

Mark K Ho

Brown University
Department of Cognitive, Linguistic, and Psychological Sciences

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Education

Brown University – Providence, RI Spring 2018 (Expected)

Ph.D., Cognitive Science

Advisor: Joseph L. Austerweil

Dissertation Committee: Joseph L. Austerweil (Chair), Michael Frank, Fiery Cushman, Michael Littman

Sc.M., Computer Science May 2015

Track: Machine Learning and Artificial Intelligence

Advisor: Michael Littman

Thesis Title: Teaching Agents with Evaluative Feedback: Communication versus Reward

Sc.M., Cognitive Science May 2014

Princeton University – Princeton, NJ June 2011

A.B. *Magna Cum Laude*, Philosophy

Minors: Computer Science; Values and Public Life

Thesis Committee: Gilbert Harman (Primary Advisor), Alexander Nehamas

Bronx High School of Science – Bronx, NY June 2007

Awards and Fellowships

National Science Foundation Graduate Research Fellowship 2014-2019

NIPS Conference Student Travel Award Fall 2016

Indiana U. and NSF Young Scientist Travel Award Summer 2016

Peter D. Eimas Graduate Research Award 2016-2017

Brown University Conference Travel Award Summer 2015

Brown University Open Graduate Education Fellowship 2014-2015

Betty R.H. and James M. Pickett Fellowship Fund 2012-2013

Papers

Ho, M. K., Littman, M. L. & Austerweil, J. L. (2017). Teaching by Intervention: Working Backwards, Undoing Mistakes, or Correcting Mistakes? In *Proceedings of the 39th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Ho, M. K., Littman, M. L., Cushman, F. & Austerweil, J. L. (under review). *Teachers use Rewards and Punishments Communicatively, not as Reinforcement*.

Ho, M. K., MacGlashan, J., Littman, M. L., & Cushman, F. (2017). Social is special: A normative framework for teaching with and learning from evaluative feedback. *Cognition*.
<https://doi.org/10.1016/j.cognition.2017.03.006>

MacGlashan, J., **Ho, M. K.**, Loftin, R. T., Peng, B., Roberts, D. L., Taylor, M. E., & Littman, M. L. (2017). Interactive Learning from Policy-Dependent Human Feedback. Paper presented at the *Proceedings of the 34th International Conference on Machine Learning (ICML)*.

Ho, M. K., Littman, M., MacGlashan, J., Cushman, F., & Austerweil, J. L. (2016). Showing versus doing: Teaching by demonstration. In D. D. Lee, M. Sugiyama, U. V. Luxburg, I. Guyon, & R. Garnett (Eds.), *Advances in Neural Information Processing Systems 29* (pp. 3027–3035). Curran Associates, Inc.
****Selected for oral presentation****

Ho, M. K., MacGlashan, J., Greenwald, A., Littman, M. L., Hilliard, E. M., Trimbach, C., Brawner, S., Tenenbaum, J. B., Kleiman-Weiner, M., Austerweil, J. L. (2016). Feature-based joint planning and norm learning in collaborative games. In *Proceedings of the 38th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Kleiman-Weiner, M., **Ho, M. K.**, Austerweil, J. L., Littman, M. L., Tenenbaum, J. B. (2016). Coordinate to cooperate or compete: Abstract goals and joint intentions in social interaction. In *Proceedings of the 38th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Ho, M. K., Littman, M. L., Cushman, F. & Austerweil, J. L. (2015). Teaching with rewards and punishments: Reinforcement or communication?. In D. C. Noelle and R. Dale and A. S. Warlaumont and J. Yoshimi and T. Matlock and C. D. Jennings and P. P. Maglio (Eds.), *Proceedings of the 37th Annual Meeting of the Cognitive Science Society* (p. 920-925). Austin, TX: Cognitive Science Society.

Posters

Kleiman-Weiner, M., **Ho, M. K.**, Austerweil, J. L., Littman, M. L., & Tenenbaum, J. (2017, June). *Learning to Cooperate and Compete*. Poster presented at the Reinforcement Learning and Decision Making conference, Ann Arbor, Michigan, USA. ****Best paper award****

Ho, M. K., Littman, M. L., MacGlashan J., Cushman F., Austerweil J. L.. (2017, March). *Human Teaching by Demonstration: Showing versus Doing Reinforcement Learning Tasks*. Poster and talk presented at the 11th Annual Machine Learning Symposium of the New York Academy of Sciences, New York City, New York. ****Top presentation award****

Ho, M. K., Littman, M.L., Cushman, F. & Austerweil, J. L. (2016, January). *Generous Teachers: Evaluative Feedback as Communication*. Poster presented at the Annual meeting of the Society for Personality and Social Psychology, San Diego, California.

