Issam H. Laradji   Curriculum vitae

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PROFILE

I am currently a PhD research student in the UBC Machine Learning lab of my supervisor Mark Schmidt.

My research work involves large-scale machine learning, optimization, deep learning, and applying current and new data science methods to real-life datasets.

EDUCATION

Ph.D. in Computer Science (UBC),   Sep 2014 - Aug 2019 (Expected)
- University of British Columbia
- Supervisor: Mark Schmidt
- *GPA: 4.0/4.0*
- Average Grade: 95.6 %

M.Sc. in Information & Computer Science,   Sep 2012 to May 2014
- King Fahd University of Petroleum & Minerals
- Thesis Topic: *New Algorithms for Deep Learning Machines*
- Advisor: Dr. Lahouari Ghouti
- *GPA: 4.0/4.0*

B.Sc. in Information & Computer Science,   Feb 2008 to Aug 2012
- King Fahd University of Petroleum & Minerals
- *GPA: 3.647/4.0*
- *Last two years GPA: 4.0/4.0*

PUBLICATIONS

1. **Coordinate Descent Converges Faster with the Gauss-Southwell Rule Than Random Selection.** Nutini, Julie, Mark W. Schmidt, **Issam H. Laradji**, Michael P. Friedlander, and Hoyt A. Koepke. *ICML*, 2015.

2. **Convergence Rates for Greedy Kaczmarz Algorithms, and Randomized Kaczmarz Rules Using the Orthogonality Graph.** Nutini, Julie, Behrooz Sepehry, **Issam H. Laradji**, Mark W. Schmidt, Hoyt A. Koepke and Alim Virani. *UAI* , 2016.

3. **Software defect prediction using ensemble learning on selected features.** Laradji, Issam H., Mohammad Alshayeb, and Lahouari Ghouti. *Elsevier IST*, 2015.

4. **Perceptual hashing of color images using hypercomplex representations.** Laradji, Issam H., Lahouari Ghouti, and El-Hebri Khiari. *IEEE ICIP*, 2013.

5. **Sparse Single-Hidden Layer Feedforward Network for Mapping Natural Language Questions to SQL Queries. Laradji, Issam H.**, Lahouari Ghouti, Faisal Saleh, and Musab A. AlTurki. *Springer ICANN* , 2014.

6. **XML classification using ensemble learning on extracted features. Laradji, Issam H.**, Mohammed Salahadin, and Lahouari Ghouti. *ACM Southeast Regional Conference*, 2014.

SELECTED PROJECTS	Mitacs-Accelerate Graduate Research Internship Program	Jan 2016 - Oct 2016

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Mitacs-Accelerate Graduate Research Internship Program   Jan 2016 - Oct 2016
- Optical Recognition of Anglers.

Google Summer of Code 2014
- Implemented and wrote the documentation for Neural Network algorithms for the sklearn python open-source library [1].

Independent Research Course
- Autonomous Helicopter Control using reinforcement learning methods.

Kaggle data science competitions
- Implemented many data science algorithms for competitions on gender prediction from handwriting, natural language processing, stock price prediction, and predicting cause-effect pairs.

UBC Learning Analytics Hackathon 2.0   Jan 28-29, 2017
- Implemented a prototype for predicting what students are most interested in from a given course using tweets, students' viewing history, clicks, and discussions in the past offerings of the course.

SportsHack 2015   Nov 27-29, 2016
- Implemented a prototype for predicting the outcome of a play for CFL football players.

SELECTED CODE IN MY GITHUB ACCOUNT
- Graphical Models[2]
- Reinforcement Learning
- Software Defect Prediction
- Neural Networks
- XML Classification
- PrettyPlots

RESEARCH GROUPS

UBC Machine Learning Reading Group [3]
- Organizing the group, maintaining its website, and regularly attending its weekly meetings.
- Prepared and presented topics on graphical models, non-convex optimization, parallel algorithms, large-scale kernel methods, convolutional neural networks, kalman filters, and inverse reinforcement learning.

