Yann N. Dauphin

CONTACT INFORMATION

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OBJECTIVE

I am interested in the development and application of machine learning algorithms that can learn from vast amounts of unlabeled data.

RESEARCH INTERESTS

machine learning, unsupervised learning, deep learning, auto-encoders, boltzmann machines, natural language processing, computer vision, speech processing

EDUCATION

Université de Montréal, Montréal, Québec Canada

Ph.D., Computer Science, August 2011 to present

- Advisor: Professor Yoshua Bengio
- Area of Study: Machine Learning

We are developing deep learning algorithms that can scale to problems with vast amounts of data or high-dimensional data with applications to computer vision, natural language processing and speech processing.

M.S., Computer Science, August 2010 to August 2011

- Advisor: Professor Yoshua Bengio
- Area of Study: Machine Learning
- GPA: 4.1/4.3
- Transferred to Ph. D.

École Polytechnique de Montréal, Montréal, Québec Canada

B. Eng., Computer Engineering, August 2006 to June 2010

Gained an intimate understanding of modern computer architectures.

AWARDS

NIPS '11 Best Student Paper Award: Honorable Mention (0.1% of submissions) for *The Manifold Tangent Classifier*.

Winner of Phase 2 of the Unsupervised and Transfer Learning Challenge.

Pascal2 Best UTLC Paper Award for *Unsupervised and Transfer Learning Challenge: a Deep Learning approach*.

PUBLICATIONS

S. Rifai, Y. Bengio, Y. Dauphin, P. Vincent. A Generative Process for Sampling Contractive Auto-Encoders. In: *Proceedings of the 29th International Conference on Machine Learning (ICML 2012)*.

S. Rifai, Y. Dauphin, P. Vincent, Y. Bengio, X. Muller. The Manifold Tangent Classifier. In: *Advances in Neural Information Processing Systems (NIPS 2011)*. **Invited as plenary talk** (1.4% of submissions).

Y. Dauphin, X. Glorot, Y. Bengio. Large-Scale Learning of Embeddings with Reconstruction Sampling. In: *Proceedings of the 28th International Conference on Machine Learning (ICML 2011)*.

S. Rifai, G. Mesnil, P. Vincent, X. Muller, Y. Bengio, Y. Dauphin, X. Glorot. Higher Order Contractive Auto-Encoder. In: *Proceedings of the European Conference on Machine Learning (ECML 2011)*.

G. Mesnil, Y. Dauphin, X. Glorot, S. Rifai, Y. Bengio, et al. Unsupervised and Transfer Learning Challenge: a Deep Learning approach. In: *Journal of Machine Learning Workshop and Conference Papers (JMLR W&CP 2011)*.

Professional Experience

Google, New York, New York, US

R&D Intern for speech recognition **May 2012 to August 2012**

- Implemented and developed new deep learning algorithms for automatic speech recognition that scale to billions of examples.

SteerAds, Montréal, Québec Canada

R&D Engineer for learning algorithms **January 2011 to present**

- Implemented all learning algorithms for intelligent online ad placement.
- Deployed in production serving over 10,000 requests per second.
- Used datasets containing hundreds of millions of examples.

Ericsson, Montréal, Québec Canada

R&D Intern for developper tools **May 2009 to August 2009**

- Part of a team to integrate the Linux Trace Toolkit into the Eclipse IDE.
- Designed an implemented part of the user interface.
- Designed an automatic test suite for the user interface.

Soltic, Montréal, Québec Canada

Developper and Founding Member **January 2009 to December 2009**

- Development of a screen-based information diffusion system.
- Sold license to Collège Regina Assumpta.

Lambda Tree Media, Montréal, Québec Canada

Co-Founder **May 2008 to January 2009**

- We wanted to make a good dating site for people in their forties.
- Design and implementation of the website.

VerkkoStadi Technologies, Montréal, Québec Canada

Developper for handwriting recognition system **May 2007 to August 2007**

- Designed and implemented an handwriting recognition system using convolutional networks.

Teaching Experience

École Polytechnique de Montréal, Montréal, Québec Canada

Teaching Assistant **September 2007 to September 2009**

- Lab Instructor for INF 1995: Computer Engineering Project I
  - Autumn 2007, Autumn 2009
  - Responsible for supervision and grading of 3 hour laboratory where first-year undergraduate students build and program a robot.
- Lab Instructor for INF 1600: Architecture of micro-computers
  - Autumn 2009
  - Responsible for writing, supervision and grading of 3 hour laboratory where first-year undergraduate students learn about the design of micro-processors and the assembly language.

- Assistant Lab Instructor for INF 2990: Computer Engineering Project II
  - Autumn 2008
  - Responsible for 3 hour laboratory where sophomore undergraduate students learn how to make a 3D game.

Service

Contributor to several open-source software projects, including:

- GNU CLisp, one of the top Lisp compilers
- JGAP, a popular library for implementing Genetic Algorithms
- SWTBot, a UI testing tool

Computer Science Games, 2010

- Vice-President in charge of competitions for this annual north-american computer science competition.
- Budget of over 50 000$ with over 300 participants.

Hardware and Software Skills

Computer Programming:

- C, C++, Python, Java, Assembly (x86), Scheme, JavaScript, Lisp, GNU make, SQL and others

Analog and Digital Electronics:

- Implementation of digital circuits on FPGA.
- Design and building of analog circuits (e.g., filters).
- Computer-Aided Design Tools: Cadence OrCAD, SPICE, Xilinx Studio

Embedded and Real-time Systems:

- Programming micro-controllers (e.g., Atmel ATmega 16)
- Programming for the embedded and real-time μ-C operating system.

Information/Internet Technology:

- Networking (UDP, TCP), Services (Apache, MySQL, Nginx)
- Design and implementation of web sites

Operating Systems:

- Apple OS X, Linux, Microsoft Windows

References Available to Contact

Dr. Yoshua Bengio (e-mail: yoshua.bengio@umontreal.ca; phone: +1 (514) 343 6804)

- Professor, Département d'informatique et de recherche opérationnelle, Université de Montréal
  - ◇ P.O. Box 6128, Centre-Ville Branch Montréal (QC), H3C 3J7, Canada
  - ⋆ *Dr. Bengio is my graduate advisor.*

Dr. Pascal Vincent (e-mail: vincentp@umontreal.ca; phone: +1 (514) 343 7472)

- Professor, Département d'informatique et de recherche opérationnelle, Université de Montréal
  - ◇ P.O. Box 6128, Centre-Ville Branch Montréal (QC), H3C 3J7, Canada