Paul Vrbik · The University of Western Ontario · London Ontario Canada

Education

1. Ph.D. Computer Science, University of Western Ontario, 2013 (Expected)
2. M.Sc. Pure Mathematics, Simon Fraser University, 2008
3. B.Sc. Pure Mathematics, McMaster University, 2006.

Contributions to research and development

i. Books

1. Jan Vrbik and **Paul Vrbik**. (2012) Informal Introduction to Stochastic Processes with Maple. ISBN-10: 1461440564. ISBN-13: 978-1461440567. Springer

ii. Articles published or accepted in refereed journals

1. Braden Coles, **Paul Vrbik**, Robert D. Giacometti, and Stuart M. Rothstein. (2008) Gamma Distribution Model To Provide a Direct Assessment of the Overall Quality of Quantum Monte Carlo-Generated Electron Distributions. J. Phys. Chem. A, 2008, 112 (10), pp 2012-2017.

iii. Other refereed contributions

1. Marc Moreno Maza, Éric Schost, **Paul Vrbik***. (2012) Inversion Modulo Zero-dimensional Regular Chains. Proceedings of the 14th International Workshop on Computer Algebra in Scientific Computing (CASC 2012. Maribor, Slovenia). 198-210. Springer Verlag.
2. Steffen Marcus, Marc Moreno Maza, **Paul Vrbik**. (2012) On Fulton's Algorithm for Computing Intersection Multiplicities. Proceedings of the 14th International Workshop on Computer Algebra in Scientific Computing (CASC 2012. Maribor, Slovenia). 224-235. Springer Verlag.
3. Michael Monagan, **Paul Vrbik***. (2009) Lazy and Forgetful Polynomial Arithmetic and Applications. Proceedings of the 11th International Workshop on Computer Algebra in Scientific Computing (CASC 2009. Kobe, Japan). 226-239. Springer Verlag. (MSc work).
4. B. Coles, I. Bosa, **P. Vrbik**, and R. M. Rothstein*. (2005) Analysis of diffusion Monte Carlo distributions. (Pacifichem 2005. USA, Honolulu). Invited paper. American Institute of Physics.

iv. Non-refereed contributions

1. Marc Moreno Maza, **Paul Vrbik***. (2012) On Fulton's Algorithm for Computing Intersection Multiplicities. East Coast Computer Algebra Day (ECCAD 2012. Rochester, MI).
2. Marc Moreno Maza, **Paul Vrbik***. (2011) Inverting Matrices Modulo Regular Chains. Poster presented at ISSAC 2011 (San Jose, CA).
3. Greg Reid, **Paul Vrbik***. (2009) Visualization of Homotopy's and their Properties. Poster presented at East Coast Computer Algebra Day 2009 (Kingston, RI).
4. Michael Coons*, **Paul Vrbik**. (2007) On the density of integers bi-representable as the sum of two cubes. Poster presented at CMS-MITACS Joint Conference (Winnepeg, MB).
5. **P. Vrbik**, S. Jahed. (2006) Verifying Baklava. Undergraduate Thesis (McMaster University).
6. **Paul Vrbik***, Stuart M. Rothstein. (2005) Determining α-polarizability of hydrogen molecule using Quantum Monte Carlo. Poster presented at Mercury conference on computational chemistry (Clinton, NY).

v. Technology Transfers

1. **Paul Vrbik***. (2006) A generalized algorithm for Quantum Monte Carlo on arbitrary molecules. Software written for the Theoretical Chemistry Lab at Brock University.

Relevant activities

i. Oral Presentations

1. UWORCS. (2011) Inverting Matrices Modulo 0-Dim Regular Chains.
2. SFU Computer Algebra Group Meeting. (2011) Regular Chains: Theory and Computation.
3. SFU Computer Algebra Group Meeting. (2010) The Truncated Fourier Transform.
4. CASC. (2009) Lazy and Forgetful Polynomial Arithmetic and Applications
5. CASC. (2009) Code Generation for Polynomial Multiplication (presented for original authors)
6. UWORCS. (2009) Lazy and Forgetful Polynomial Arithmetic and Applications
7. Western Research Forum. (2009) Integer Representation of Multivariate Polynomials
8. SFU Computer Algebra Group Meeting. (2009) Visualization of Homotopy's and their Properties.
9. SFU Mathematics Graduate Seminar. (2007) Knot Invariants.
10. SFU Mathematics Graduate Seminar. (2007) Solving Sets of Recurrence Equations.

ii. Teaching

1. Teaching Assistant, Computer Science, University of Western Ontario, 2009-present.
2. Teaching Assistant, Mathematics, Simon Fraser Univerity, 2006-2007.
3. Teaching Assistant, Computer Science, McMaster University, 2004-2006. *In addition to my regular TA duties I wrote lab handouts and courseware that are still being used.*
4. Student Director of High School Outreach, McMaster University, 2004-2005. *I ran an outreach program to teach "gifted" high school students mathematics.*

iii. Committees

1. Math representative to the Graduate Issues Committee, Simon Fraser University, 2007.
2. Mathematics and Statistics representative to the Ad Hoc Science Curriculum Review Committee (SCRC), McMaster University, 2006. *The mandate of the SCRC was to examine the nature and delivery of the undergraduate curriculum in Science, and to make recommendations to the Dean and to the departments and programs of the Faculty of Science.*

iv. Elected Positions

1. Members Services Officer, Math Grad Student Union, Simon Fraser University, 2007.
2. President, Math Student Union, Simon Fraser University, 2006.
3. President, Math and Stats Society, McMaster University, 2003, 2004, 2005.

Honours and Awards

i. Scholarships

1. Alexander Graham Bell Canada Graduate Scholarships, Doctorate. $105,000. (2010).
2. Graduate Fellowship. Simon Fraser University. $6,250. (2008).
3. MITACS Industrial Scholarship. $15,000. (2008).
4. McMaster Entrance Scholarship. $4,000. (2002).

ii. Conference Distinctions

1. UWORCS, best talk in session. (2011).
2. UWORCS, best talk in session. (2009).
3. CECM Days, second place poster prize. (2008).

iii. Nominations

1. For USC Teaching Award by students. CS3331A Foundations of Computer Science (2013). *This award is given for execellence in instruction.*
2. For best TA by Dr. Charles Ling at UWO, CS1011 Applied Logic. (2011).
3. For best TA by Dr. Marc Moreno Maza at UWO, CS1026 Introduction to Programming. (2010).
4. For McMaster President's Award by the department of Mathematics at McMaster University. (2006). *This award is considered the schools highest honour in student leadership.*