Sina Fazelpour

SSHRC Postdoctoral Fellow
Department of Philosophy,
Carnegie Mellon University

sina.fazelpour@gmail.com
website: sinafazelpour.com
Phone: +1(412)626-9259

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Academic Positions

SSHRC Postdoctoral Fellow, Carnegie Mellon University   **Present**
Faculty Advisors: David Danks (CMU, Philosophy); Zachary C. Lipton (CMU, Machine Learning)

Graduate Research Fellow, W. Maurice Young Centre for Applied Ethics   **2018-19**
Primary Investigator on the project "Trust and Conformity in Diverse Groups: a Simulation-based Investigation", carried out at the University of British Columbia's School of Population and Public Health.

Education

Ph.D., Philosophy., University of British Columbia   **2019**
Faculty Advisors: Christopher Mole; Evan Thompson

B.A., Philosophy., University of Toronto   **2013**
Awarded The Sanford Gold Medal for highest overall standing in the specialist program in philosophy.

M.Sc., Medical Biophysics., University of Toronto   **2010**
Faculty Advisor: Christopher Macgowan

B.Eng., Electrical and Biomedical Engineering., McMaster University   **2007**
With high distinction

Research Areas

Areas of Specialization. Philosophy of Science. Ethics of Artificial Intelligence and Data Science. Cognitive Science.
Areas of Competence. History of Philosophy of Science. Social Epistemology. Logic.

Publications

Peer-reviewed

Fazelpour, S. (*forthcoming*). Norms in counterfactual selection. *Philosophy and Phenomenological Research.*

Ransom, M., **Fazelpour, S.**, Kryklywy, J., Markovic, J., Todd, R., Thompson, E. (*forthcoming*). Affect-biased attention and predictive processing. *Cognition.*

Fazelpour, S. & Lipton, Z. C. (2020). Algorithmic fairness from a non-ideal perspective. In *2020 AAAI/ACM Conference on AI, Ethics, and Society (AIES'20)*, February 7–8, 2020, New York, NY, USA. ACM, New York, NY, USA.

Steel, D. **Fazelpour, S.**, Crewe, B. & Gillette, K. (2019). Information elaboration and epistemic effects of diversity. *Synthese.*

Steel, D. **Fazelpour, S.**, Gillette, K., Crewe, B., & Burgess, M. (2018). Multiple diversity concepts and their ethical-epistemic implications. *European Journal for Philosophy of Science*, 8(3): 761–780.

Ransom, M., **Fazelpour, S.**, & Mole, C. (2017). Attention in the predictive mind. *Consciousness and Cognition*, 47, 99–112.

Fazelpour, S., & Thompson, E. (2015). The Kantian brain: brain dynamics from a neurophenomenological perspective. *Current Opinion in Neurobiology*, 31, 223-229.

Hojjat, S. P., **Fazelpour, S.**, & Shirani, S. (2007). Multiple description coding of video using phase scrambling. In *IEEE Pacific Rim Conference on Communications, Computers and Signal Processing*

Invited Publications

Ransom, M. & **Fazelpour, S.** (*forthcoming*). Is attention just optimizing expected precision? in S. S. Gouveia, D. Mendonça, & M. Curado (Eds.) *The Philosophy and Science of Predictive Processing. Bloomsbury Publishing.*

Jordan, S., **Fazelpour, S.**, Koshiyama, A., Kueper, J., DeChant, C., Leong, B., et al. (2019). Creating a tool to reproducibly estimate the ethical impact of artificial intelligence. *UCLA: The Program on Understanding Law, Science, and Evidence (PULSE).* Retrieved from https://escholarship.org/uc/item/56w756v8

In Progress

Fazelpour, S. & Steel, S. Diversity, trust, conformity: a simulation study. *R& R* at *Philosophy of Science.*

Fazelpour, S. & Danks, D. Algorithmic bias. Commissioned by *Philosophy Compass.*

