Nitish Srivastava

CONTACT
INFORMATION

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RESEARCH
INTERESTS

Machine learning with deep neural networks for applications to vision, text and speech.

EDUCATION

University of Toronto, Toronto, Canada

PhD student, Computer Science, Jan 2013 - present.
Advisors: Geoffrey Hinton, Ruslan Salakhutdinov

University of Toronto, Toronto, Canada

Master of Science, Computer Science, Sept 2011 - Jan 2013.
Thesis: Improving Neural Nets with Dropout
Advisors: Geoffrey Hinton, Ruslan Salakhutdinov

Indian Institute of Technology, Kanpur, India

B.Tech., Computer Science, July 2007 - May 2011.

REFEREED
PUBLICATIONS

Nitish Srivastava, Elman Mansimov, and Ruslan Salakhutdinov. Unsupervised learning of video representations using LSTMs. In *Proceedings of the 32nd International Conference on Machine Learning (ICML-15)*, to appear.

Nitish Srivastava and Ruslan Salakhutdinov. Multimodal learning with deep Boltzmann machines. *Journal of Machine Learning Research*, 15:2949–2980, 2014.

Yichuan Tang, Nitish Srivastava, and Ruslan R Salakhutdinov. Learning generative models with visual attention. In *Advances in Neural Information Processing Systems 27*, pages 1808–1816. 2014, **Oral**.

Nitish Srivastava, Geoffrey Hinton, Alex Krizhevsky, Ilya Sutskever, and Ruslan Salakhutdinov. Dropout: A simple way to prevent neural networks from overfitting. *Journal of Machine Learning Research*, 15:1929–1958, 2014.

Nitish Srivastava and Ruslan Salakhutdinov. Discriminative transfer learning with tree-based priors. In *Neural Information Processing Systems (NIPS)*, pages 2094–2102, 2013.

Nitish Srivastava, Ruslan Salakhutdinov, and Geoffrey E. Hinton. Modeling documents with Deep Boltzmann Machines. In *Uncertainty in Artificial Intelligence (UAI)*. AUAI, 2013, **Oral**.

Nitish Srivastava and Ruslan Salakhutdinov. Multimodal learning with Deep Boltzmann Machines. In *Neural Information Processing Systems (NIPS)*, pages 2231–2239, 2012, **Oral**.

Rakesh Agrawal, Sreenivas Gollapudi, Krishnaram Kenthapadi, Nitish Srivastava, and Raja Velu. Enriching textbooks through data mining. In *First ACM Annual Symposium on Computing for Development, (ACM DEV)*, page 19. ACM, 2010.

P. De Reffye, Sébastien Lemaire, Nitish Srivastava, Fabienne Maupas, and Paul-Henry Cournède. Modeling Inter-Individual Variability in Sugar Beet Populations. In *International Symposium on Plant Growth Modeling, Simulation, Visualization and Applications (PMA)*. IEEE, 2009.

NON-REFEREED
PUBLICATIONS

Geoffrey E. Hinton, Nitish Srivastava, Alex Krizhevsky, Ilya Sutskever, and Ruslan Salakhutdinov. Improving neural networks by preventing co-adaptation of feature detectors. *CoRR*, abs/1207.0580, 2012.

Nitish Srivastava and Ruslan Salakhutdinov. Learning representations for multimodal data with deep belief nets. In *ICML Workshop on Representation Learning*, 2012.

INTERNSHIPS AND WORK EXPERIENCE	**Google Inc.**, Mountain View, CA, USA

Google Inc., Mountain View, CA, USA
Intern **June - Sept, 2013**
Mentor: Dr Greg Corrado
A new method for language understanding.

Google Inc., Mountain View, CA, USA
Intern **June - Sept, 2012**
Mentor: Dr Francoise Beaufays
Improving speech recognition using deep neural networks.

Microsoft Research Search Labs, Mountain View, CA, USA
Intern **May - July, 2010**
Mentors: Dr Sreenivas Gollapudi, Dr Krishnaram Kenthapadi, Dr Rakesh Agrawal
NLP system for finding semantically important concepts in textbooks and retrieving relevant webpages to further explain them.

Applied Mathematics and Systems Lab (MAS), Ecole Centrale Paris, France
Intern **May - July, 2009**
Mentor: Dr Paul-Henry Cournede
Worked on modeling heterogeneity and uncertainty propagation in plant population models. Designed and implemented an efficient algorithm to estimate the effect of variability in environmental conditions on the state of a plant population. Variability results could now be obtained much faster than by Monte-Carlo simulations.

TEACHING EXPERIENCE

Co-Instructor
Introduction to Neural Networks **Winter 2015**
Teaching Assistant
Introduction to Neural Networks **Winter 2012, 2013, 2014**
Introduction to Machine Learning **Fall 2013, 2014**
Neural Networks for Machine Learning, MOOC version on Coursera **Fall 2012**
Algorithm Design and Analysis **Fall 2011**

SCHOLARSHIPS

Ontario Graduate Scholarship. (CAD 15,000, 2011-12)

Summer Undergraduate Research Grant for Excellence (SURGE) IIT Kanpur. (EUR 2,500, 2009)

Goldman Sachs Global Leader Award. (USD 3,000, 2009).

Aditya Birla Group Scholarship for funding undergraduate studies. Awarded to 10 engineering students across all Indian universities. (INR 260,000, 2007-11)

Central Board of Secondary Education Scholarship for Professional Studies. (INR 40,000, 2007-11).

Indian National Mathematics Olympiad Scholarship. (INR 15,000, 2007-08)

HONORS AND AWARDS

Academic Excellence Award for 3 consecutive years 2007-10 by IIT Kanpur, India

Ranked 2nd in India (among nearly 300,000 students) in the Joint Entrance Exam 2007 conducted by the Indian Institutes of Technology.

Ranked 1st in India and won the Gold Medal in the National Science Olympiad 2006.

Was among the 30 students to be selected from India for participating in the prestigious Nurture Programme (2007-11) organized by the National Board for Higher Mathematics.

TECHNICAL SKILLS
- Experience in writing CUDA kernels for implementing deep learning algorithms.
- Experience in writing C++ and Python code for large scale distributed systems.