Clara Lacroce

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ABOUT ME

I am a final year PhD student working on approximation of black boxes trained for language modelling on sequential data. To make those models more interpretable, I use tools from functional analysis, dynamical systems and control theory.

EDUCATION

PhD in Computer Science, 2016 - Current
McGill University and Mila
Thesis: *Spectral Norm Approximate Minimization*
Supervisors: Prakash Panangaden, Doina Precup
GPA: 4.00/4.00
Selected Courses: *Quantum information theory, advanced cryptography, machine learning, reinforcement learning, formal verification*

MSc in Mathematics 2015 - 2016
Concordia University, ALGANT Erasmus Mundus
Specialization: Number theory
GPA: 4.16/4.30
Selected Courses: *Number theory, elliptic curves*

Master in Mathematics 2014 - 2015
University of Padova, ALGANT Erasmus Mundus
Specialization: Algebra and geometry
GPA: 110/100 cum Laude
Selected Courses: *Cryptography, algebraic geometry, ring theory, symplectic mechanics, differential equations*

BSc in Mathematics 2010 - 2014
University of Padova
GPA: 101/100

PUBLICATIONS

Balle B., **Lacroce C.***, Panangaden P., Precup D., Rabusseau G. *Optimal Spectral-Norm Approximate Minimization of Weighted Finite Automata*, ICALP 2021

Lacroce C.*, Panangaden P., Rabusseau G. *Extracting Weighted Automata for Approximate Minimization in Language Modelling*, ICGI 2020-2021

Lacroce C.* *Deformations of Galois Representations*, (Master Thesis)

*corresponding author. Authors are listed in alphabetical order

SELECTED TALKS

Extracting Weighted Automata for Approximate Minimization in Language Modelling, ICGI 2020-2021 (paper presentation) 2021

Optimal Spectral-Norm Approximate Minimization, ICALP 2021 (paper presentation) 2021

Optimal Spectral-Norm Approximate Minimization, Online Worldwide Seminar on Logic and Semantics, Cambridge (invited talk) 2021

Approximate Minimization Reasoning and Learning Lab, Montréal 2021

Introduction to Algebraic Geometry McGill Graduate Seminar, Montréal 2017

Deformations of Galois Representations ALGANT Seminar, Bordeaux 2016

Introduction to Modular Forms McGill Graduate Seminar, Montréal 2016

Hilbert Ramification Theory Graduate Seminar, Padova 2015

AWARDS

Outstanding Teaching Assistant Award, McGill University 2019

Graduate Excellence Award, McGill University 2017,2018

Cryptoworks21 Scholarship, NSERC 2016-Declined

Armand C. Archambault Fellowship, Concordia University 2016
International ALGANT Award, ALGANT 2015-2016

EXPERIENCE

Teaching Assistant, McGill University 2017-2020
- Led tutorials and Q&A sessions with 50 students
- Explained difficult concepts in an easy way and provided precise feedback

Invigilator, McGill University 2017-2019
Baker and Cashier, Boulangerie Arte & Farina 2017-2019
- Multitasking baking and costumer service in English, French and Italian.

Child Educator, CPE Childcare, McGill, Montréal 2018-2019
- Supervised 12 toddlers

Student Representative, BofD, University of Padova, Board of Directors 2015
- Advocated for students needs, elected to represent ∼60K students

Concierge, Collegio Mazza, Padova 2012-2015
- Worked part-time to pay for my studies

COMMUNITY SERVICE

Volunteer, Montréal Children's Hospital 2019-Current
- Assisting kids and babies post surgery

Child Educator, CPE Childcare, McGill, Montréal 2017-2019
- Supervised 12 toddlers

Student Representative, University of Padova, 2011-2015
- Advocated for students in the Math Department

Promoter, AVIS (Italian Blood Donors Association), 2008-2011

COMPUTER SKILLS

Software/OS: Matlab, Git, Unix, LaTeX, Microsoft Office
Programming: Python

LANGUAGES

English (fluent), **French** (conversational), **Italian** (native)