

Philippe Desjardins-Proulx

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CURRENT POSITION	Ph.D. candidate, Quebec Center for Biodiversity Science, McGill University, Canada., Université du Québec à Montréal, Canada.
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CITIZENSHIP	Canada
LANGUAGES	FRENCH: Native language ENGLISH: Full professional proficiency JAPANESE: Elementary proficiency
EXPERTISE	<ul style="list-style-type: none">• Machine Learning: My thesis focuses on the problem of deep transfer learning, which could be described as the capacity to automatically transfer knowledge between a source (the knowledge we want to transfer) and a target (the model we want to build). I rely on graphical models and techniques from natural language processing, with a special focus on Markov logic networks.• Scientific computing: Almost all my undergraduate projects were done on scientific computing applied to biology and I worked four years (2009-2012) as a research professional, focusing on C/C++/CUDA simulations on the Canada Research Chair on Terrestrial Ecosystems' scientific cluster. I'm particularly interested in building high-performance applications capable of scaling to several cores & machines.• Ecology: I have contributed to theoretical evolutionary ecology (speciation, community ecology) and worked with several biological data-sets.
EDUCATION	Department of Biology, Université du Québec à Montréal, Montréal, Canada. Ph.D., September 2012 – <ul style="list-style-type: none">• Thesis Proposal: <i>Achieving deep transfer learning using semantic networks, with applications to biology</i>• Adviser: Dr. Dominique Gravel• Co-adviser: Dr. Timothée Poisot• Area of Study: Machine learning; Natural Language Processing; Probabilistic Graphical Models; Ecology.• Comprehensive exam: Maximum Entropy in Ecology & Evolution• Courses: Advanced Distributed Computing (A13). College of Engineering, University of Illinois at Chicago, Chicago, USA. Graduate Certificate in Bioinformatics, 2012, <ul style="list-style-type: none">• Area of Study: Data Mining & biostatistics. Université du Québec, Québec, Canada.

B.S., 2009,

- Major in Biology,
- Minor in Mathematics & Computer Science.

AWARDS

Alexander Graham Bell Graduate Scholarship (2012)

- **From:** Natural Sciences and Engineering Research Council of Canada
- **Description:** Most competitive Canadian scholarship in science.
- **Value:** 105 000\$ (equivalent to 105 000 USD or 8 150 000 JPY, 2012 est.)

Windows Azure Research Award (2013)

- **From:** Microsoft Research
- **Description:** The first group of 32 awards given by Microsoft. Gives a generous access to Microsoft Azure for research purpose.
- **Proposal:** *Growing Intelligence with Cloud Markov Logic.*
- **Value:** >40 000 USD.

REFEREED JOURNAL PUBLICATIONS

- [1] **P Desjardins-Proulx** and T Poisot. Scriptoria: a website to track manuscripts in public revision control systems.
In prep: https://github.com/PhDP/ms_scriptoria
- [2] **P Desjardins-Proulx**, EP White, JJ Adamson, K Ram, T Poisot, and D Gravel. The case for open preprints in biology.
PLoS Biology 11(5): e1001563
- [3] R Vergilino, TA Elliott, **P Desjardins-Proulx**, TJ Crease and F Dufresne. Evolution of a transposon in *Daphnia* hybrid genomes. *Mobile DNA* 4-7, 2013.
DOI: 10.1186/1759-8753-4-7
- [4] D Ai, **P Desjardins-Proulx**, C Chu, and G Wang. The influence of immigration and dispersal limitation on the repeatability of niche and neutral communities.
PLOS ONE 7(9): e46164, 2012.
DOI: 10.1371/journal.pone.0046164
- [5] **P Desjardins-Proulx** and D Gravel. A complex speciation-richness relationship in a simple neutral model. *Ecology and Evolution* 2(8): 1781–1790, 2012.
DOI: 10.1002/ece3.292
- [6] **P Desjardins-Proulx** and D Gravel. How likely is speciation in neutral ecology?
The American Naturalist 179(1):137-144, 2012.
DOI: 10.1086/663196

OTHER CONTRIBUTIONS

- [7] **P Desjardins-Proulx**. The case for arXiv and a broader conception of peer-reviews. Invited blog, International Network of Next-Generation Ecologists, 2012.
<http://www.innge.net/?q=node/330>.
- [8] **P Desjardins-Proulx**, JL Rosindell, T Poisot, and D Gravel. A simple model to study phylogeographies and speciation patterns in space, 2012.
arXiv: 1203.1790.
- [9] **P Desjardins-Proulx**. A foot in the neutral trap.
Invited comment for *Trends in Ecology & Evolution*, 2012.
- [10] **P Desjardins-Proulx**. L'origine de la Biodiversité. Le Mouton Noir, Mai-Juin. Cahier Spécial sur la Biodiversité p.2, 2010. *Selected and republished by Gaia-Presse, a group sponsored by the Université Laval.*

JOB EXPERIENCES	Research Professional, Canada Research Chair on Terrestrial Ecosystem <ul style="list-style-type: none"> • From 2009 to 2012. • Supervisor: Dr. Dominique Gravel • Responsabilities: Programming high-performance simulations in C, C++, and CUDA on a distributed cluster; Design of ecological models to understand biodiversity; Teaching scientific computing to graduate students (C, C++, Python, UNIX tools).
TEACHING EXPERIENCES	Université du Québec, Québec, Canada. <ul style="list-style-type: none"> • 2013. I organized a series of meetings on information theory and inference. • 2012. CUDA training (intensive one-day course). • 2012. Scientific computing with C and C++ (grad. students/post-docs). • 2011. Scientific computing with C and C++ (grad. students/post-docs).
REFeree SERVICE	<i>Physica A: Statistical Mechanics and its Applications; Journal of Theoretical Biology; Theoretical Ecology; Acta Biotheoretica; Molecular Ecology Ressources; The American Naturalist; Journal of Plant Ecology.</i>
PROFESSIONAL MEMBERSHIPS	<ul style="list-style-type: none"> • Institute of Electrical and Electronics Engineers 2012–... • Quebec Center for Biodiversity Science 2012–...
PROGRAMMING SKILLS	<p>I have some experience with many programming languages, libraries, frameworks. I only list here my current working tools:</p> <ul style="list-style-type: none"> • Languages: C++, C, Haskell, F#, Java, C#, Julia, Python. • Front-end: A bit of NodeJS & AngularJS. • Databases: PostgreSQL, SQL, MongoDB. • Operating Systems: Linux (especially Debian/Ubuntu). • Writing: \LaTeX 2_ε
GRADUATE COURSES	<ul style="list-style-type: none"> • 2013. Advanced Distributed Computing [3 credits] Athabasca • 2012. Datamining (machine learning) [4 credits] UIC • 2011. Biostatistics [4 credits] UIC • 2010. Intro. to bioinformatics [4 credits] UIC • 2010. Reading course on Ancestral Recombination Graphs [3 credits] UQAR
REFerees	On request.