Philippe Desjardins-Proulx

CONTACT

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GitHub: https://github.com/PhDP

CITIZENSHIP

Canada.

LANGUAGES

French & English. Basic knowledge of Japanese.

PROFESSIONAL INTERESTS

Artificial Intelligence; Machine Learning; Artificial Neural Networks; Complexity; Bayesian Inference; Information theory; Biodiversity; Theoretical Population Genetics; Theoretical Ecosystem Ecology.

OTHER INTERESTS

Effective Technical Writing in English; Epistemology; Scientific Computing; Functional Programming; Open Source Software; Computational Finance.

MAJOR AWARDS

From: Natural Sciences and Engineering Research Council of Canada

- **Award:** Alexander Graham Bell Graduate Scholarship, 09/2012–08/2015
- **Value:** 105 000$ (≈ 105 000 USD ≈ 8 150 000 JPY, 2012 est.)

EDUCATION

Department of Biology, Université du Québec à Montréal, Montréal, Canada.

Ph.D., September 2012 – August 2015 *[expected]*

- Thesis Proposal: *Artificial Intelligence and the Puzzle of Genomic Diversity*
- Adviser: Dr. Dominique Gravel
- Area of Study: Artificial Intelligence (machine learning: neural networks) and its applications to biodiversity.

College of Engineering, University of Illinois at Chicago, Chicago, USA.

Graduate Certificate in Bioinformatics, 2012,

- Area of Study: Machine learning (Artificial Intelligence) and biostatistics.

Université du Québec, Québec, Canada.

B.S., 2009,

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

REFEREED JOURNAL PUBLICATIONS

[1] **P Desjardins-Proulx**, EP White, JJ Adamson, K Ram, T Poisot, and D Gravel. Developing a preprint culture in biology.
Submitted to PLOS Biology (in review)

[2] R Vergilino, TA Elliott, **P Desjardins-Proulx**, TJ Crease and F Dufresne. Evolution of a transposon in *Daphnia* hybrid genomes.
Accepted in Mobile DNA

[3] 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

[4] **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

[5] **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

[6] **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.

[7] **P Desjardins-Proulx**. A foot in the neutral trap.
Invited comment for *Trends in Ecology & Evolution*, 2012.

[8] **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.*

Teaching & Training

Université du Québec, Québec, Canada.

- 2013. I organized group studies of MacKay's *Information Theory, Inference, and Learning Algorithms*.
- 2012. CUDA training (intensive one-day course).
- 2012. Scientific computing with C (grad. students/post-docs).
- 2011. Scientific computing with C (grad. students/post-docs).

Referee Service

Journal of Theoretical Biology, Theoretical Ecology, Acta Biotheoretica, Journal of Plant Ecology.

Computer Skills

- **Programming languages:**
  - **Advanced:** C++11, C.
  - **Intermediate:** JavaScript, Haskell, Java, Go, Python, R.
  - **Basic:** Ruby, MatLab/Octave.
- **Tools & Frameworks**
  - **Operating systems:** Linux (Debian/Ubuntu, Arch).
  - **Writing:** LaTeX 2_ε, LibreOffice.
  - **Compilers:** llvm/clang, gcc, intel, ghc.
  - **Parallel computing:** CUDA, OpenMP.
  - **Linear algebra:** Armadillo.
  - **Revision control:** git, mercurial.
  - **Database:** Redis, MongoDB.
  - **Web:** Node.js (Express).
- **Web sites:**
  - Personal page: http://phdp.github.com.
  - TEE's website: http://chaire-eec.uqar.ca.
- **Primary working tools:**
  - LaTeX 2_ε, vim, tmux.

Professional Memberships

- Institute of Electrical and Electronics Engineers 2012–...
- International Society for Computational Biology 2010–...
- Society for the Study of Evolution 2008–...
- Quebec Center for Biodiversity Science 2012–...

Graduate Courses

- 2012. Datamining (machine learning) [A (4.0/4.0), 4 credits] UIC
- 2011. Biostatistics [A (4.0/4.0), 4 credits] UIC
- 2010. Intro. to bioinformatics [A (4.0/4.0), 4 credits] UIC
- 2010. Reading course on Ancestral Recombination Graphs [A, 3 credits] UQAR

Referees

Dr. Dominique Gravel

- Professor (Université du Québec à Rimouski)
- Canada Research Chair.
- e-mail: dominique_gravel@uqar.qc.ca
- phone: 1.418.723.1986 #1752

⋆ *I worked as a research profesionnal in Dr. Gravel's lab from September 2009 to August 2012, we also collaborated on many scientific projects. I am a Ph.D. student in his lab since September 2012.*

Dr. James Rosindell

- Post-doctoral researcher, Imperial College London, UK.
- e-mail: j.rosindell@imperial.ac.uk
- phone: +44 (0)2075 942263

⋆ *I have collaborated with Dr. Rosindell on several occasions.*