Fazelpour, S. & Danks, D. Teaching and learning guide for: Algorithmic bias. Commissioned by *Philosophy Compass.*

In Preparation

Understanding human-AI hybrid decision-making systems. (with David Danks & Zack Lipton)

Evaluating AI-assisted decision making as embedded systems. (with Maria De-Arteaga)

Algorithmic harms and the dynamics of fairness. (with with David Danks & Zack Lipton)

Rationality in network epistemology. (with Dan Steel)

Does interpretable machine learning offer the explanations that the law demands? (with Zack Lipton)

Assessing predictive coding and affective salience. University of British Columbia, 2018. Registered at aspredicted.org (8379) (with Jamie Kryklywy, Madeleine Ransom, Max Jativa & Beck Todd)

Fellowships and Awards

Fellowships and Scholarships

Social Sciences and Humanities Research Council Postdoctoral Fellowship, 2019-2021, $90,000 CAD

W. Maurice Young Centre for Applied Ethics Graduate Fellowship, 2018-2019, $20,000 CAD

Public Scholars Initiative Research Fellowship, University of British Columbia, 2018, $4,500 CAD

Public Scholars Initiative Fellowship, University of British Columbia, 2017, $8,500 CAD

Joseph-Armand Bombardier Canada Doctoral Scholarship, 2014-2017, $105,000 CAD

University of British Columbia Four-Year Fellowship, 2013-2017, $72,000 CAD

Victoria College, The Regents In-Course Scholarship, 2012, $1,000 CAD

Research Training Competition Fellowship, The Hospital for Sick Children, $40,000 CAD

Ontario Graduate Scholarship, 2008-9 (Declined), $30,000 CAD

Grants

Social Sciences and Humanities Research Council Connection Grant. "Causation and Counterfactuals in Philosophy, Science and the Law" (written with Paul Bartha). 2018, $16,354 CAD

Templeton Foundation, Summer Seminars in Neuroscience and Philosophy. "Attention in the Predictive Mind" (co-PI Rebecca Todd, Madeleine Ransom, Jelena Markovic). 2016, $25,000 US

Awards and Honours

Third PSA Women's Caucus Prize Symposium for organizing the "Conceptual and Methodological Challenges in Algorithmic Fairness" symposium, 2020

Don Brown Graduate Teaching Award, 2018

UBC Ambassador for Congress of the Humanities and Social Sciences, 2018, $1,500 CAD

Honorable mention for the William James Prize for the best contributed paper by a graduate student, Society for Philosophy and Psychology, 2016

The Sanford Gold Medal in Specialist Program in Philosophy, Victoria College, Toronto, 2013

Dean's list, University of Toronto, 2011-2013

The Walter and Mary Tuohy Award, 2012, $2,000 CAD

PEM Research in Progress Seminar Award, The Hospital for Sick Children

Dean's list, McMaster University, 2004-2007

The Dr. Harry Lyman Hooker Scholarship Award for Academic Excellence, 2006, $1,500 CAD

Natural Sciences and Engineering Research Council of Canada Award for Undergraduate Summer Research, 2005, $6,000 CAD

The Dr. Harry Lyman Hooker Scholarship Award for Academic Excellence, 2005, $1,500 CAD

Member of The National Organization for Development of Exceptional Talents (NODET), Iran, 1994-2001

Teaching Experience

Teaching Awards and Recognitions

Don Brown Graduate Teaching Award, 2018

Instructor

Full responsibility for all aspects of course including course planning, lab design, co-ordinating and supervising teaching assistants, delivering lectures, leading discussions, designing and grading course evaluations, supervising student projects, and meeting with students in office hours and through appointment.

Note about course evaluation summaries. When available, departmental means (D)—calculated as the average ratings over the past 6 terms of the course with other instructors—are provided for comparison.

2018-19 Understanding and Designing Cognitive Systems (COGS300). Cognitive Systems Program, University of British Columbia.

