

# Lalla MOUATADID

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## EDUCATION

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- 2014 | **PhD**, Computer Science, Theory Group: **Algorithms & Graph Theory**  
[Expected July 2018] | University of Toronto (UofT), ON, Canada  
Supervisors: Derek Corneil & Allan Borodin
- 2012-2013 | **Master of Science**, Computer Science, Theory Group  
University of Toronto (UofT), ON, Canada  
Supervisors: Derek Corneil & Allan Borodin  
Thesis: *Linear Time Algorithms on Cocomparability Graphs*
- 2006-2009 | **Bachelor of Science**, Computer Science, minor in Mathematics  
Vancouver Island University (VIU), BC, Canada  
Graduated *magna cum laude* / with *distinction*  
Thesis: *Gray Code Generation of Ideals of Crown Posets in CAT*

## WORK EXPERIENCE

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- 2014 & 2016 | **Course Instructor**, 3rd year Computer Science  
University of Toronto, Canada  
CSC 373: *Algorithm Design, Analysis & Complexity*, 100+ students  
*Duties included:* Curriculum Design (lectures, assignments, exams). Organizing TAs. Holding Office Hours. Grading.
- 2009 - 2012 | **Software Engineer**, NISA  
Nanaimo, BC, Canada  
*Duties included:* Building customized software solutions for clients.  
Sole developer for NISA's biggest projects: [CanadianNanny.ca](http://CanadianNanny.ca)
- 2008 | **Java Developer**, Summer Co-op Internship, Pelican Software  
Nanaimo, BC, Canada  
*Duties included:* Implementing software components to tubular management inventory systems for businesses in the Oil and Gas industry.

## PUBLICATIONS

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- 2018 | **Graph Searches and Geometric Convexities in Graphs.**  
Feodor Dragan, Michel Habib, & Lalla Mouatadid  
ICGT.
- 2017 | **Maximum Induced Matching Algorithms via Vertex Ordering Characterizations.** Michel Habib & Lalla Mouatadid.  
ISAAC. Vol. 92, pp 43:1-43:12. LIPIcs.  
**Invited to the Special Issue - Algorithmica**  
Preliminary results presented at STOC 2017 - Poster Presentation.
- A New Graph Parameter to Measure Linearity.**  
Pierre Charbit, Michel Habib, Lalla Mouatadid, & Reza Naserasr.  
COCOA. pp 154-168. Springer. Journal version submitted to DAM.
- 2016 | **A Linear Time Algorithm to Compute a Max Weighted Independent Set on Cocomparability Graphs.** Ekkehard Köhler & Lalla Mouatadid.  
Information Processing Letters. Vol. 116, issue 6, pp 391-395.
- 2014 | **Linear Time LexDFS on Cocomparability Graphs.**  
Ekkehard Köhler & Lalla Mouatadid.  
SWAT. pp 319-330. Springer. Journal version submitted to Algorithmica

## UPCOMING WORK - Manuscripts available

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· **Approximating Modular Decomposition is Hard.**

Michel Habib, Lalla Mouatadid, & Mengchuan Zou.  
Submitted.

· **A Note on the De Bruijn-Erdős Theorem for Asteroidal-Triple Free Graphs.**

Lalla Mouatadid.  
Submitted to Discrete Mathematics.

· **The LexDFS Structure of Posets.**

Derek Corneil, Lalla Mouatadid, & Gara Pruesse.  
In Preparation.

· **Faster Simple Triangle Graphs Recognition.**

George Mertzios, Lalla Mouatadid, & Viktor Zamaraev  
In Preparation.

