

# Christopher H. Lin

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**AI and machine learning are driven by data. I specialize in using AI and machine learning to collect that data. I have experience building state-of-the-art conversational agents and modeling/controlling crowd work.**

## Education

- 2011 - 2017 University of Washington  
*Ph.D.*, Computer Science & Engineering  
Dissertation: *The Intelligent Management of Crowd-Powered Machine Learning*  
Advisors: Daniel S. Weld, Mausam
- 2011 - 2013 University of Washington  
*M.S.*, Computer Science & Engineering  
Advisors: Daniel S. Weld, Mausam
- 2007 - 2011 University of California, Berkeley  
*B.A.*, Computer Science, Mathematics

## Employment

- 10/2018 - present **Semantic Machines** *Bellevue, WA*  
Senior Researcher  
Building state-of-the-art conversational AI with data.
- 8/2017 - 9/2018 **Microsoft** *Bellevue, WA*  
Applied Scientist, Substrate and Query Intelligence  
Improving email productivity.
- 9/2011 - 8/2017 **University of Washington** *Seattle, WA*  
Research Assistant
- Autumn 2014 **Microsoft Research** *Redmond, WA*  
Research Intern, Adaptive Systems and Interaction  
Mentors: Ece Kamar, Andrey Kolobov, Eric Horvitz
- Summer 2013 **Microsoft Research** *Redmond, WA*  
Research Intern, Adaptive Systems and Interaction  
Mentors: Ece Kamar, Eric Horvitz
- 2010 - 2011 **University of California** *Berkeley, CA*  
Teaching Assistant, Computer Science
- Summer 2010 **Facebook** *Palo Alto, CA*  
Software Engineering Intern
- Summer 2009 **University of California** *Berkeley, CA*  
Teaching Assistant, Computer Science

## Teaching Experience

- Winter 2016 **Teaching Assistant**, Introduction to Artificial Intelligence (graduate-level) (CSE573)  
University of Washington
- Winter 2015 **Teaching Assistant**, Advanced Internet Systems (CSE454)  
University of Washington
- Spring 2011 **Teaching Assistant**, Structure and Interpretation of Computer Programs (CS61A)  
University of California, Berkeley
- Fall 2010 **Teaching Assistant**, Structure and Interpretation of Computer Programs (CS61A)  
University of California, Berkeley
- Summer 2009 **Teaching Assistant**, Structure and Interpretation of Computer Programs (CS61A)  
University of California, Berkeley

## Publications

### Book Chapters

1. Daniel S. Weld, Mausam, **Christopher H. Lin**, and Jonathan Bragg. “Artificial Intelligence and Collective Intelligence.” In *The Collective Intelligence Handbook*. MIT Press. October 2015.

### Refereed Journal Articles

2. Semantic Machines et al. “Task-Oriented Dialogue as Dataflow Synthesis.” *Transactions of the Association for Computational Linguistics (TACL)*. Volume 8 (2020) 556-571.
1. Peng Dai, **Christopher H. Lin**, Mausam, and Daniel S. Weld. “POMDP-Based Control of Workflows for Crowdsourcing.” *Artificial Intelligence Journal (AIJ)*. Volume 202 (2013) 52-85.

### Refereed Conference Papers

10. Tarfah Alrashed, Chia-Jung Lee, Peter Bailey, **Christopher Lin**, Milad Shokouhi, and Susan Dumais. “Evaluating User Actions as a Proxy for Email Significance” In *The 2019 Web Conference (WWW 2019)*. San Francisco, USA. May 2019.  
Acceptance Rate: 18%
9. Bahareh Sarrafzadeh, Ahmed Hassan Awadallah, **Christopher H. Lin**, Chia-Jung Lee, Milad Shokouhi, and Susan T. Dumais. “Characterizing and Predicting Email Deferral Behavior.” In *The Twelfth ACM International Conference on Web Search and Data Mining (WSDM 19)*. Melbourne, Australia. February 2019.  
Acceptance Rate: 16%
8. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “Active Learning with Unbalanced Classes and Example-Generation Queries.” In *Proceedings of the 6th AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*. Zurich, Switzerland. July 2018.  
Acceptance Rate: 29%

7. Angli Liu, Stephen Soderland, Jonathan Bragg, **Christopher H. Lin**, Xiao Ling, Daniel S. Weld. “Effective Crowd Annotation for Relation Extraction.” In Proceedings of the 15th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL). San Diego, California, USA. Jun 2016.  
Accepted for long oral presentation  
Acceptance Rate: 25%
6. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “Re-active Learning: Active Learning with Relabeling.” In Proceedings of the 30th AAAI Conference on Artificial Intelligence (AAAI). Phoenix, Arizona, USA. Feb 2016.  
Accepted for long oral presentation  
Acceptance Rate: 26%
5. **Christopher H. Lin**, Andrey Kolobov, Ece Kamar, and Eric Horvitz. “Metareasoning for Planning Under Uncertainty.” In Proceedings of the 24th International Joint Conference on Artificial Intelligence (IJCAI). Buenos Aires, Argentina. July 2015.  
Accepted for long oral presentation  
Acceptance Rate: 29%
4. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “To Re(label), or Not To Re(label).” In Proceedings of the 2nd AAAI Conference on Human Computation and Crowdsourcing (HCOMP). Pittsburgh, PA, USA. Nov 2014.  
Acceptance rate: 32%
3. **Christopher H. Lin**, Ece Kamar, and Eric Horvitz. “Signals in the Silence: Models of Implicit Feedback in a Recommendation System for Crowdsourcing.” In Proceedings of the 28th AAAI Conference on Artificial Intelligence (AAAI). Quebec City, Quebec, Canada. July 2014.  
Accepted for both oral and poster presentation  
Acceptance rate: 28%
2. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “Crowdsourcing Control: Moving Beyond Multiple Choice.” In Proceedings of the 28th Conference on Uncertainty in Artificial Intelligence (UAI). Catalina Island, CA, USA. Aug 2012.  
Acceptance rate: 31%
1. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “Dynamically Switching between Synergistic Workflows for Crowdsourcing.” In Proceedings of the 26th AAAI Conference on Artificial Intelligence (AAAI). Toronto, ON, Canada. July 2012.  
Accepted for both oral and poster presentation  
Acceptance rate: 26% Oral Acceptance Rate: 12%

