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| CURRENT POSITION | Ph.D. candidate, Université de Sherbrooke, Canada, Canada Research Chair on Integrative ecology, Canada, Poisot Lab, Université de Montréal, Canada, Quebec Center for Biodiversity Science, Canada. |
| CONTACT | <i>email:</i> philippe.d.proulx@gmail.com <i>email (alt.):</i> philippe.desjardins.proulx@usherbrooke.ca <i>phone:</i> +1-418-732-9877 <i>skype:</i> philippe.desjardins-proulx <i>www:</i> http://phdp.github.io/ <i>github:</i> https://github.com/phdp/ <i>twitter:</i> phqpqc |
| EXPERTISE | <ul style="list-style-type: none">• Machine Learning: My thesis focuses on theory revision in statistical relational learning (the union of logic with probability), and how deep learning can be used with symbolic systems.• Scientific computing: I worked four years (2009-2012) as a research professional, focusing on C/C++ simulations and GPU computing with CUDA/OpenCL on the Canada Research Chair on Terrestrial Ecosystems' scientific cluster.• Bioinformatics: My main Ph.D. project involved machine learning in ecology. I also contributed to theoretical evolutionary ecology (speciation, community ecology) and worked with several biological data-sets. |
| EDUCATION | Department of Biology, Université de Sherbrooke, Canada. Ph.D., September 2012 – Fall 2017 <ul style="list-style-type: none">• Thesis Proposal: <i>Automatic Theory Revision and the Problem of Biodiversity</i>• Adviser: Dr. Dominique Gravel• Co-adviser: Dr. Timothée Poisot• Area of Study: Machine learning, molecular ecology, population genetics.• Comprehensive exam: Maximum Entropy in Ecology & Evolution.• Courses: Advanced Distributed Computing (A13), Business Intelligence (S15). 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, <ul style="list-style-type: none">• Major in Biology,• Minor in Mathematics & Computer Science. |
| AWARDS | Alexander Graham Bell Graduate Scholarship (2012) <ul style="list-style-type: none">• From: Natural Sciences and Engineering Research Council of Canada• Description: Most competitive Canadian scholarship in science.• Value: 105 000 CAD (equivalent to 105 000 USD or 8 150 000 JPY, 2012 est.) Windows Azure Research Award (2013) <ul style="list-style-type: none">• From: Microsoft Research |

- **Description:** The first group of 32 awards given by Microsoft (1000 applications). Gives a generous access to Microsoft Azure (in my case, Linux VMs) for research purpose.
- **Proposal:** *Growing Intelligence with Cloud Markov Logic.*
- **Value:** >40 000 USD.

NVIDIA hardware donation program (2014)

- **Description:** I was awarded an NVIDIA card for high-performance computing.
- **Proposal:** *Transfer Learning, Deep Learning, and the Puzzle of Biodiversity.*

REFEREED
JOURNAL
PUBLICATIONS

- [1] **P Desjardins-Proulx.** Learning Probabilistic Soft Logic Rules.
In Preparation.
- [2] **P Desjardins-Proulx.** Theory revision and transfer via hypergraph lifting on GPUs.
In Preparation.
- [3] **P Desjardins-Proulx, D Gravel, T Poisot.** Machine learning and theory revision in ecology: the Salix example.
In Preparation.
- [4] **P Desjardins-Proulx, D Gravel, T Poisot.** Scientific Theories and Machine Learning.
Submitted.
- [5] **P Desjardins-Proulx, D Gravel, T Poisot.** Ecological Interactions and the Netflix Problem.
Submitted.
- [6] D Beauchesne, **P Desjardins-Proulx, P Archambault, D Gravel** Thinking outside the box: Predicting biotic interactions in data-poor environments.
Vie & Milieu, 2007 (Accepted).
- [7] MG Matias, D Gravel, F Guilhaumon, **P Desjardins-Proulx, M Loreau, T Münkemüller, N Mouquet** Estimates of species extinctions from species–area relationships strongly depend on ecological context.
Ecography 37(5): 431-442.
- [8] D Gravel, T Poisot, **P Desjardins-Proulx** Using neutral theory to reveal the contribution of meta-community processes to assembly in complex landscapes.
Journal of Limnology 73 (s1).
- [9] **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
- [10] 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
- [11] 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
- [12] **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

- [13] **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
- [14] **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>.
- [15] **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.
- [16] **P Desjardins-Proulx**. A foot in the neutral trap.
Invited comment for *Trends in Ecology & Evolution*, 2012.
- [17] **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-Press, a group sponsored by the Université Laval.*
- JOB EXPERIENCES
- Research Professional, Canada Research Chair on Terrestrial Ecosystem**
- From 2009 to 2012.
 - **Supervisor:** Dr. [Dominique Gravel](#)
 - **Responsabilities:** Programming high-performance simulations in C, C++, and CUDA on a distributed cluster (Xeon processors + Tesla cards); Design ecological models to understand biodiversity; Teaching scientific computing to graduate students (C, C++, CUDA, UNIX tools).
- TEACHING EXPERIENCES
- Université du Québec, Québec, Canada.**
- 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
- Physica A: Statistical Mechanics and its Applications; Molecular Ecology Ressources; Methods in Ecology and Evolution; Ecology Letters; Journal of Theoretical Biology; Theoretical Ecology; Acta Biotheoretica; The American Naturalist; Journal of Plant Ecology.*
- PROGRAMMING SKILLS
- I have some experience with many programming languages, libraries, frameworks. I only list here my current working tools:
- **Languages:** *Expert* C++11/14, C; *Intermediate* Haskell, Python, R; *Basic* Java, Scala, Rust, F#.
 - **High performance computing:** CUDA, OpenCL, OpenMP, basic MPI.
 - **Operating Systems:** Linux (mostly Debian/Ubuntu-based).
 - **Cloud:** Azure (Linux VMs), Google, Amazon.
 - **Writing:** L^AT_EX 2_ε.
- GRADUATE COURSES
- 2015. Business Intelligence [A, 3 credits] Athabasca
 - 2013. Advanced Distributed Computing [A, 3 credits] Athabasca
 - 2012. Datamining (machine learning) [A, 4 credits] UIC
 - 2011. Biostatistics [A, 4 credits] UIC
 - 2010. Intro. to bioinformatics [A, 4 credits] UIC
 - 2010. Reading course on Ancestral Recombination Graphs [A+, 3 credits] UQAR

ONLINE
COURSES

- 2014. Technology Entrepreneurship

NovoEd/Stanford