

Ninth Annual Women in Machine Learning Workshop

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Background

Machine learning is one of the fastest growing areas of computer science research. We live in an information age where we must increasingly rely on intelligent technologies to help us make sense of all the data around us. Crossing boundaries between artificial intelligence and statistics, machine learning helps fulfill this role: search engines, face recognition, and DNA sequence analysis; speech and handwriting recognition; premature baby monitoring, autonomous locomotion, social network analysis, and user preference prediction are just some of the applications in which machine learning is routinely used. In spite of the wide breadth of theory and applications covered by machine learning, the percentage of female researchers in the field remains low, even when compared to other computer science fields. As in any research community, diversity is important for the robust growth of ideas, and thus the lack of women in machine learning is detrimental to advancement of the field. The evidence of this growth is further supported by growth in the NIPS conference; so much so that that this year the conference is moving to a larger venue, creating even more opportunity to interact with attendees.

According to the Computing Research Association, women make up only about 18% of computer science PhDs (2010-11). In a survey of the major machine learning conferences from 2006-2009, women made up about 10-14% of the reviewers and 11% of senior program committee members. For women beginning careers in machine learning, the lack of women in senior positions contributes to feelings of isolation and difficulties finding role models and mentors. Not being as well-connected as their male counterparts, women are less likely to be invited for advisory roles and tend to have fewer resources. These factors, combined with family pressures, result in an average 3000 female PhDs leaving computer science-related fields annually, representing a \$1.5 billion loss of educational investment--and an even greater loss of research potential (Technology Review, 12/2008).

Workshop for Women in Machine Learning

The workshop for Women in Machine Learning (WiML) started in 2006 as a way of creating connections within the small community of women working in machine learning, in order to encourage mentorship, networking, and interchange of ideas. The workshop has attracted various representatives from both industry and academia, whose talks showcased some of the cutting edge research being done by women. In addition to technical presentations and discussion, the workshop aims to incite debate on prospective research avenues and career choices for machine learning professionals. More information on past workshops can be found at <http://www.wimlworkshop.org>.

Following the success of past years' workshops, 2014 WiML will be co-located with the Conference on Neural Information Processing Systems (NIPS). We will hold a one-day workshop on December 8th 2014, in Montreal, Canada. The workshop will bring together established female researchers, postdoctoral scholars and graduate students from the machine learning community to meet, present research and share ideas. The day's events include a variety of forums, ranging from panel discussions to student presentations, for women to become more comfortable in their professional roles. In an environment where role models are hard to find, creating a positive, professional atmosphere is central to WiML's aims.

Workshop Format

The workshop achieves its goals through the following events.

Talks by established researchers. Following the theme of role models, technical talks by senior researchers reinforce the research aspect of working in machine learning, balancing the insights provided in the panel discussion. 72% of 2013 participants “liked” or “loved” the contributed oral sessions.

Talks and posters by current graduate students. Opportunity for graduate students to showcase their own research not only builds their confidence, but it also gives them visibility among their peers. In 2013 WiML had 4 invited talks, 5 contributed talks and 91 poster presenters, allowing for more than 70% of the workshop attendees to present their work.

Careers-focused panel discussion. The goal of this discussion is for women to have an opportunity to learn about machine learning-related career paths in both industry and academia from senior women in the field. 90% of the 2013 participants who attended the panel discussion found it useful. Numerous 2013 attendees mentioned the panel as one of their favorite aspects of the workshop.

Mentoring activities. The workshop includes a group mentoring event, where each senior researcher leads a roundtable discussion with graduate students about career paths, research, and work/life

balance. In addition, attendees are given the opportunity of being paired for 1:1 mentoring with senior colleagues, and meeting with them at their own convenience. All of the post-event survey respondents were interested in participating again, and had very positive comments about their experience.

Workshop lunch, dinner and roundtable discussions. Current graduate students are seated with more senior researchers, giving them an opportunity to network and ask more informal and individual questions. These opportunities for casual interactions, are frequently cited among attendees favorite parts of the program.

