

# Jan Gorzny

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CONTACT INFORMATION	Department of Mathematics & Statistics University of Victoria David Turpin Building, Room A418c 3800 Finnerty Road (Ring Road) Victoria, BC V8P 5C2, Canada	<i>Mobile:</i> +1-647-393-9877 <i>E-mail:</i> jgorzny@uvic.ca <i>WWW:</i> www.crypticcode.ca/jan.gorzny/
CITIZENSHIP	Canadian	
RESEARCH INTERESTS	Graph theory and discrete mathematics; model driven software engineering and formal methods.	
EDUCATION	<b>University of Victoria</b> , Victoria, British Columbia, Canada M.Sc., Department of Mathematics and Statistics, September 2013 - present <ul style="list-style-type: none"><li>• Adviser: Jing Huang</li><li>• Area of Study: Graph theory</li></ul> <b>University of Toronto</b> , Toronto, Ontario, Canada M.Sc., Department of Computer Science, Completed January 2013 <ul style="list-style-type: none"><li>• Adviser: Marsha Chechik</li><li>• Area of Study: Model driven software engineering</li></ul> <b>University of Waterloo</b> , Waterloo, Ontario, Canada B.Math., Joint honours Combinatorics & Optimization, Computer Science, Completed April 2011	
JOURNAL PUBLICATIONS	[J2] C. van Bommel and J. Gorzny, “Exact values for the $\varepsilon$ -ascent chromatic index of complete graphs,” <i>The Journal of Combinatorial Mathematics and Combinatorial Computing</i> , 2014, to appear. [J1] R. Salay, M. Chechik, M. Famelis, and J. Gorzny, “Verification of uncertainty reducing model transformations,” <i>The Journal of Object Technology</i> , 2014, to appear.	
CONFERENCE PUBLICATIONS	[C4] R. Salay, J. Gorzny, and M. Chechik, “Change propagation due to uncertainty change,” in <i>Fundamental Approaches to Software Engineering - 16th International Conference, FASE 2013, Held as Part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2013, Rome, Italy, March 16-24, 2013. Proceedings</i> , 2013, pp. 21–36. [C3] D. Dietrich, P. Shaker, J. M. Atlee, D. Rayside, and J. Gorzny, “Feature interaction analysis of the feature-oriented requirements-modelling language using alloy,” in <i>Proceedings of the Workshop on Model-Driven Engineering, Verification and Validation</i> , ser. MoDeVVa ’12, Innsbruck, Austria: ACM, 2012, pp. 17–22, ISBN: 978-1-4503-1801-3. DOI: 10.1145/2427376.2427380. [C2] P. Saadatpanah, M. Famelis, J. Gorzny, N. Robinson, M. Chechik, and R. Salay, “Comparing the effectiveness of reasoning formalisms for partial models,” in <i>Proceedings of the Workshop on Model-Driven Engineering, Verification and Validation</i> , ser. MoDeVVa ’12, Innsbruck, Austria: ACM, 2012, pp. 41–46, ISBN: 978-1-4503-1801-3. DOI: 10.1145/2427376.2427384.	

- [C1] R. Salay, M. Chechik, and J. Gorzny, “Towards a methodology for verifying partial model refinements,” in *2012 IEEE Fifth International Conference on Software Testing, Verification and Validation, Montreal, QC, Canada, April 17-21, 2012*, 2012, pp. 938–945.

TECHNICAL  
REPORTS

- [TR1] D. Dietrich, P. Shaker, J. Gorzny, J. Atlee, and D. Rayside, “Translating the feature-oriented requirements modelling language to alloy,” University of Waterloo, Waterloo, ON, Tech. Rep. CS-2012-12, 2012.

PRESENTED  
POSTERS

- [P3] M. Famelis, J. Gorzny, P. SaadatPanah, M. Chechik, and R. Salay, *Uncertainty management with partial models*, Poster presented at the University of Toronto Department of Computer Science Research In Action Showcase. Mar. 26; University of Toronto, Toronto, Ontario, Canada, 2012.
- [P2] J. M. Atlee, P. Shaker, and J. Gorzny, *Feature-oriented modelling and analysis*, Presented at the Technology Showcase at CASCON 2011. Nov. 7-10; Markham, Ontario, Canada, 2011.
- [P1] J. Gorzny, F. Torshizi, and M. Chechik, *Jscope: simple concurrency for java*, Presented at the University of Toronto Department of Computer Science Summer Research Poster Session. Aug. 23; Toronto, Ontario, Canada, 2010.

