

James R. Wright

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Fellow & Canada CIFAR AI Chair, Amii
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Academic Employment

- 2018–present Assistant Professor
Department of Computing Science
University of Alberta, Edmonton, Alberta.
- 2016–2018 Postdoctoral Researcher
Microsoft Research, New York, NY.
- 2015 Visiting Graduate Student
Simons Institute for the Theory of Computing
University of California, Berkeley, CA.

Education

- 2010–2016 Doctor of Philosophy (Computer Science)
Dissertation: **Modeling Human Behavior in Strategic Settings.**
ACM SIGecom Doctoral Dissertation Award (Honorable Mention)
University of British Columbia, Canada
- 2007–2010 Master of Science (Computer Science)
Thesis: **Beyond Equilibrium: Predicting Human Behaviour in Normal Form Games**
University of British Columbia, Canada
- 1995–2000 Bachelor of Science (Computing Science)
Simon Fraser University, Canada

Publications

Journals

- [J1] **Exploiting Action Impact Regularity and Exogenous State Variables for Offline Reinforcement Learning.**
Vincent Liu, James R. Wright, Martha White.
Journal of Artificial Intelligence Research, Volume 77, pages 71–101, May 2023.
- [J2] **Why Do Software Developers Use Static Analysis Tools? A User-Centered Study of Developer Needs and Motivations.**
Lisa Nguyen Quang Do, James R. Wright, and Karim Ali.
IEEE Transactions on Software Engineering, 2020.
- [J3] **How can machine learning aid behavioral marketing research?**
Linda Hagen, Kosuke Uetake, Nathan Yang, Bryan Bollinger, Allison J. B. Chaney, Daria Dzyabura, Jordan Etkin, Avi Goldfarb, Liu Liu, K. Sudhir, Yanwen Wang, James R. Wright,

and Ying Zhu.

Marketing Letters, 2020.

[J4] **Incentivizing Evaluation with Peer Prediction and Limited Access to Ground Truth.**

Xi Alice Gao, James R. Wright, and Kevin Leyton-Brown.

Artificial Intelligence 275, 2019.

(supersedes Gao, Wright, and Leyton-Brown [2016])

[J5] **Learning When to Stop Searching.**

Daniel G. Goldstein, R. Preston McAfee, Siddarth Suri, and James R. Wright.

Management Science 66:3, pages 1375–1394, March 2020.

(Full version of Goldstein et al. [2017])

[J6] **Level-0 Models for Predicting Human Behavior in Games.**

James R. Wright and Kevin Leyton-Brown.

Journal of Artificial Intelligence Research, Volume 64, pages 357–383, February 2019.

(supersedes Wright & Leyton-Brown [2014])

[J7] **Predicting Human Behavior in Unrepeated, Simultaneous-Move Games.**

James R. Wright and Kevin Leyton-Brown.

Games and Economic Behavior, Volume 106, pages 16–37, November 2017.

(supersedes Wright & Leyton-Brown [2010, 2012])

Peer-Reviewed Conferences

[C1] **How to Evaluate Behavioral Models.**

Greg d’Eon, Sophie Greenwood, Kevin Leyton-Brown, and James R. Wright.

AAAI 2024: AAAI Conference on Artificial Intelligence, to appear.

Oral presentation.

[C2] **Guarantees for Self-Play in Multiplayer Games via Polymatrix Decomposability.**

Revan MacQueen and James R. Wright.

NeurIPS 2023: Thirty-seventh Conference on Neural Information Processing Systems, to appear.

[C3] **Finding an Optimal Set of Static Analyzers To Detect Software Vulnerabilities.**

Jiaqi He, Revan MacQueen, Natalie Bombardieri, Karim Ali, James R. Wright, and Cristina Cifuentes.

ICSME 2023: IEEE International Conference on Software Maintenance and Evolution (Industry Track), 2023.

[C4] **Non-strategic Econometrics (for Initial Play).**

Daniel Chui, Jason Hartline, and James R. Wright.

AAMAS 2023: International Conference on Autonomous Agents and Multiagent Systems, pages 634–642, 2023.

[C5] **The Spotlight: A General Method for Discovering Systematic Errors in Deep Learning Models.**

Greg d’Eon, Jason d’Eon, James R. Wright, and Kevin Leyton-Brown.

ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT), 2022.