Course evaluation response rate: 70% (42 out of 60 students)	
1: "Strongly disagree" to 5: "Strongly Agree"	
	My score (department mean)
The instructor helped inspire interest in learning the subject matter.	4.9 (4.1)
The instructor communicated the subject matter effectively.	4.6 (3.4)
The instructor made it clear what students were expected to learn.	4.5 (3.6)
Overall, evaluation of student learning was fair.	4.3 (3.8)
The instructor showed concern for student learning.	4.7 (4)
Overall, the instructor was an effective teacher.	4.6
Student participation in class was encouraged by the instructor.	4.9
High standards of achievement were set.	4.5
The instructor was generally well prepared for class.	4.96
The instructor was readily available to students outside of class.	4.8
The instructor treated students with respect.	4.9
1: "Very Poor" to 5: "Very Good"	
Considering everything how would you rate this course?	4.7

Sample qualitative feedback: (Full evaluations are available here.)

"Sina is incredibly knowledgeable but managed to create a comfortable environment that was never condescending, which made coming to class genuinely very fun. Although high standards of achievement were set, the nature of the course really prioritized learning and application, which is very appreciated. Class discussion was frequently encouraged and the class size was perfect for a course like this, as you have enough people to form a good debate over any topic, yet not too many that it was intimidating. Furthermore, Sina often responded to stressful times for students and within reason extended deadlines for some things to better support student achievement. Lastly, we were able to choose the topics for the last couple weeks of class, which was a good move as it allowed us to explore topics that we're interested in, and also a smart way to mitigate the class attendance dropoff that happens at the end of the year by keeping it fun. I will miss going to this class!"

"Sina is an amazing instructor. He greatly inspired my interest into the topic. Every lecture was very interesting and Sina was very well prepared for them. He showed genuine interest in the topic and seemed to really care that students got any help they needed to learn the course material well."

"One of my favourite classes and the best prof I've had! Sina is very knowledgeable about every aspect of the material and possible applications of future technology. It is a very science–based course and he is able to make it easily understandable and interesting for students such as myself that have very little Science knowledge coming from the Arts stream. Overall I was completely captivated every class at Sina's easygoing personality and effective teaching style – it is obvious that all the students love him! Although the class was not easy, he has motivated me to continue to explore tech and its future applications."

"I really enjoyed COGS 300 and Sina was a great instructor. He was always prepared, encouraged critical thinking and participation if students wanted to speak. He learned everyone's names which makes a huge difference in such a large university. Communication was excellent. This has been one of my favourite courses at UBC and was definitely my favourite course this semester."

2017-18 Understanding and Designing Cognitive Systems (COGS300). Cognitive Systems Program, University of British Columbia.

Course evaluation response rate: 60% (43 out of 72 students)	
1: "Strongly disagree" to 5: "Strongly Agree"	
	My score (department mean)
The instructor helped inspire interest in learning the subject matter.	4.7 (4.1)
The instructor communicated the subject matter effectively.	4.3 (3.4)
The instructor made it clear what students were expected to learn.	4.3 (3.6)
Overall, evaluation of student learning was fair.	4.3 (3.8)
The instructor showed concern for student learning.	4.6 (4)
Overall, the instructor was an effective teacher.	4.5
Student participation in class was encouraged by the instructor.	4.8
High standards of achievement were set.	4.4
The instructor was generally well prepared for class.	4.7
The instructor was readily available to students outside of class.	4.7
The instructor treated students with respect.	4.7
1: "Very Poor" to 5: "Very Good"	
Considering everything how would you rate this course?	4.4

Sample qualitative feedback: (Full evaluations are available here.)

"Sina is perhaps the best professor I have had to date. He is truly passionate about the material he teaches and has a strong understanding of a variety of topics. Every class he is prepared and delivers lectures in an energetic and enthusiastic way. Simply put, Sina is a modern day renaissance man and a gift to UBC."