Overall the workshop has been consistently successful over the past 8 years, with 92% of 2013 attendees reporting overall satisfaction with the event. With the focus on promoting networking within the machine learning community, 60% of 2012 participants met people with whom they might collaborate. Participants also said that they felt less isolated at NIPS (47.4%). According to one 2011 participant, “I had never attended NIPS before so meeting people the first day through WiML made the rest of the conference less intimidating. It was comforting having familiar faces in the crowd, especially other students who often looked as lost as I did. By the end of the conference I had made a number of WiML friends who I hope to see again at future NIPS.” Year after year, 100% of participants state that they are interesting in attending WiML again. All 2013 attendees stated that they would recommend WiML to a friend.

Participants

2014 WiML will be co-located with the Neural Information Processing Symposium (NIPS), one of the highest profile conferences in machine learning - making it easier to attract high-calibre invited speakers. The 2013 invited speakers were, Jennifer Neville (Purdue University), Sivan Aldor-Noiman(the Climate Corporation), Diane Lambert (Google), and Maria Florina Balcan (Georgia Institute of Technology).

The workshop will draw on a history of success of bringing together a diverse group of women from various locations and career paths. Most of the participants (66%) were graduate students; the remainder draw primarily from academia and industry research institutions (15%). Although the majority of attendees are PhD students, master’s students and undergraduates are welcomed as well. In past years, participants have come from diverse places such as the United States, Canada, United Kingdom, France, Switzerland, Denmark, Germany, Turkey, Dubai, Venezuela, and New-Zealand.

Expenses

The primary expenses of the workshop include room hire, audio-visual facilities hire, and meals. In addition—especially as one of our objectives is to provide women access to other researchers and role models—we hope to offer all student presenters a travel subsidy to enable them to attend the

workshop. A more complete budget is detailed below:

\$ 1,500	Workshop venue, AV
\$ 500	Supplies and printing
\$ 3,000	Workshop coffee breaks
\$12,000	Workshop meals
\$20,000	Travel and accommodation for student attendees

The travel scholarships are the biggest expense, yet in the words of one 2013 participant: "It is really important that WiML keeps going giving travel grants, free registration and free meals. I would not be able to come without it!" This was true for many participants; the travel funds allowed them to attend WiML and in many cases NIPS as well. In 2013 63% of attendees responded that travel grants were "Very Important" to their WiML experience.

WiML 2014 Organizers

Sarah Brown, Northeastern University

Allison Chaney, Princeton University

Marzyeh Ghassemi, Massachusetts Institute of Technology

Jessica Thomson, University of Montreal

Sponsor Benefits

Sponsoring the Workshop for Women in Machine Learning is an opportunity for your company to demonstrate both its support for women in computing science and its commitment to stellar research. Because the workshop is co-located with NIPS, a top-tier research conference, your sponsorship will be visible to a large segment of the research community. Furthermore, we anticipate that co-location with NIPS, along with the high-caliber of invited speakers, will attract a focused, technical audience - presenting an excellent recruiting opportunity.

Sponsors will receive recognition in our promotional materials, which will be distributed to the universities worldwide.

Sponsor Recognition Levels

Gold - \$10,000

- Recruiting or Demo Table during coffee breaks and lunch
- Dedication of a meal to the sponsor

- Option to send a panelist to the workshop
- Recognition during workshop welcome
- Recognition in workshop program and promotional materials
- Promotional materials in the conference bag
- Company name and logo on website, with link

Silver - \$5,000

- Dedication of a meal or coffee break to the sponsor
- Recognition during workshop welcome
- Recognition in workshop program and promotional materials
- Promotional materials in the conference bag
- Company name and logo on website, with link

Bronze - \$2,000

- Recognition in workshop program and promotional materials
- Promotional materials in the conference bag
- Company name on website, with link

Supporter

- Recognition in the workshop program
- Company name on website, with link