- [C6] **Efficient Deviation Types and Learning for Hindsight Rationality in Extensive-Form Games.**
Dustin Morrill, Ryan D’Orazio, Marc Lanctot, James R. Wright, Michael Bowling, and Amy Greenwald.
ICML 2021: International Conference on Machine Learning, 2021.
- [C7] **The Role of Accuracy in Algorithmic Process Fairness Across Multiple Domains.**
Michele Albach and James R. Wright.
EC-21: ACM Conference on Economics and Computation, 2021.
- [C8] **Hindsight and Sequential Rationality of Correlated Play.**
Dustin Morrill, Ryan D’Orazio, Reza Sarfati, Marc Lanctot, James R. Wright, Amy Greenwald, and Michael Bowling.
AAAI 2021: AAI Conference on Artificial Intelligence, 2021.
- [C9] **Incentivizing Evaluation with Peer Prediction and Limited Access to Ground Truth (Extended Abstract).**
Xi Alice Gao, James R. Wright, and Kevin Leyton-Brown.
IJCAI-PRICAI 2020 Journal Track, 2020.
- [C10] **A Formal Separation Between Strategic and Nonstrategic Behavior.**
James R. Wright and Kevin Leyton-Brown.
EC-20: ACM Conference on Economics and Computation, 2020.
- [C11] **Alternative Function Approximation Parameterizations for Solving Games: An Analysis of f -Regression Counterfactual Regret Minimization.**
Ryan D’Orazio, Dustin Morrill, James R. Wright, and Michael Bowling.
AAMAS 2020: International Conference on Autonomous Agents and Multiagent Systems, 2020.
- [C12] **Learning in the Repeated Secretary Problem.**
Daniel G. Goldstein, R. Preston McAfee, Siddarth Suri, and James R. Wright.
EC-17: ACM Conference on Economics and Computation, 2017.
(Abstract)
- [C13] **Deep Learning for Predicting Human Strategic Behavior.**
Jason Hartford, James R. Wright, and Kevin Leyton-Brown.
NIPS 2016: Annual Conference on Neural Information Processing Systems, 2016.
Oral presentation.
- [C14] **Mechanical TA: Partially Automated High-Stakes Peer Grading.**
James R. Wright, Chris Thornton, and Kevin Leyton-Brown.
SIGCSE-15: ACM Technical Symposium on Computer Science Education, pages 96–101, 2015.
- [C15] **Level-0 Meta-Models for Predicting Human Behavior in Games.**
James R. Wright and Kevin Leyton-Brown.
EC-14: ACM Conference on Economics and Computation, pages 857–874, 2014.
- [C16] **Behavioral Game-Theoretic Models: A Bayesian Framework For Parameter Analysis.**

James R. Wright and Kevin Leyton-Brown.
AAMAS-2012: International Conference on Autonomous Agents and Multiagent Systems,
 pages 921–928, 2012.

Best student paper (runner up).

[C17] **Beyond Equilibrium: Predicting Human Behavior in Normal Form Games.**

James R. Wright and Kevin Leyton-Brown.

AAAI-10: AAAI Conference on Artificial Intelligence, pages 901–907, 2010.

Other Venues

[O1] **Disinformation, Stochastic Harm, and Costly Effort: A Principal-Agent Analysis of Regulating Social Media Platforms.**

Shehroze Khan and James R. Wright.

Cooperative AI Workshop at NeurIPS, 2021.

[O2] **Bounds for Approximate Regret-Matching Algorithms.**

Ryan D’Orazio, Dustin Morrill, James R. Wright.

Bridging Game Theory and Deep Learning Workshop at NeurIPS, 2019.

[O3] **A Formal Separation Between Strategic and Nonstrategic Behavior.**

James R. Wright and Kevin Leyton-Brown.

Workshop on Behavioral EC at ACM Conference on Economics and Computation, 2019.

[O4] **Incentivizing Evaluation via Limited Access to Ground Truth: Peer-Prediction Makes Things Worse.**

Xi Alice Gao, James R. Wright, and Kevin Leyton-Brown.

Workshop on Algorithmic Game Theory and Data Science at ACM Conference on Economics and Computation, 2016.

[O5] **Linear Solvers for Nonlinear Games: Using Pivoting Algorithms to Find Nash Equilibria in n -Player Games.**

James R. Wright, Albert Xin Jiang, and Kevin Leyton-Brown.

SIGecom Exchanges, volume 10, number 1, pages 9–12, 2011.

Invited Talks

PKU **A Formal Separation Between Strategic and Nonstrategic Behavior.**

Peking University.

Beijing, China (virtual talk). 2020.

DLRLSS-2019 **Multiagent Systems.**

At Deep Learning & Reinforcement Learning Summer School.

Edmonton, Alberta. 2019.

Choice-2019 **Algorithmic Behavioral Modeling.**

At 11th Triennial Invitational Choice Symposium.

Chesapeake Bay, Maryland. 2019.

