2125: History of Modern Philosophy (Fall 2018)

- PHIL 1304: Morality and Justice (Spring 2017)

- PHIL 1304: Knowledge and Reality (Fall 2017)

Selected Coursework

University of Pennsylvania

- Philosophy of Race (Spring 2022)

- Modern Statistical Learning Theory (Spring 2022)

- Mathematics of High-Dimensional Data (Spring 2022)

- Algorithmic Fairness (Fall 2021)

- Theoretical Machine Learning & Algorithms (Fall 2021)

- Observational Studies (Spring 2021)

- Modern Data Mining (Spring 2021)

- Kant and Kantian Moral Constructivism (Spring 2021)

- Introduction To Africa and African Diaspora Thought (Fall 2020)

- Mathematical Foundations of Computer Science (Fall 2020)

- Introduction to Nonparametric Methods and Log-linear Models (2020)

- Liberalism and Challenges of Racial and Economic Justice (2020)

- Mathematical Logic (Spring 2020)

- Modern Political Philosophy (Spring 2020)

- Plato's Republic (Fall 2019)

- Applied Regression and Analysis of Variance (Fall 2029)

- The Methodology of Political Philosophy (Fall 2029)

Virginia Polytechnic Institute and State University

- Intermediate Philosophy of Science (Fall 2018)

- Issues in Bioethics (Spring 2018)

- Intermediate Philosophy of Biology (Spring 2018)

- Advanced Logic: Set Theory, Analysis, and Model Theory (Spring 2018)

- Kant's Critique of Pure Reason (Fall 2017)

- Symbolic Logic (Fall 2017)

- Origins of Analytic Philosophy (Fall 2017)

Programming Skills

■ **Proficient**	■ **Familiarity**	■ **Everyday Workflow**
R	SQL	LaTeX
Python	Java	Git

Awards

- Fontaine Fellow, University of Pennsylvania (2019-2023)

- Graduate Scholar, Multicultural Academic Opportunities Program, Virginia (2017-2019)

References

Name	Prof. Michael Kearns
Reference Type	Research (Thesis Advisor)
Email	mkearns@cis.upenn.edu
Website	https://www.cis.upenn.edu/ mkearns/
Phone	(215) 898 7888
Work Address	509 Levine Hall,
	3330 Walnut Street,
	Philadelphia, PA 19104

Name	Prof. Aaron Roth
Reference Type	Research (Thesis Committee Member)
Email	aaroth@cis.upenn.edu
Website	https://www.cis.upenn.edu/ aaroth/
Phone	(215) 746 6171
Work Address	3401 Walnut Street,
	Room 406B,
	Philadelphia, PA 19104

Name	Prof. Quayshawn Spencer
Reference Type	Research, Teaching (Thesis Advisor)
Email	qspencer@upenn.edu
Website	https://philosophy.sas.upenn.edu/people/quayshawn-spencer
Phone	(215)-573-5120

Name	Prof. Anita Allen
Reference Type	Research, (Thesis Advisor)
Email	aallen@law.upenn.edu
Website	https://www.law.upenn.edu/faculty/aallen2/
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Name	Prof. Samuel Freeman
Reference Type	Research, Teaching (Thesis Committee Member)
Email	sfreeman@sas.upenn.edu
Website	https://philosophy.sas.upenn.edu/people/samuel-freeman
Phone	(215)-898-8563

Name	Prof. Scott Weinstein
Reference Type	Research (Thesis Committee Member)
Email	weinstein@cis.upenn.edu
Website	https://philosophy.sas.upenn.edu/people/scott-weinstein
Phone	(215)-898-8563

Name	Prof. Kareem Khalifa
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Name	Prof. Dylan Small
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