Ho, M. K., Littman, M. L., Cushman, F. & Austerweil, J. L. (2015, June). *Evaluative Feedback: Reinforcement or Communication?* Poster selected for a 2 minute spotlight “data blitz” and presented at the Reinforcement Learning and Decision Making conference, Edmonton, Alberta, Canada.

Ho, M. K. & Cushman, F. (2013, August). *Modeling Social Learning and Working Memory Use*. Poster presented at the 35th Annual Conference of the Cognitive Science Society. Berlin, Germany.

Talks and Symposia

Ho, M. K., Littman, M. L., Cushman, F., Austerweil, J. L. (2016, August). “Not Quite Intuitive Behaviorists: Teachers use Rewards and Punishments Communicatively and not as Reinforcement.” Abstract presented at the 49th Annual Meeting of the Society for Mathematical Psychology, New Brunswick, NJ.

Ho, M. K. (2016, May). “Teachers use rewards and punishments communicatively and not as reinforcement” presentation given to HAMLET (Human and Machine Learning: Experiments and Theory) seminar series at University of Wisconsin, Madison.

Austerweil, J. L., Brawner, S., Greenwald, A., Hilliard, E., **Ho, M. K.**, Littman, M. L., MacGlashan, J., & Trimbach, C. (2016, March). “The Impact of Outcome Preferences in a Collection of Non-Zero-Sum Grid Games.” AAAI Spring Symposium 2016 on Challenges and Opportunities in Multiagent Learning for the Real World.

Ho, M. K. (2015, September). Organized and facilitated the 1st annual Brown CLPS Research Blitz in departmental Cognitive Seminar series.

Ho, M. K., Fernbach, P.M & Sloman, S. A. (2015, May). *Opening minds by exposing the illusion of explanatory depth*. Talk given at the annual meeting of the Association for Psychological Science, New York, NY.

Ho, M. K. (2015, March). “Teaching with Punishment and Reward” presentation given to Cognition Seminar at Brown University.

Ho, M. (2013, July). “Causal Self-Deception”. 5-minute ‘Data Blitz’ presentation given at the Moral Psychology Research Group annual meeting.

Ho, M. K. & Sloman, S. A. (2013, October). “Causes and Reasons in Self-Deception”. First-Year Project Oral Presentation given to the CLPS Dept., Brown University.

Workshops

Mathewson, K., Subramanian, K., **Ho, M. K.**, Loftin, R., Austerweil, J.L., Harutyunyan, A., Precup, D., El Asri, L., Gombolay, M., Zhu, X., Chernova, S., Isbell, C. L., Pilarski, P. M., Wong, W. K., Veloso, M., Shah, J.A., Taylor, M., Argall, B., Littman, M. L. (2016) Future of Interactive Learning Machines. Workshop at the 30th Conference on Neural Information Processing Systems. Organizing Committee and Programming Committee member.

Teaching Experience

- CLPS 0700** – Social Psychology Spring 2016
Teaching Assistant
- Google igniteCS** – Nathan Bishop Middle School, Providence, RI 2014-2015
Teacher
- Organized and taught basic coding and Computer Science classes at a local public middle school once a week.
- CLPS 1211** – Human and Machine Learning Fall 2015
Invited Guest Lecturer
- CLPS 0900** – Quantitative Methods Fall 2015
Teaching Assistant
- CLPS 0020** – Introduction to Cognitive Science Fall 2013
Teaching Assistant
- Private Academic Tutor** 2011-2012
- Tutored high school students in Mathematics, Physics, and Computer Science
- Princeton Student Volunteers Council – TEACH Program** – Trenton, NJ 2011
Volunteer Tutor
- Tutored former prison inmates preparing for the GED (high school equivalency) exam.

Service

- Brown Cognition Seminar Series 2015-2016 A.Y.
Organizer
- Planned and organized weekly seminar series with invited speakers from other universities.
- Brown Graduate School Diversity and Inclusion Advisory Board Fall 2016 – Current
Advisory Board Member
- Brown Cognitive, Linguistics, and Psychological Sciences Dept. Spring 2016 – Fall 2016
Diversity Committee
Graduate Student Committee Member
- ALANA (African American, Latino/a, Asian/Asian American, Native American) 2014-2016
Mentorship Program at Brown University
Mentor

Skills

- General programming in Python, Java, and C
- Web-based programming in HTML, CSS, and JavaScript (client- and server-side)
- Experimental design
- Data Analysis in Python, R, MATLAB, and SPSS
- Graphic design and image/video editing in Adobe Photoshop, Illustrator, InDesign, and Premier

- Survey design in Qualtrics
- Conversational Mandarin (speaking/reading/writing)

Memberships

Cognitive Science Society

Society for Judgment and Decision-Making