Caroline Lemieux

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Education

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

[1] pdf — Caroline Lemieux, Dennis Park, Ivan Beschastnikh. *General LTL Specification Mining.* In Proceedings of the 30th 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 30th 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 37th International Conference on Software Engineering (ICSE), May 2015. (ACM SRC Research Abstract; **won 1st place in Undergraduate Category**)

Awards and Scholarships

International

1st 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**
NSERC Undergraduate Student Research Award (supervisor: Ivan Beschastnikh)	**2014**

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

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 dool 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

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

Experienced: Java, C++, HtDP Teaching Languages, LaTeX
Intermediate: C, Python
Basic: Racket, JavaScript

Languages

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