"Sina might be one of my favourite profs that I've had so far. For me his teaching style is well-paced and easy to follow. He fosters a great supportive and thought-provoking learning environment, especially in the way his lectures are structured. He is very easy to talk to and understanding and flexible with the needs of his students. Overall I had really positive experiences in this course, and Sina is a big reason why."

"Sina was great, this is how every cogs class should be taught. It was well organized and had clear learning objectives and structure. I understood what I was learning and why I was learning it, and most importantly how to learn more about each thing, and how to take it forward to future classes and ultimately my career. He made me want to show up to every class which at this point in my academic career is a miracle. He was funny, made the lectures engaging, really took the time to learn about each student, and encouraged discussion!"

"Sina did an excellent job at engaging students with the course material throughout the term. His passion for the material resonates with students as he always put in extra effort to ensure lectures were interesting. He also gave students the freedom and flexibility with regards to assignments. For example, students were able to choose their own topic for a term project and were given multiple options to choose from for bi-weekly assignments. He gave well-detailed feedback on all assignments and was open to answering questions over email and during office hours. He also brought in multiple guest lectures to further expand on concepts discussed in class which connected them to real life applications. It was an absolute pleasure having him as a professor!"

2016-17 Introduction to Scientific Reasoning (PHIL125). Philosophy Department, University of British Columbia.

Course evaluation response rate: 87% (21 out of 24 students)

1: "Strongly disagree" to 5: "Strongly Agree"	
	My score (department mean)
The instructor helped inspire interest in learning the subject matter.	4.6 (3.6)
The instructor communicated the subject matter effectively.	4.7 (3.6)
The instructor made it clear what students were expected to learn.	4.5 (3.8)
Overall, evaluation of student learning was fair.	4.3 (4.1)
The instructor showed concern for student learning.	4.5 (4)
Overall, the instructor was an effective teacher.	4.6 (3.7)
Student participation in class was encouraged by the instructor.	4.8 (3.9)
High standards of achievement were set.	4.2 (3.9)
The instructor was generally well prepared for class.	4.8 (4.1)
The instructor was readily available to students outside of class.	4.6 (4.1)
The instructor treated students with respect.	4.8 (4.5)
1: "Very Poor" to 5: "Very Good"	
Considering everything how would you rate this course?	4.4
Considering everything how would you rate this instructor?	4.8

Sample qualitative feedback: (Full evaluations are available here.)

"I learned the most in this course through my professor's lectures. His efforts to engage the class through debate and discussion and his current applications of the ideas we are learning (pertaining to politics, current news articles, etc.) were very helpful in cementing the main ideas in my head. This course could be a very difficult and dry course (because of the nature of the subject matter), however because of prof. Fazelpour's attention to engaging the students, it was one of my most enjoyable and fruitful (in terms of learning) classes to date."

"The lecture slides generated by the instructor and the oral remarks given while referring to them were the most informative and clear; even more so than the textbook readings and simplifying summaries by the author (Gimbel). The design of the slides, consisting of visual depictions of conceptual interrelations, were extremely manageable and engaging. The usage of effects to present slide elements sequentially made the material even more interesting and deserving of post-lecture thought."

"The course has taught me a great deal and has been very rewarding for me. Learning about the history of scientific reasoning has been the most satisfying portion of the course. Mostly because it changed something that I thought of as complete and unchangeable to something open for debate and evolving."

Short Courses

2018   Causal Graphical Models: Representation and Inference. University of British Columbia.

Teaching Assistant, University of British Columbia

Teaching assistant for various courses at different levels, including Introduction to Philosophy (PHIL101) (×2), Introduction to Ethics (PHIL102), Symbolic Logic (PHIL220) (×3), Philosophy of Law (PHIL338) (×2), Biomedical Ethics (PHIL433), Philosophy of Mind (PHIL451). Advanced Topics in Philosophy of Mind (PHIL491). Winter 2014-Fall 2017.

