

EDITH LAW · CURRICULUM VITAE

CONTACT INFORMATION	Email: dr.edith.law@gmail.com http://edithlaw.ca
CITIZENSHIP	Canadian
ACADEMIC POSITIONS	University of Waterloo , Ontario, Canada Assistant Professor, 2014- David R. Cheriton School of Computer Science University of Waterloo Harvard University , Cambridge, MA CRCS Postdoctoral Fellow, 2012-2014 Center for Research on Computation and Society (CRCS) School of Engineering and Applied Sciences, Harvard University
EDUCATION	Carnegie Mellon University , Pittsburgh, PA Ph.D. in Machine Learning, August 2012 Advisors: Luis von Ahn and Tom Mitchell <i>Thesis: Attribute Learning using Joint Human and Machine Computation</i> McGill University , Montreal, Quebec M.Sc. in Computer Science, 2005 Advisor: Doina Precup <i>Thesis: Risk-Directed Exploration in Reinforcement Learning</i> University of British Columbia , Vancouver, BC B.Sc. in Computer Science, 2000 Advisor: Maria Klawe
HONOURS AND AWARDS	CHI Best Paper Honorable Mention, 2016 Harvard CRCS Postdoctoral Fellowship, 2012 CHI Best Paper Honorable Mention, 2012 FQRNT Postdoctoral Fellowship, 2012-2014 - Declined Microsoft Graduate Research Fellowship, 2009-2010 CHI Best Paper Honorable Mention, 2009 Robin Popplestone Fellowship, UMass Amherst (\$2500) - Declined NSERC Postgraduate Scholarship PGSD3 2006-2009 (\$63000) - Declined
FUNDING	PI, Artificial Intelligence Journal (AIJ) Grant for Promoting AI Research titled “Doctoral Consortium for HCOMP 2016.” Total 3000 EURO. With co-PI Haoqi Zhang, Northwestern University. PI, NSERC-CIHR Collaborative Health Research Project (CHRP) Grant titled “A framework for hybrid machine and human computation for the accurate and scalable analysis of human clinical EEG recordings.” Total \$145,000 per year granted for 3 years. With co-PIs Dr. Andrew Lim, Sunnybrook Hospital and Joelle Pineau, McGill University. PI, NSERC Discovery Grant titled “Driven by Curiosity: Interaction Techniques and Incentive Mechanisms for Crowdsourcing Scientific Tasks.” Total \$23,000 per year granted for 5 years. co-PI, International Research Partnership Grant (IRPG), Waterloo/Twente Partnership to Accelerate Research in Data Driven Persuasive Health. Total \$55,000. NSF grant (Social-Computational System SoCS nsf09559) proposal titled “Effectively Leveraging Contributions in Human Computational Systems.” Total \$737,500 USD granted for 3 years. With Tom Mitchell and Luis von Ahn.

Books

E. Law and L. von Ahn. *Human Computation*. Morgan & Claypool Synthesis Lectures on Artificial Intelligence and Machine Learning, edited by Ron Brachman, Tom Dietterich and William Cohen, June 2011.

Book Chapters

E. Law. “Human Computation for Music Classification.” In *Music Data Mining*, edited by T. Li, M. Ogihara and G. Tzanetakis. CRC Press/Chapman Hall, 2011.

Conference Papers

T. Tse, J. Salamon, A. Williams, H. Jiang and **E. Law**. Ensemble: A Hybrid Human-Machine System for Generating Melody Scores from Audio. In ISMIR 2016.

S. Pan, K. Larson, J. Bradshaw and **E. Law**. Dynamic Task Allocation Algorithm for Hiring Workers that Learn. In IJCAI 2016

E. Law, M. Yin, J. Goh, K. Chen, M. Terry and K. Gajos. “Curiosity Killed the Cat, but Makes Crowdsourcing Better.” In CHI 2016. (**Best Paper Honorable Mention**)

O. Amir, B. Grosz, **E. Law** and R. Stern. “Collaborative Health Plan Support.” In AAMAS 2013.

H. Zhang, **E. Law**, K. Gajos, E. Horvitz, R. C. Miller and D. Parkes. “Human Computation Tasks with Global Constraints: A Case Study.” In CHI 2012. (**Best Paper Honorable Mention**)

E. Law and H. Zhang. “Towards Large-Scale Collaborative Planning: Answering High-Level Search Queries Using Human Computation.” In AAAI 2011.

E. Law, B. Settles and T. Mitchell. “Learning to Tag using Noisy Labels.” In ECML 2010.

E. Law, K. West, M. Mandel, M. Bay and S. Downie. “Evaluation of Algorithms Using Games: The Case of Music Tagging.” In ISMIR 2009.