PGT-2018 **Predicting Human Strategic Behavior: From Behavioral Economics to Deep Learning.**

- At Workshop on Predictive Game Theory,*
Evanston, Illinois. 2018.
- YoungEC'17 **Algorithmic Modeling of Human Behavior.**
At Young Researcher Workshop on Economics and Computation,
Tel Aviv, Israel. 2017.
- INFORMS-2017 **Deep Learning for Human Strategic Modeling.**
At INFORMS Annual Meeting,
Houston, Texas. 2017.
- IFORS-2017 **Deep Learning for Human Strategic Modeling.**
At 21st Conference of the International Federation of Operations Re-
search Societies,
Québec City, Québec. 2017.
- ISMP-2015 **Level-0 Meta-Models for Predicting Human Behavior in Games.**
At 22nd International Symposium on Mathematical Programming,
Pittsburgh, Pennsylvania. 2015.
- SFI **Evaluating Set-Valued Predictions.**
At Combining Information Theory and Game Theory,
Santa Fe Institute, New Mexico. 2012.
- LANL **Beyond Equilibrium: Predicting Human Behavior in Normal**
Form Games.
At Design and Control of Systems of Goal-Directed Agents; From Game
Theory to Game Engineering,
Los Alamos National Laboratory, New Mexico. 2010.
- BQGT **Beyond Equilibrium: Predicting Human Behavior in Normal**
Form Games.
At Behavioral and Quantitative Game Theory Conference on Future
Directions,
Newport Beach, California. 2010.

Funding

- 2019–2025 **NSERC Discovery Grant**
Natural Sciences and Engineering Research Council of Canada
(Total value: \$195,000)
- 2019–2020 **NSERC Discovery Launch Supplement**
Natural Sciences and Engineering Research Council of Canada
(Total value: \$12,500)
- 2019–2020 **Amii Resource Allocation Panel**
Alberta Machine Intelligence Institute
(Total value: \$78,860)
- 2018–2023 **Canada CIFAR AI Chair**
Canadian Institute for Advanced Research
(Total value: \$500,000)

2018 **NVIDIA GPU Grant**
NVIDIA Corporation (*Donation value in CAD: \$1,512*)

Awards

2017 **Honorable Mention: ACM SIGecom Doctoral Dissertation Award**
ACM Special Interest Group on E-commerce

2010–2013 **UGF: University Graduate Fellowship**
University of British Columbia, Canada
Declined in 2010–2012 to hold NSERC
(*Total value: \$80,000*)

2010–2012 **NSERC Canada Graduate Scholarship (Ph.D.)**
Natural Sciences and Engineering Research Council of Canada
(*Total value: \$105,000*)

2008–2009 **NSERC Canada Graduate Scholarship (M.Sc.)**
Natural Sciences and Engineering Research Council of Canada
(*Total value: \$17,500*)

Graduate Students Supervised

2019– Greg d’Eon (UBC PhD, co-supervised with Kevin Leyton-Brown)

2023– Csongor Szepesvari (MSc)

2023– Bahar Boroomand (MSc)

2023– Alireza Masoumian (MSc)

2022– Mohammad Mahdi Maghouli (MSc)

2021– Rohini Das (MSc, co-supervised with Neil Burch)

2020–2023 Amirmohsen Sattarifard (MSc, co-supervised with Matt Taylor)

2021–2023 Revan MacQueen (MSc)

2020–DNC Niko Yasui (PhD)

2020–2022 Shehroze Khan (MSc)

2019–2021 Michele Albach (MSc)

2019–2022 Daniel Chui (MSc)

2019–2020 Ryan D’Orazio (MSc, co-supervised with Matt Taylor, now at MILA)

Supervisory / Examination Committees

2023 Nathan Wispinski (PhD)

2023 Li-Hao Kuan (MSc)

2022 Saidur Rahman (MSc)

2021– Kristen Yu (PhD)

2021–2023 Vincent Liu (PhD)

2021	Housam Babiker (PhD)
2020	Varun Bhatt (MSc)
2020	Sam Sokota (MSc)
2020	Niko Yasui (MSc)
2019	Trevor Davis (PhD)
2019	Adam Parker (PhD)
2019–2022	Negar Hassanpour (PhD)
2019	Wesley Chung (MSc)
2019	Md Solimul Chowdhury (PhD)
2018–2020	Craig Sherstan (PhD)
2018	Marius Stanescu (PhD)

External Examiner

2023	David Milec (PhD, Czech Technical University)
2022	Atrisha Sarkar (PhD, Waterloo University)
2022	David Milec (PhD proposal, Czech Technical University)
2018	Moshe Mash (PhD, Ben-Gurion University)