Teaching training

Certificate Program in Advanced Teaching and Learning at University of British Columbia.

Instructional Skills Workshop, UBC Graduate Pathways to Success.

Research Experience

W. Maurice Young Centre for Applied Ethics   09-2018-08-2019
Graduate Fellow
Developed an agent-based model of inter-group trust and conformity dynamics for studying the impact of diversity on group performance in simulation setting. School of Population and Public Health, University of British Columbia.

Motivated Cognition Lab, University of British Columbia   09-2016-08-2019
Affiliated Researcher
Developed a computational model of affect-biased attention and designed an experiment for empirically testing the model in collaboration with Dr. Rebecca Todd's Motivated Cognition Lab.

W. Maurice Young Centre for Applied Ethics   09-2017-08-2018
Research Assistant
Developed a taxonomy of distinct concepts and measures of diversity and evaluating their application to explanations of the cognitive benefits of diversity for deliberative mini-publics. Assistant to Dr. Daniel Steel.

The Hospital for Sick Children, Toronto   06-2007-06-2010
Graduate researcher
Developed an algorithm for decomposing blood flow dynamics in pulmonary arteries using phase-contrast MRI, Assistant to Dr. Christopher Macgowan, department of diagnostic imaging.

Signal Processing Lab, McMaster University   04-2005-11-2005
Undergraduate research assistant
Developed a new recovery technique using phase scrambling for video segments over unreliable networks.
Signal Processing Lab, electrical and computer engineering department, Assistant to Dr. Shahram Shirani.

Professional Services

Reviewer, *Synthese, Studies in History and Philosophy of Science, Minds online, Dialogue: Canadian Philosophical Review, Frontiers in Psychology*.
Symposium organizer, "Conceptual and Methodological Challenges in Algorithmic Fairness" at *The 27th Biennial Meeting of the Philosophy of Science Association*
Organizer, Ethics & Artificial Intelligence Reading Group, Carnegie Mellon University, 2019-Present
UBC Ambassador for Congress of the Humanities and Social Sciences Meetings 2018 and 2019
Organizer, Trust and Transparency in Machine Learning Systems Reading Group, University of British Columbia, 2018-2019
Co-organizer, Workshop on Causation and Counterfactuals in Philosophy, Science, and Law, University of British Columbia, 2018
Organizer, Graduate Student Colloquium Series, Philosophy Department, University of British Columbia, 2016

Languages

Persian (native speaker), English (fluent), German (basic reading knowledge)

Skills

Matlab, Time-frequency analysis, Medical imaging and signal processing, Python and R (basics).

References

Christopher Mole, Professor, Department of Philosophy, Chair, Programme in Cognitive Systems, University of British Columbia, Vancouver, BC, Canada V6T 1Z1. Email: chris.mole@ubc.ca

Evan Thompson, Professor, Department of Philosophy, University of British Columbia, Vancouver, BC, Canada V6T 1Z1. Email: evan.thompson@ubc.ca

David Danks, Professor, Philosophy, Carnegie Mellon University, Pittsburgh, PA, USA 15213. Email: ddanks@cmu.edu

Zachary C. Lipton, Assistant Professor, Machine Learning Department and Tepper School of Business, Carnegie Mellon University, Pittsburgh, PA, USA 15213. Email: zlipton@cmu.edu

Seth Lazar, Professor, School of Philosophy, Project Lead, Humanising Machine Intelligence, Austrian National University, Canberra ACT 0200, Australia. Email: seth.lazar@anu.edu.au

Daniel Steel, Associate Professor, W. Maurice Young Centre for Applied Ethics, School of Population and Public Health, University of British Columbia, Vancouver, BC, Canada V6T 1Z1. Email: daniel.steel@ubc.ca

Teaching Reference

Eric Margolis, Professor, Department of Philosophy, University of British Columbia, Vancouver, BC, Canada V6T 1Z1. Email: eric.margolis@ubc.ca