## Refereed Workshop Papers

7. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “Re-active Learning: Active Learning with Relabeling” In Works in Progress of the 3rd AAAI Conference on Human Computation and Crowdsourcing (HCOMP). San Diego, CA, USA. Nov 2015.
6. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “Reactive Learning: Actively Trading Off Larger Noisier Training Sets Against Smaller Cleaner Ones.” In Active Learning Workshop & Workshop on Crowdsourcing and Machine Learning at ICML. Lille, France. July 2015.
5. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “To Re(label), or Not To Re(label) — An Extended Abstract.” In NIPS Workshop on Crowdsourcing and Machine Learning. Montreal, Quebec, Canada. Dec 2014.
4. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “Towards a Language for Non-Expert Specification of POMDPs for Crowdsourcing.” In Works in Progress of the 1st AAAI Conference on Human Computation and Crowdsourcing (HCOMP). Palm Springs, CA, USA. Nov 2013.

3. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “Dynamically Switching between Synergistic Workflows for Crowdsourcing.” In Human Computation Workshop at AAAI (HCOMP). Toronto, ON, Canada. July 2012.
2. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “Crowdsourcing Control: Moving Beyond Multiple Choice.” In Human Computation Workshop at AAAI (HCOMP). Toronto, ON, Canada. July 2012.
1. Daniel S. Weld, Eytan Adar, Lydia Chilton, Raphael Hoffman, Eric Horvitz, Mitchell Koch, James Landay, **Christopher H. Lin**, Mausam. “Personalized Online Education – A Crowdsourcing Challenge.” In Human Computation Workshop at AAAI (HCOMP). Toronto, ON, Canada. July 2012.

## Posters

3. **Christopher H. Lin**, Mausam, and Daniel S. Weld. “Dynamically Switching between Synergistic Workflows for Crowdsourcing.” International Conference on Automated Planning and Scheduling (ICAPS) Doctoral Consortium. Atibaia, Sao Paulo, Brazil. June 2012.
2. **Christopher Lin** and Stuart Russell. “Travel Time Corrections via Local Regression.” Comprehensive Nuclear-Test-Ban-Treaty: Science and Technology. Vienna, Austria. 8-10 June 2011.
1. J.Y. Luo, J.S. Chen, M. Vazquez, **C. Lin**, A.M. Chen and R.K. Sachs. “Crossover Breakpoint Detection With High Density SNP Markers in Three Generation Tri-Trio Pedigrees.” Biomedical Computation at Stanford. Stanford, CA, USA. 7 Nov 2009.

## Invited Talks

6. Allen Institute of Artificial Intelligence. February 2017. *The Intelligent Management of Machine Learning*
5. Amazon. February 2017. *The Intelligent Management of Machine Learning*
4. Google Research. February 2017. *The Intelligent Management of Machine Learning*
3. Maana. February 2017. *The Intelligent Management of Machine Learning*
2. Microsoft Research, Redmond. UW-MSR Machine Learning Workshop. February 2015. *Reactive Learning*.
1. University of Washington, Seattle. Computer Science & Engineering Symposium. January 2015. *Reactive Learning*.

## Honors and Academic Achievements

- 2013 National Science Foundation Graduate Research Fellowship Program (NSF GRFP) Honorable Mention
- 2012 Department Nomination for Microsoft Research PhD Fellowship (3 nominations per department)
- 2011 EECS Honors Degree
  - Letters and Sciences Distinction in General Scholarship
  - Elected to Phi Beta Kappa

## Professional Service

- **Program Committee** IJCAI 2019, HCOMP 2019, AAAI 2019, IJCAI 2018, HCOMP 2018, AAAI 2018, IJCAI 2017, AAMAS 2016

- **Reviewer** HCOMP 2016, JMLR, JAIR, HCOMP Works-in-progress 2013, ACM Transactions on Social Computing
- **Subreviewer** AAAI 2015, HCOMP 2014
- **Member** AAAI (2012-present)

## **Extracurricular Activities**

- Violinist since age 4. Concertmaster of the 2006 Honor Orchestra of America, Assistant Concertmaster of the 2006 All-State California High School Honor Orchestra, Assistant Concertmaster of the 2006 All-Southern California High School Honor Orchestra, Member of the 2007 National Festival Orchestra (performed at Carnegie Hall), Member of the UC Berkeley Symphony Orchestra (2007-2011), Member of the UW Symphony Orchestra (2011-2013), Associate Concertmaster, Principal Second of the Seattle Philharmonic Orchestra (2013-2016), Member of the Ellinor Quartet (2017-present)
- 2nd Degree Black Belt in Taekwondo
- Fluent in Mandarin, can hold basic conversations in Spanish (5 years of study), can pretend to understand French (1 semester of study)