E. Law and L. von Ahn. “Input-agreement: A New Mechanism for Data Collection using Human Computation Games.” In CHI 2009. (**Best Paper Honorable Mention**)

Refereed Workshop, Poster, and Short Papers

E. Law, B. Settles, A. Snook, H. Surana, L. von Ahn and T. Mitchell. “Human Computation for Attribute and Attribute Value Acquisition.” In CVPR Workshop on Fine-Grained Visual Categorization 2011.

E. Law, P. Bennett, and E. Horvitz. “The Effects of Choice in Routing Relevance Judgments.” In SIGIR 2011.

J. Betteridge, A. Carlson, S. Hong, E. Hruschka Jr., **E. Law**, T. Mitchell and S. Wang. “Towards Never Ending Language Learning.” In AAAI Spring Symposium on Learning by Reading and Learning to Read 2009.

E. Law, L. von Ahn and T. Mitchell. “Search Wars: A Game for Improving Web Search.” In HCOMP 2009.

E. Law, A. Mityagin and M. Chickering. “Intentions: A Game for Classifying Search Query Intent.” In CHI 2009 Work-in-Progress.

E. Law “The Problem of Accuracy as An Evaluation Criterion.” In ICML Workshop on Evaluation Methods for Machine Learning 2008.

E. Law, L. von Ahn, R. Dannenberg and M. Crawford. “TagATune: a Game for Sound and Music Annotation.” In ISMIR 2007.

E. Law, M. Coggan, D. Precup & R. Bodhana. “Risk-Directed Exploration in Reinforcement Learning”. IJCAI Workshop on Planning and Learning in A Priori Unknown or Dynamic Domains, 2005. Pages 97-102.

RESEARCH
EXPERIENCE

Microsoft Research, Redmond, WA. Summer 2010.

Worked with Eric Horvitz and Paul Bennett on several projects related to human computation, specifically on task routing for relevance judgment, peer routing and large-scale collaborative planning.

Microsoft Live Labs, Bellevue, WA. Summer 2008.

Worked with Max Chickering and Anton Mityagin on developing a human computation game toolkit, and designing games for collecting data on Web search intent.

National Research Council of Canada, Ottawa, Canada. Summer 1999.

Worked with John Meech on an ontology-driven system that automatically translates messages between multiple communication formats.

INVITED TALKS

“The Big Picture: The Role of Context in Microtask Productivity”

Session on *Supporting Big Tasks through Microtasks*, MSR Faculty Summit, July 2016.

“Motivating the Crowd”

Invited Speakers Series, Graphics Interfaces (GI) Conference, June 2016

“Designing for Curiosity”

Toronto User Experience (TUX) Speaker Series, Feb 2016

“Crowdsourcing Science”

Invited Talk at ICML Workshop on Machine Learning Meets Crowdsourcing, June 2013

“SimplyPut: A Crowdware System for Improving Health Communication and Literacy”

Invited Talk at Academic Pediatrics Association Annual Meeting, May 2013

“Human Computation: A Broad Perspective”

4-hour Tutorial at the Intelligent User Interfaces (IUI) Conference, March 19, 2013

“Human Computation meets Interactive Machine Learning”

Invited Talk at IUI Interactive Machine Learning Workshop, March 19, 2013

“Balancing Task-Centric and Human-Centric Objectives in Human Computation Systems

Harvard University, CRCS Lunch Seminar, September 17 2012

“Human Computation: Core Research Questions and State of the Arts”

4-hour Tutorial at AAAI Conference, August 7 2011

“Human Computation: Research Questions and Opportunities”

University of Toronto, September 28 2011

Caltech, May 11 2011

University of California at San Diego, May 10 2011

Simon Fraser University, May 9 2011

University of Washington, May 6 2011

University of British Columbia, May 4 2011

“Towards Large-Scale Collaborative Planning Using Humans and Machines”

Carnegie Mellon University, CrowdSourcing Lunch, Nov 16 2011

ADVISING

Alex Williams, Ph.D. Student
Mike Shakerman, Masters Student
William Callaghan, Masters Student
Tim Tse, Masters Student
Kevin Chen, Undergraduate Student
Helga Jiang, Undergraduate Student
Tiasa Mondol, Undergraduate Student

TEACHING
EXPERIENCE

Instructor, “User Interfaces” (CS349)
Winter 2015, University of Waterloo

Instructor, “Human in the loop Systems” (CS889)
Fall 2014 and Fall 2015, University of Waterloo

Instructor, “Crowdsourcing as a Tool for Research and Public Engagement”
5-day Course, Digital Humanities Summer Institute, University of Victoria, June 2015.