Service

2020–2023	Amii Resource Allocation Panel (co-chair starting 2022)
2022	Graduate Admissions Strategy Committee
2020–2023	Graduate Admissions Committee
2020	Program Co-chair: Graduate Student Symposium (at 33rd Canadian Conference on Artificial Intelligence)
2019	Program Committee: Deep Learning & Reinforcement Learning Summer School
2017	Co-organizer: 2017 New York Computer Science and Economics Day (NYCE Day)
2015–2017	Member: NSF PI Forum on Peer Assessment
2014–2015	Student representative: Faculty Recruiting Committee

Senior Program Committees / Area Chair

2022, 2023	International Conference on Learning Representations.
2022	AAAI Conference on Artificial Intelligence.
2019, 2020, 2022, 2023	ACM Conference on Economics and Computation.

Program Committees

2023	European Conference on Artificial Intelligence.
2021, 2022	Equity and Access in Algorithms, Mechanisms, and Optimization.
2017, 2020	International Conference on Autonomous Agents and Multi-Agent Systems.
2019–2023	Conference on Neural Information Processing Systems.
2019, 2023	International Conference on Machine Learning.
2019–2020, 2023	AAAI Conference on Human Computation and Crowdsourcing.
2018–2020	AAAI Workshop on Reinforcement Learning in Games.
2017–2021	The Web Conference (formerly International World Wide Web Conference).
2017, 2018, 2021	ACM Conference on Economics and Computation.
2016–2021	AAAI Conference on Artificial Intelligence.

Journal Reviews

I have reviewed for various journals without serving on an editorial board. These include American Economic Review, Artificial Intelligence Journal, Journal of Artificial Intelligence Research, Journal of Autonomous Agents and Multi-Agent Systems, Econometrica, Journal of Economic Behavior and Organization, Journal of Economic Theory, Journal of the European Economic Association, Games and Economic Behavior, IEEE Transactions on Games, Progress in Artificial Intelligence, Journal of Machine Learning Research, Nature Machine Intelligence, and ACM Transactions on Economics and Computation.

Conference Reviews

I have reviewed for various conferences without serving on a program committee. These include SODA, WINE, IJCAI.

Teaching

Taught at University of Alberta

2024	CMPUT 654: Modelling Human Strategic Behaviour (graduate)
2024	CMPUT 261: Introduction to Artificial Intelligence
2023 (twice)	CMPUT 261: Introduction to Artificial Intelligence
2022	CMPUT 261: Introduction to Artificial Intelligence
2022	CMPUT 654: Modelling Human Strategic Behaviour (graduate)
2022	CMPUT 366: Intelligent Systems
2021 (twice)	CMPUT 455: Search, Knowledge, and Simulations
2021	CMPUT 366: Intelligent Systems

2020	CMPUT 296: Basics of Machine Learning
2020 (twice)	CMPUT 366: Intelligent Systems
2020	CMPUT 654: Modelling Human Strategic Behaviour (graduate)
2019	CMPUT 654: Modelling Human Strategic Behaviour (graduate)
2019	CMPUT 366: Intelligent Systems

Other Courses (during graduate studies)

My duties as an instructional assistant for the various massively open online courses listed below included constructing new content (problem sets and exams), cross-checking new video content for slide typos and misstatements, and monitoring and responding to student questions in online forums.

As an instructional assistant for Computers and Society, I led the design and implementation effort of the Mechanical TA peer grading system. I also constructed exams, and assisted with curriculum development.

As a teaching assistant for Multiagent Systems, I constructed quizzes, exams, and assignments, and assisted in the day-to-day operation of the class.

2014	Game Theory II (Massively Open Online Course) Instructional Assistant, Coursera/University of British Columbia
2014	Game Theory (Massively Open Online Course) Instructional Assistant, Coursera/University of British Columbia
2014	CPSC 532L: Multiagent Systems (graduate) Teaching Assistant, University of British Columbia
2014	CPSC 430: Computers and Society Instructional Assistant, University of British Columbia
2013	Game Theory II (Massively Open Online Course) Instructional Assistant, University of British Columbia
2013 (twice)	Game Theory (Massively Open Online Course) Instructional Assistant, Coursera/University of British Columbia
2013	CPSC 532L: Multiagent Systems (graduates) Teaching Assistant, University of British Columbia
2013	CPSC 430: Computers and Society Instructional Assistant, University of British Columbia
2009	CPSC 532L: Multiagent Systems (graduates) Teaching Assistant, University of British Columbia
2008	CPSC 430: Computers and Society Teaching Assistant, University of British Columbia
2007	CPSC 410: Advanced Software Engineering Teaching Assistant, University of British Columbia

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