

Y-Lan Boureau

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Education

2007–2012 **New York University, Courant Institute of Mathematical Sciences / Ecole Normale Supérieure, INRIA Willow project-team**, PhD program in Machine learning/Computer vision.

Advisors *Yann LeCun / Jean Ponce*

Thesis title Learning hierarchical feature extractors for image recognition.

2005–2006 **Ecole Normale Supérieure, Paris**, M. Sc., Cognitive Neuroscience.

2005–2007 **Telecom ParisTech, Paris**,
Training in statistics and signal processing.

2002–2005 **Ecole Polytechnique, Palaiseau**.
Training in biology, mathematical analysis and computer science.
Master's degree in biology, Sep. 2005
B.Sc. in mathematical analysis and computer science, Sep. 2004
Ranked 1st at the entrance examination.

Work experience

2012-present **New York University, Center for Neural Sciences, New York**, Postdoctoral researcher.
Working with Nathaniel Daw on the neural bases of self-control.

Summer 2011 **Google Research, Mountain View**, Summer internship, 4 months.
Improving algorithms for learning hierarchical trees of labels for image annotation and retrieval.
Host: Samy Bengio

2006-2007 **New York University, New York**, internship, 7 months.
Unsupervised learning of sparse features. Advisor: Yann LeCun

2006 **Service Hospitalier Frédéric Joliot, Orsay, France**, 6 months.
Functional imaging of syntax processing.
Advisors: Christophe Pallier and Stanislas Dehaene.

2005 **University College London - Gatsby Computational Neuroscience Unit, London**, 4 months.
Modeling interaction of reward and punishment systems in the brain.
Advisor: Peter Dayan.

Publications

Y-Lan Boureau, Francis Bach, Yann LeCun, and Jean Ponce. Learning mid-level fea-

tures for recognition. In *Proc. International Conference on Computer Vision and Pattern Recognition (CVPR'10)*. IEEE, 2010. 461 citations.

Y-Lan Boureau and Peter Dayan. Opponency revisited: Competition and cooperation between dopamine and serotonin. *Neuropsychopharmacology Reviews*, 36(1):74–97, January 2011. 137 citations.

Y-Lan Boureau, Nicolas Le Roux, Francis Bach, Jean Ponce, and Yann LeCun. Ask the locals: multi-way local pooling for image recognition. In *Proc. International Conference on Computer Vision (ICCV'11)*. IEEE, 2011. 109 citations.

Y-Lan Boureau, Jean Ponce, and Yann LeCun. A theoretical analysis of feature pooling in vision algorithms. In *Proc. International Conference on Machine learning (ICML'10)*. 177 citations.

Koray Kavukcuoglu, Pierre Sermanet, Y-Lan Boureau, Karol Gregor, Michael Mathieu, and Yann LeCun. Learning convolutional feature hierarchies for visual recognition. In *Advances in Neural Information Processing Systems (NIPS 2010)*, 2010. 146 citations.

Marc'Aurelio Ranzato, Y-Lan Boureau, Sumit Chopra, and Yann LeCun. A unified energy-based framework for unsupervised learning. In *Proc. Conference on AI and Statistics (AI-Stats)*, 2007. 24 citations.

Marc'Aurelio Ranzato, Y-Lan Boureau, and Yann LeCun. Sparse feature learning for deep belief networks. In *Proc. Neural Info. Proc. Systems*, 2007. 236 citations.

Marc'Aurelio Ranzato, Fu-Jie Huang, Y-Lan Boureau, and Yann LeCun. Unsupervised learning of invariant feature hierarchies with applications to object recognition. In *Proc. Computer Vision and Pattern Recognition Conference (CVPR'07)*, 2007. 354 citations.

Other research activities

- Teaching Teaching Assistant, Machine Learning, New York University, Fall 2008.
- Reviewing Journal of Machine Learning Research, Machine Learning, Transactions on Pattern Analysis and Machine Intelligence, Neurocomputing, Image and Vision Computing, International Conference on Machine Learning (ICML), Neural Information Processing Systems (NIPS), Neural Information Processing Systems - Workshop on Deep Learning and Unsupervised Feature Learning, Neural Information Processing Systems - Workshop on Learning Semantics, International Conference on Learning Representations (ICLR), International Conference on Artificial Intelligence and Statistics (AISTATS), European Conference on Computer Vision (ECCV), Conference on Computer Vision and Pattern Recognition (CVPR), International Conference on Computer Vision (ICCV).

Academic awards

- Simons Junior fellowship, 2014-2017
- Janet Fabri Prize, for an outstanding dissertation in computer science, Courant Institute of mathematical Sciences, New York University, 2013
- Sandra Bleistein Prize, for notable achievement by a woman in applied mathematics or computer science, Courant Institute of mathematical Sciences, NYU, 2012
- Dean's dissertation fellowship, New York University, 2011
- Research internship prize, Ecole Polytechnique, 2005
- Concours général (French national competition): Physics, 2nd prize, 2000; Philosophy, 2nd accessit, 2000; Latin translation, 1st prize, 1999; French to Latin translation, 1st prize, 1999; Greek translation, 1st prize, 1999