PASCALE GOURDEAU

DPhil (PhD) student at the University of Oxford
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RESEARCH INTERESTS

Learning theory, adversarially robust machine learning, automata theory

EDUCATION

DPhil (PhD) in Computer Science *2017 – Present*
University of Oxford
Supervisors: James Worrell, Varun Kanade and Marta Kwiatkowska
Research themes: learning theory, adversarially robust machine learning
Medical leaves: October 2019 – April 2020; October 2020 – April 2021

M.Sc. in Computer Science *2017*
McGill University, Montreal
Supervisors: Prakash Panangaden and Doina Precup
Thesis Title: *Bisimulation Pseudometrics for Weighted Finite Automata*
Overall GPA: 4/4

B.Sc. in Computer Science (Honours) *2012 – 2016*
McGill University, Montreal
Minor in Mathematics
Overall GPA: 3.94/4

EMPLOYMENT AND TEACHING EXPERIENCE

Department of Computer Science, University of Oxford *2018 – Present*
Course Teacher and Marker *Oxford, UK*

· Computational Learning Theory: Fall 2021
· Machine Learning: Fall 2018

Department of Computer Science, McGill University *2016 – 2017*
Teaching Assistant *Montreal, Canada*

· Programming Languages and Paradigms: Winter 2017
· Logic and Computation: Fall 2016
· Foundations of Programming: Summer 2016

Reasoning and Learning Lab, McGill University *Summers 2014 and 2015*
Research Assistant *Montreal, Canada*

· Summer 2015: automata theory research. Themes: minimization and approximation algorithms for automata, bisimulation metrics.
· Summer 2014: medical application of machine learning. Project: using machine learning classification algorithms to predict extubation readiness in exteme preterm infants.

DISTINCTIONS AND AWARDS

Graduate Scholarship *2019*
Awarded by Trinity College, Oxford for outstanding graduate research

Clarendon Scholarship *2017*
Three and a half years of funding (tuition fees and living expenses) for the DPhil in Computer Science at the University of Oxford

Natural Sciences and Engineering Research Council (NSERC) Postgraduate Doctoral Scholarship *2017*
Three years of funding for the DPhil in Computer Science at the University of Oxford

Natural Sciences and Engineering Research Council (NSERC) Graduate Scholarship *2016*
Funding for the M.Sc in Computer Science at McGill University

Anita Borg Memorial Scholarship *2015*
Scholarship from Google recognizing women's contribution and leadership in Computer Science

Natural Sciences and Engineering Research Council (NSERC) Undergraduate Student Research Award *2015*
Summer research funding in the Reasoning and Learning Lab at McGill University

Science Undergraduate Research Award *2014*
Summer research funding in the Reasoning and Learning Lab at McGill University

Full scholarship to attend Lester B. Pearson UWC *2010*
International boarding school network (United World Colleges) working towards peace and a sustainable future. Programme: International Baccalaureate (2 years)

PUBLICATIONS

Journal Publications

1. **P. Gourdeau**, V. Kanade, M. Kwiatkowska, and J. Worrell, "On the hardness of robust classification," in *Journal of Machine Learning Research*, 2021.

2. B. Balle, **P. Gourdeau**, and P. Panangaden, "Bisimulation metrics and norms for real-weighted automata," in *Information and Computation*, 2020.

Conference Publications and Preprints

1. **P. Gourdeau**, V. Kanade, M. Kwiatkowska, and J. Worrell, "When are local queries useful for robust learning?," under submission, 2022.

2. **P. Gourdeau**, V. Kanade, M. Kwiatkowska, and J. Worrell, "Sample complexity bounds for robustly learning decision lists against evasion attacks," in *International Joint Conference on Artificial Intelligence (IJCAI)*, 2022.

3. **P. Gourdeau**, V. Kanade, M. Kwiatkowska, and J. Worrell, "On the hardness of robust classification," in *33rd Conference on Neural Information Processing Systems (NeurIPS)*, 2019. [spotlight]

4. B. Balle, **P. Gourdeau**, and P. Panangaden, "Bisimulation metrics for weighted automata," in *44th International Colloquium on Automata, Languages, and Programming (ICALP), Schloss Dagstuhl-Leibniz- Zentrum fuer Informatik*, 2017.

5. **P. Gourdeau**, L. Kanbar, W. Shalish, G. Sant'Anna, R. Kearney, and D. Precup, "Feature selection and oversampling in analysis of clinical data for extubation readiness in extreme preterm infants," in *2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, pp. 4427–4430, IEEE, 2015.

INVITED TALKS

Sample Complexity Bounds for Robust Classification

· University of Princeton
· Laval University, Quebec City

On the Hardness of Robust Classification

· Mila, McGill/University of Montreal
· IRIF, Paris
· Bordeaux

Bisimulation Metrics for Weighted Finite Automata

· University of Warwick
· University College London
· University of Oxford