

Daniel Kasenberg

PhD Candidate, Tufts University

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📄 <http://dkasenberg.github.io/>

Advisor: Matthias Scheutz

Education

2015–2020 (expected) **PhD, Computer Science and Cognitive Science**, *Tufts University*, Medford, MA, Advisor: Matthias Scheutz.

Qualifying exam fields: Artificial Intelligence; Statistical Pattern Recognition; Template Metaprogramming

2015–2018 **MS, Computer Science**, *Tufts University*, Medford, MA, Advisor: Matthias Scheutz.

Relevant courses: Moral Psychology; Ethics for AI, Robotics, and Human Robot Interaction; Information Theory; Computational Models in Cognitive Science

2007–2014 **BMath, Applied Mathematics and Computer Science**, *University of Waterloo*, Waterloo, ON, Canada, Excellent standing; Dean's honour list.

Relevant courses: Introduction to Artificial Intelligence; Machine Learning: Statistical and Computational Foundations; Calculus of Variations; Algorithms; Introduction to Computational Mathematics; Logic and Computation

Research Interests

My ultimate goal is to develop **morally competent artificial agents**: agents that can represent, learn, reason about, and follow human moral and social norms. My current foci are **planning to obey conflicting norms** and **inferring others' norms from behavior in stochastic domains** (such as Markov Decision Processes), where such norms are represented in **temporal logic**.

Research Experience

2018-2018 **Research Intern**, *DeepMind*.

Developing exploration algorithms for reinforcement learning agents

2015-2018 **Graduate Research Assistant**, *Tufts University*, Human-Robot Interaction Lab.

Applying moral and social norms in stochastic domains

2014-2014 **Undergraduate Research Assistant**, *University of Waterloo*, HCI Lab.

Extracting procedural information from online software tutorials using machine learning

Publications

Conference Papers

- [C1] Daniel Kasenberg et al. "Quasi-Dilemmas for Artificial Moral Agents". In: *Proceedings of the International Conference on Robot Ethics and Standards*. 2018.
- [C2] Daniel Kasenberg and Matthias Scheutz. "Inverse Norm Conflict Resolution". In: *Proceedings of the First AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society*. 2018.
- [C3] Daniel Kasenberg, Thomas Arnold, and Matthias Scheutz. "Norms, Rewards, and the Intentional Stance: Comparing Machine Learning Approaches to Ethical Training". In: *Proceedings of the First AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society*. 2018.
- [C4] Daniel Kasenberg and Matthias Scheutz. "Norm Conflict Resolution in Stochastic Domains". In: *Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence*. 2018.
- [C5] Daniel Kasenberg and Matthias Scheutz. "Interpretable Apprenticeship Learning with Temporal Logic Specifications". In: *Proceedings of the 56th IEEE Conference on Decision and Control (CDC)*. 2017.

Workshop Papers

- [W1] Daniel Kasenberg. "Inferring and Obeying Norms in Temporal Logic". In: *Human Robot Interaction Pioneers Workshop (HRI 2018)*. In press.
- [W2] Daniel Kasenberg. "Learning and Obeying Conflicting Norms in Stochastic Domains". In: *Proceedings of the Student Program, 1st AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society*. 2018.
- [W3] Thomas Arnold, Daniel Kasenberg, and Matthias Scheutz. "Value Alignment or Misalignment - What Will Keep Systems Accountable?" In: *Proceedings of the 3rd International Workshop on AI, Ethics and Society*. 2017.

Honors and Awards

Doctoral consortia, HRI 2018, AIES 2018

Teaching Experience

Teaching Assistant

2016 **Introduction to Machine Learning**, *Tufts University*, taught by Roni Khardon.

Industry Experience

2012-2015 **Software Developer**, *Guiding Star Communications Inc.*, Kitchener, ON.
Developed web applications; researched statistical methods for brand positioning

- 2013 **Genome Software Developer**, *Ontario Institute for Cancer Research*, Toronto, ON.
Developed features for JBrowse, a web-based genome browser
- 2010 **Web Developer**, *triOS Corporation*, Mississauga, ON.
Developed modules for college administration and management system
- 2009 **Data Analyst**, *triOS Corporation*, Mississauga, ON.
Analyzed high-dimensional data for business intelligence; automated college scheduling process

Volunteer Experience

- 2018-2018 **Web and Publicity Chair**, *HRI Pioneers Workshop 2019*.
- 2017-2018 **Secretary**, *Tufts Graduate Student Council (GSC)*.
- 2016-2017 **First-year representative**, *Tufts Computer Science Graduate Student Organization*.