## SELECTED TALKS

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| 2017 | <b>Princeton University</b> , Princeton, U.S.A.<br>Graph Searches on Structured Families of Graphs   |
|      | <b>Shanghai Jiao Tong University</b> , Shanghai, China<br>Graph Searches on Structured Families of Graphs  |
|      | <b>Workshop on Graph Classes, Optimization, and Width Parameters (GROW)</b> , Toronto, Canada<br>Maximum Induced Matching on Cocomparability Graphs                              |
| 2016 | <b>Fourth Annual Heidelberg Laureate Forum</b> , Heidelberg, Germany<br>Graph Searches on Structured Families of Graphs - Poster.<br>Invited by Laureate Professor Stephen Cook. |
|      | <b>Search Games: Theory and Algorithms</b> , Leiden, The Netherlands<br>Graph Searches on Structured Families of Graphs.   |
| 2015 | <b>Workshop on Graph Classes, Optimization, and Width Parameters (GROW)</b> , Aussois, France<br>Path Graphs, Clique Trees, and Flowers.   |
|      | <b>University Paris Diderot, IRIF</b> , Paris, France<br>Path Graphs, Clique Trees, and Flowers.   |
|      | <b>Brandenburgische Technische Universität</b> , Cottbus, Germany<br>Path Graphs, Clique Trees, and Flowers.   |
| 2014 | <b>Southeastern International Conference on Combinatorics, Graph Theory, and Computing</b> , Boca Raton, U.S.A.<br>Linear Time LexDFS on Cocomparability Graphs.                 |

## RESEARCH VISITS

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| <i>Summer 2015</i> | <b>University Paris Diderot, IRIF</b><br>Paris, France             |
|                    | <b>Brandenburgische Technische Universität</b><br>Cottbus, Germany |

## AWARDS, HONORS, & FELLOWSHIPS

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2018	Alfred B. Lehman Graduate Scholarship.
2017-2018	Doctoral Completion Award.
2015-2018	NSERC Post Graduate Scholarship - Doctoral.
2012-2017	Graduate Student Fellowship, Computer Science, U of Toronto.
2014	ACM-Women full sponsorship for the Grace Hopper Conference.
2013	<b>First Prize:</b> Poster at the ACM Celebration of Women in Computing.
2009	Math Association of America sponsorship to present bachelor's thesis.
2007-2008	Vancouver Island University Academic Excellence Award. Ina Roelants Memorial Award. International Education Academic Excellence Scholarship. David Jones Scholarship for Leadership and Volunteer Work.

## TEACHING EXPERIENCE

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2013-2018	<b>Teaching Assistant</b> , U. of Toronto: <ul style="list-style-type: none"><li>· CSC 2404: Computability &amp; Logic. <b>Graduate course</b>, Prof. Steve Cook</li><li>· CSC 2420: Algorithm Design, Analysis, &amp; Theory. <b>Graduate course</b>, Prof. Allan Borodin</li><li>· CSC 473: Advanced Algorithm Design</li><li>· CSC 373: Algorithm Design, Analysis, &amp; Complexity</li><li>· CSC 263: Data Structures and Analysis</li><li>· CSC 236: Introduction to Theory of Computation</li><li>· CSC 165: Mathematical Expression &amp; Reasoning for Computer Science</li></ul>
2014, 2016	<b>Course Instructor</b> , U. of Toronto <ul style="list-style-type: none"><li>· CSC 373: Algorithm Design, Analysis, &amp; Complexity. <i>1<sup>st</sup></i> &amp; <i>2<sup>nd</sup></i> offering.</li></ul>

## PROFESSIONAL SERVICE

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2013-2018	<b>Reviewer:</b> <ul style="list-style-type: none"><li>· Journal of Graph Theory</li><li>· SIAM Discrete Mathematics</li><li>· Discrete Applied Mathematics</li><li>· Journal of Combinatorics</li><li>· Discrete Mathematics &amp; Theoretical Computer Science</li><li>· RAIRO - Operation Research</li><li>· Information Processing Letters</li><li>· International Workshop on Graph-Theoretic Concepts in Computer Science (WG)</li></ul>
2017	<b>Program Committee Member</b> - GROW 2017  <b>Girls in STEM Workshop</b> , U. of Toronto <ul style="list-style-type: none"><li>· Organized and ran a workshop for girls in grades 6 to 9.</li><li>· A collaboration with the U of T Math Department.</li></ul>
2016	<b>Lead Mentor</b> , Undergraduate Summer Research Program, U. of Toronto <ul style="list-style-type: none"><li>· Weekly meetings mentoring and guiding undergraduate students in their summer research projects.</li></ul>

## SKILLS

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- **Technical:** · C++ (preferred), C, MATLAB, Java, PHP, MySQL, JavaScript, jQuery.
- **Languages:** · Fluent in speaking, reading, and writing in French & English.