

# Caroline Lemieux

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## Education

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**B.Sc., University of British Columbia** 2012–Present (Expected 2016)

Major in Combined Honours Computer Science and Mathematics

Participant in program analysis reading group

Took graduate level programming languages course

Science One Class of 2013 (rigorous multi-disciplinary first year science program)

## Publications

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- [1] [pdf](#) Caroline Lemieux, Dennis Park, Ivan Beschastnikh. *General LTL Specification Mining*. In Proceedings of the 30<sup>th</sup> International Conference on Automated Software Engineering (ASE), November 2015. (Main Technical Track)
- [2] [pdf](#) Caroline Lemieux, Ivan Beschastnikh. *Investigating Program Behavior Using the Texada LTL Specifications Miner*. In Proceedings of the 30<sup>th</sup> International Conference on Automated Software Engineering (ASE), November 2015. (Tool Demonstration Track)
- [3] [pdf](#) Caroline Lemieux. *Mining Temporal Properties of Data Invariants*. In Proceedings of the 37<sup>th</sup> International Conference on Software Engineering (ICSE), May 2015. (ACM SRC Research Abstract; **won 1<sup>st</sup> place in Undergraduate Category**)

## Awards and Scholarships

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### International

1 <sup>st</sup> Place Undergraduate, ACM Student Research Competition at ICSE 2015	2015
Honorable Mention, CRA Outstanding Undergraduate Researcher Award	2015

### National

NSERC Undergraduate Student Research Award (supervisor: Ivan Beschastnikh)	2015
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### Institutional

Computer Science Scholarship	2015
Shirley Snelgrove and John Yule Scholarship	2015
Trek Excellence Scholarship for Continuing Studies	2015
Reginald Palliser-Wilson Scholarship	2015
Daniel Buchanan Scholarship in Mathematics (highest standing in Honours Math)	2015
Maureta Evelyn McDonald memorial Scholarship	2014
Reginald Palliser-Wilson Scholarship	2014
Trek Excellence Scholarship for Continuing Studies	2014
Charles and Jane Banks Scholarship	2013
Trek Excellence Scholarship for Continuing Studies	2013
Janus J Klawe Memorial Science One Scholarship	2012
Chancellor's Scholar Award	2012

## Experience

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### Research Assistant (USRA)

2014, 2015

Worked with Ivan Beschastnikh at UBC. Developed the general Linear Temporal Logic (LTL) specification mining tool Texada and the data-temporal property mining tool Quarry. Built all of Texada's mining algorithms – 3 distinct ones for 3 distinct trace formats. Tested and created a command-line interface for Texada and worked on the browser-based demo. Ran experiments to evaluate Texada's performance, whether Texada could mine relevant use patterns, and whether Texada could confirm properties of known systems. Wrote the bulk of the formal details, design, and evaluation sections of the main technical track paper [1] and nearly all the first draft of the tool demonstration paper [2]. Evaluated Quarry, which builds on Texada but mines temporal relationships between Daikon data invariants. Extended Texada to support more complex semantics required for checking data invariants. Wrote SRC abstract [3] on Quarry.

### Research Assistant (Volunteer)

2014

Worked with Ivan Beschastnikh at UBC. Expanded functionality of the InvariMint tool implementation to allow for more flexibility in algorithm specification. Refactored existing mining algorithms to allow user to specify individual Synoptic property types or kTails on the command line (previously, Synoptic property types were bundled together and could not be used jointly with kTails).

### Undergraduate Academic Assistant

2013-2014

Worked with Gregor Kiczales at UBC. Video lecture editor and online teaching assistant (participated in student forums, developed peer-graded problems) for the Coursera offerings of Introduction to Systematic Program Design. Edited extra video lectures which were used as supplementary material in CPSC 110.

### Undergraduate Teaching Assistant

2013

In-class teaching assistant for CPSC 110 (UBC's introductory computer science course) taught by Meghan Allen. As in-class TA, helped students with in-class problems and monitored class for laptop policy violations. Also invigilated and graded mid-term exams.

## Software

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### Texada

Tool for inferring LTL program specifications from traces of system behavior.

Code: <https://bitbucket.org/bestchai/texada/>

Demo: <http://bestchai.bitbucket.org/texada/>

## Computer Skills

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**Experienced:** Java, C++, HtDP Teaching Languages,  $\LaTeX$

**Intermediate:** C, Python

**Basic:** Racket, JavaScript

## Languages

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French (Fluent), English (Fluent), Spanish (Basic)