Paul Vrbik · The University of Newcastle · Newcastle, New South Whales, Australia

Education

1. Ph.D. Computer Science, University of Western Ontario, 2014.
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. Michael Coons, **Paul Vrbik**. (2012) An Irrationality Measure for Regular Paperfolding Numbers. Journal of Integer Sequences. Volume 14. Issue 2.
2. 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. Refereed conference proceedings

1. Parisa Alvandi, Changbo Chen, Steffen Marcus, Marc Moreno Maza, Éric Schost, **Paul Vrbik**. (2014) Doing Algebraic Geometry with the RegularChains Library. Mathematical Software (ICMS 2014). Lecture Notes in Computer Science. Springer Berlin Heidelberg.
2. 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.
3. 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.
4. 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).
5. 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. Poster presented at 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***. (2012) Algebraic Geometry Tools (regular chains sub-library). Software written for Maplesoft.
2. **Paul Vrbik***. (2006) A generalized algorithm for Quantum Monte Carlo on arbitrary molecules. Software written for the Theoretical Chemistry Lab at Brock University.

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. Distinctions

1. University Students Council, Teaching Honour Roll. (2012).
2. UWORCS, best talk in session. (2011).
3. UWORCS, best talk in session. (2009).
4. 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.*

Relevant activities

i. Teaching

1. Instructor, CS 3331 "Foundations of Computer Science", Fall 2012.
2. Teaching Assistant, Computer Science, University of Western Ontario, 2009-present.
3. Teaching Assistant, Mathematics, Simon Fraser Univerity, 2006-2007.
4. 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.*

5. Student Director of High School Outreach, McMaster University, 2004-2005. *I ran an outreach program to teach "gifted" high school students mathematics.*

ii. 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.*

iii. Peer Review

1. ISSAC 2013 (1), 2012 (1), 2010 (2).
2. CASC 2011 (2).

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.