RESEARCH  
APPOINTMENTS**Research Engineer**

May 2014-Aug 2014

Skeptik supported by Google Summer of Code

- Skeptik is a tool for compressing proofs generated by automated theorem provers. For this project, I was responsible for extending two proof compression algorithms to work with first-order logic proofs. The project involved generalizing the algorithms and proving their correctness, as well as implementing and running empirical evaluations on the algorithms to test their effectiveness in practice.
  - Supervisor: Bruno Woltzenlogel Paleo

**Research Engineer**

May 2013-Sept 2013

Java Pathfinder &amp; PRISM Model Checker supported by Google Summer of Code

- Java Pathfinder (JPF) is a Java-based deterministic model checker developed by NASA that can easily check properties on arbitrary Java programs; PRISM is a symbolic probabilistic model checker that requires models of systems to be checked. An interface established between JPF and PRISM so that JPF can exhaustively find all the system states of the Java System-Under-Test (SUT) and build a corresponding model in PRISM execution states. With this extension to JPF, in addition to the usual capabilities of JPF, such as asking “can SUT state  $x$  be reached?” users can also ask questions such as “what is the probability of reaching state  $x$ ?”
  - Supervisors: David Parker, Neha Rungta, and Franco Raimondi

**Research Assistant**

May 2011-Sept 2011

School of Computer Science, University of Waterloo

- Created a translator from FORML, a requirements engineering language in development at the University of Waterloo, to Alloy, a first order logic language for SAT problems. The translator automatically added properties to check in order to detect feature interactions in models; this required the identification of potential feature interactions in FORML models.
  - Supervisor: Joanne M. Atlee

**Undergraduate Research Assistant** September 2009-Dec 2010  
School of Computer Science, University of Waterloo

- Continued the development of a simulator for the model checking language SMV. In particular, implemented non-deterministic choice for initialization of variables, a trace of the variables during execution, the allowance of constraints on model variables, as well fixing existing code to ensure the simulator behaved as desired.
  - Supervisor: Nancy A. Day

**Summer Research Student (NSERC-USRA)** May 2010-Aug 2010  
Department of Computer Science, University of Toronto

- Continued the development of an Eclipse plug-in for translation of JSCOOP, a simple concurrency extension to Java to runnable Java, extending the plug-in to support additional features based on Java and the original SCOOP design. I developed a Java Pathfinder (JPF) listener to work with JSCOOP code in order to use JPF to verify JSCOOP programs.
  - Supervisor: Marsha Chechik

TEACHING  
EXPERIENCE

**University of Victoria**, Victoria, British Columbia, Canada

**Teaching Assistant: Calculus I**  
Sept 2014-Present, May 2014-Aug 2014

**Marker: Graph Algorithms**  
Sept 2014-Present

**Math & Stat Assistance Center Tutor**  
Sept 2014-Present, Jan 2014-Apr 2014

**Marker: Calculus for Social & Biological Sciences**  
Jan 2014-Apr 2014

**Marker: Matrix Algebra for Engineers**  
Sept 2013-Dec 2013

**University of Toronto**, Toronto, Ontario, Canada

**Teaching Assistant: Principles of Programming Languages**  
Jan 2013-Apr 2013

**Teaching Assistant: Software Engineering I**  
Sept 2012-Dec 2012

**Teaching Assistant: Computers and Society**  
Jan 2012-Apr 2012

**Teaching Assistant: Introduction to Software Engineering**  
Sept 2011-Dec 2011

**University of Toronto Mississauga**, Mississauga, Ontario, Canada

**Teaching Assistant: Introduction to Software Engineering**  
Jan 2013-Apr 2013, Jan 2012-Apr 2012

**University of Toronto Scarborough**, Scarborough, Ontario, Canada

**Teaching Assistant: Design & Analysis of Data Structures**  
Jan 2013-Apr 2013

**Teaching Assistant: Linear Algebra I**

Jan 2013-Apr 2013

**Teaching Assistant: Programming Languages**

Jan 2012-Apr 2012

**University of Waterloo**, Waterloo, Ontario, Canada

**Undergraduate Teaching Assistant: Linear Algebra I (Honours)**

Jan 2010-Apr 2010

AWARDS

National Sciences and Engineering Research Council of Canada

- Undergraduate Student Research Award, \$4500, 2010

University of Waterloo

- Merit Scholarship, \$1000, 2007

PROFESSIONAL  
MEMBERSHIPS

American Mathematical Society (AMS), Member, 2014-present

Association For Computing Machinery (ACM), Student Member, 2013-present

Institute of Electrical and Electronics Engineers (IEEE), Graduate Student Member, 2012-present

Society for Industrial and Applied Mathematics (SIAM), Student Member, 2010-present

VOLUNTEER  
SERVICE

University of Waterloo

- Mathematics Society First Year Student Mentor, September 2010 - April 2011
- Mathematics Faculty Tie Guard, September 2010
- Mathematics Faculty Orientation Leader, September 2009

PROFESSIONAL  
DEVELOPMENT

- Participant, University of Victoria Teaching Assistant Conference, September 3-6, 2013, Victoria, BC.
- Participant, Second Summer School on Formal Techniques, May 27-June 1, 2012, Menlo College, Atherton, CA.
- Participant, University of Victoria Math Teaching Workshop, January 14-March 18, 2014, Victoria, BC.
- Participant in on-line courses:
  - Introduction to Mathematical Philosophy, Summer 2014
  - Functional Programming Principles in Scala, Summer 2014

SOFTWARE  
SKILLS

Computer Programming:

- C, C++, Java, Scala, SML, TXL, MATLAB, Maple

Modelling Languages:

- Alloy, UML

Version Control:

- CVS, SVN, GitHub

Productivity Applications:

- L<sup>A</sup>T<sub>E</sub>X, Emacs, Eclipse, Microsoft Office

Operating Systems:

- Microsoft Windows family, Linux (Ubuntu)