

Nicolas Le Roux

Researcher

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🌐 <http://nicolas.le-roux.name>

Professional experience

2020–Now **Adjunct professor**, *University of Montreal*, Canada.

2017–Now **Adjunct professor**, *McGill*, Canada.

2017–Now **Research scientist**, *Google Brain Montreal*, Canada.

- Performs research in large-scale optimization and reinforcement learning
- Built, grew and manage the optimization coalition in Montreal
- Started and leads a initiative to improve the well-being of Google Brain members (1000 people)

2012–2017 **Research lead**, *Criteo*, France.

- Created and grew the Paris research team
 - Defined the interactions with the other teams in the R&D
 - Defined the recruiting process and recruited researchers
 - Mentored researchers
 - Led weekly meetings with remote research teams to favor communication
 - Led the quarterly discussions on projects and deliverables
 - Scientific point of contact for the rest of the company
 - Organized a workshop to increase awareness of Criteo's scientific problems
- Ensured proper interactions between the business and research teams
 - Defined the short-term and long-term scientific roadmaps
 - Led projects yielding additional revenue of several million dollars per year (distributed learning, improved product recommendation, feature selection)
 - Communicated about the research achievements to the rest of the company

2010–2012 **Postdoc at Inria**, *École Normale Supérieure de Paris*, France.

- Convex optimization
- Metric learning

Summer 2010 **Invited researcher at the Courant Institute**, *New-York University*, USA.

2008–2010 **Postdoc at Microsoft Research**, *Cambridge*, United Kingdom.

- Large-scale optimization
- Generative model of images

2004–2008 **PhD at the LISA lab**, *University of Montreal*, Canada.

- Theoretical and practical aspects of neural networks
- Large-scale optimization

Education and awards

2019 **AI chair**, *CIFAR*, Canada.

2018 **Lagrange prize in continuous optimization**, *SIAM*.

2010 **Excellence scholarship (declined)**, *CIFAR*, Canada.

2008–2010 **Microsoft Research Fellowship**, *Darwin College*, Cambridge, UK.

2004–2008 **PhD in machine learning**, *University of Montreal*, Canada.

2002–2003 **MSc. in mathematics, vision and learning**, *ENS Cachan*.

2000–2003 **MSc. in applied mathematics**, *École Centrale Paris*.

Research duties

- Reviewer **NeurIPS, ICML, ICLR, JMLR, PNAS, CVPR, Neural Computation.**
- Area chair **ICML, ICLR, NeurIPS, AACL.**
- Senior Area chair **AAAI.**
- Assoc. editor **TPAMI.**
- Organizer **Optimization and Reinforcement Learning tutorial, *NeurIPS 2020.***
- Meetup co-chair **NeurIPS 2019.**
- Organizer **Optimization Foundations of Reinforcement Learning Workshop, *NeurIPS 2019.***
- Organizer **Montreal AI Symposium, 2018.**
- Organizer **Deep Learning Workshop, *NIPS 2011.***
- Creator **Machine learning in the real world yearly Workshop, *Criteo.***
- Organizer **Machine Learning reading group, *MSR Cambridge.***

Teaching

- 2005 **Learning algorithms (TA), MSc., *University of Montreal.***
- 2009 **Optimization, MSc., *Gatsby Computational Neuroscience Unit, 3 hours.***
- 2010–2016 **Neural networks and optimization, MSc., *ENS Cachan, 3 hours.***
- 2012 **Introduction to machine learning, MSc., *ENS Ulm, 9 hours.***
- 2015 **Neural networks and optimization, MSc., *Télécom ParisTech, 3 hours.***
- 2016 **ML for the industry, *Machine Learning Summer School, Cádiz, 3 hours.***
- 2017 **Optimization, *Machine Learning Summer School, Montreal, 1.5 hours.***
- 2018 **Optimization, *Machine Learning Winter School, Montreal, 1.5 hours.***

Patents

- 2012 **Data processing using restricted Boltzmann machines.**
N. Le Roux, J. Winn and J. Shotton
US Patent 8,239,336
- 2012 **Image processing using masked restricted Boltzmann machines.**
N. Le Roux, J. Winn, J. Shotton and N. Heess
US Patent 8,229,221

Miscellaneous

- Cycling 3800 miles from Vancouver to the Arctic Ocean: <http://www.arctic2007.org>
1500 kilometres in New Zealand