UBC Machine Learning Theory Reading Group [4]
- Regularly attending its weekly meetings.
- Prepared and presented topics on Radamcher Complexity, Support Vector Machine Theory, and Neural Networks Theory.

TEACHING EXPERIENCE

Workshop for a Tekathon ran by Illuminate Vancouver   May 2017
- Ran a workshop on Python in Data Science, recommender systems, and intelligent chat bots.[5]

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[1]Found here: http://scikit-learn.org/stable/modules/neural_networks_supervised.html
[2]Found here: https://github.com/IssamLaradji
[3]Found here: http://www.cs.ubc.ca/labs/lci/mlrg/
[4]Found here: https://www.cs.ubc.ca/labs/beta/Courses/MLTRG.html
[5]https://github.com/IssamLaradji/Tekathon_Workshop_2017

Workshops for the ECE UBC Department   Apr 2017
- Ran a workshop on Python and its applications in Data Science.
- Ran a workshop on Machine Learning Algorithms and Applications.

UBC CS TA training event   Sep 2016
- Facilitated the **Time Management** session in the event.

Instructional Skills Workshop   Apr 2015
- Completed a 3-day intensive workshop that develops participant's teaching skills and confidence.

CPSC 340 - Machine Learning and Data Mining
- Taught it 3 times: (Sep 2015 - Dec 2015), (Sep 2016 - Dec 2016), and (Jan 2016 - Current).
- Required to write Python code for the assignments, prepare and teach weekly tutorials, regularly engage with students in the discussion forums, and hold office hours, mark assignments and exams.

CPSC 210 Software Construction   Jul 2015 - Aug 2015
- Required to teach lab sections weekly where students were required to solve problems using JAVA.

CPSC 221 Basic Algorithms and Data Structures   May 2015 - Jun 2015
- Required to teach lab sections weekly where students were required to solve problems using C++.

CPSC 422 Advanced Artificial Intelligence   Jan 2015 - Apr 2015
- Regularly engage with students in the discussion forums, hold office hours, mark assignments and exams.

CPSC 322 Artificial Intelligence   Sep 2014 - Dec 2014
- Regularly engage with students in the discussion forums, hold office hours, mark assignments and exams.

ACHIEVEMENTS   **Summer School 2017 in Deep Learning and Reinforcement Learning.**

Big Data University Innovation Prize won at SportsHack 2015.

Master Kaggle Participant (Data Science Competition hub)   2014
- "Master" Kaggler [6]; ranked in the top 100 among more than 12,800 members in the year 2014. Notable performance in problems of Gender prediction from handwriting, Natural language processing, Stock price prediction, and predicting Cause-effect pairs.

AI Sandbox Capture the flag competition [7]   Feb 2013
- Participated in an AI competition to control a realistic team of bots. Ranked in the top 11 among more than seventy participants.

Summer Project

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[6]http://www.kaggle.com/users/65920/issam-laradji
[7]http://aisandbox.com/start/

- Received Google Summer of Code 2014 grant for implementing Neural Network modules for a python open-source library [8]

Online courses with statement of Accomplishment
- **Coursera**: "Algorithms: Design and Analysis, Part 1", "Machine Learning", "Introduction to Data Science", "Coding the Matrix".
- **edX** : "Learning from Data".

Undergraduate project: Agent-based Surveillance System
- Developed a Java program that registers faces and can recognize them efficiently under different lighting. Earned first place in "15th Saudi Technical Exchange Meeting" project competition.

Passed promotion exams of English and Math courses and was promoted to undergraduate level skipping preparatory year   Feb 2008

Awards and Scholarships

- Graduate TA Award 2015 at the UBC Computer Science department.

- Google Summer of Code 2014 grant.

- UBC Four Year Fellowship (Awarded Jan 2015).

- Scholarship for M.Sc. studies at King Fahd University of Petroleum & Minerals.

- Scholarship for B.Sc. studies at King Fahd University of Petroleum & Minerals.

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[8]http://www.google-melange.com/gsoc/proposal/public/google/gsoc2014/issamou/5668600916475904