Guest Lecturer, “Introduction to Machine Learning” (COMP 135)
Introduction to Human Computation
with Prof. Carla Brodley, Fall 2012, Tufts University.

Teaching assistant, “Computer Music Systems and Information Processing” (15-323)
with Prof. Roger Dannenberg, Spring 2012, Carnegie Mellon University.

Teaching assistant, “Science of the Web” (15-396)
with Prof. Luis Von Ahn, Fall 2008, Carnegie Mellon University.

Teaching assistant, “AI and Probabilistic Reasoning” (COMP 526)
with Prof. Doina Precup, Spring 2005, McGill University.

Teaching assistant, “Artificial Intelligence I” (COMP 424)
with Prof. Doina Precup, Fall 2004, McGill University.

Teaching assistant, “Introduction to Computer Science I” (CPSC 124)
with Prof. Patrice Belleville, Spring 1999, University of British Columbia.

Participant, Eberly Center Documentation of Teaching Development Program, 2006-present
Participated in 10 teaching seminars, two videotaped teaching observations, a course and syllabus design session, and a pedagogy project exploring some aspects of teaching.

PROFESSIONAL
SERVICE

Conference Program Committees

CSCW, 2015 (Associate Chair)
CHI Play, 2015 (Associate Chair)
CHI, 2009-2016 (Reviewer)
UIST, 2011, 2013, 2014, 2015 (Reviewer)
IUI, 2011 (Reviewer)
HCOMP, 2013-2016 (PC)
IJCAI, 2016 (PC)
WWW, 2014 (PC)
AAAI, 2012, 2013 (PC)
ICWSM, 2010 (PC)
NIPS, 2011, 2012 (Reviewer)
ICRA, 2012 (Reveiwler)

Workshop Program Committees

Crowdsourcing and Online Behavioural Experiments, EC 2014
Crowdsourcing and Data Mining, KDD 2012
Spring Symposium for Wisdom of the Crowd, AAAI 2012
Computational Social Science and the Wisdom of the Crowds, NIPS 2010, 2011
Crowdsourcing for Information Retrieval, SIGIR 2011

Reviewer of Journal Publications

ACM Transaction on Computer-Human Interaction (TOCHI), 2013
ACM Transactions on Intelligent Systems and Technology (TIST), 2012
Journal of Information Retrieval Special Issue on Crowdsourcing, 2011
EURASIP Journal on Audio, Speech and Music Processing, 2011

Conference/Workshop Organizing Committees

Doctoral Symposium, HCOMP 2016 (co-chair)
Undergraduate Research Opportunities Conference (UROC), 2015, 2016 (Founder)
Citizen + X: Crowdsourcing in Science, Public Health and Government, HCOMP 2014
1st AAAI Conference on Human Computation and Crowdsourcing, HCOMP 2013
Human Computation for Science and Computational Sustainability Workshop, NIPS 2012
Human Computation Workshop (HCOMP), KDD 2009, 2010 and AAAI 2011, 2012

Grant Review Panel

NSF Cyber-Human Systems (CHS, formerly Human-Centered Computing), 2016
NSF III Small, 2015
NSERC-CIHR Collaborative Health Research Project (CHRP), 2015

Other Professional Service

Editorial Board, Citizen Science Journal
Founder, Undergraduate Research Opportunities Conference (UROC), 2015
Advisor, Cornell Lab of Ornithology NSF-Funded “CrowdID” Citizen Science Project
Advisory Board, Penn State University NSF IGERT proposal on “Big Data Social Science”

INDUSTRY EXPERIENCE

Ubisoft Entertainment Inc, Montreal, QC. 2005-2006.

Designed and implemented the need simulation, navigation and steering system for non-player characters for the award-winning next-gen (XBox 360 / PlayStation 3) console game, Assassin’s Creed.

IBM E-business Innovation Center, Vancouver, BC. 2000-2003.

Developed web applications, including e-commerce websites, clinical information systems, content management systems and education portals.

Sony, Tokyo, Japan. 1998.

Developed and integrated inverse kinematics algorithms into a VRML authoring tool. Presented research in written and spoken Japanese.

REFERENCES

Luis von Ahn (Ph.D. advisor)

Associate Professor
Computer Science Department, Carnegie Mellon University
Email: biglou@gmail.com

Eric Horvitz (internship mentor)

Managing Director
Microsoft Research
Email: horvitz@microsoft.com

Krzysztof Gajos (postdoc mentor)

Associate Professor of Computer Science
Intelligent Interactive Systems Group
School of Engineering and Applied Sciences, Harvard University
Email: kgajos@eecs.harvard.edu