

Vincent Russo

vincentrusso1@gmail.com | 734.707.7078
Waterloo, ON

LinkedIn: <https://ca.linkedin.com/in/vrusso11>
Github: <https://github.com/vprusso>
Webpage: <http://vprusso.github.io/>

EDUCATION	<ul style="list-style-type: none">◇ University of Waterloo Sep 2012 – Feb 2017 PhD, Computer Science◇ Wayne State University Sep 2010 – Aug 2011 MSc, Computer Science◇ Wayne State University Sep 2007 – Aug 2010 BSc, Computer Science
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EXPERIENCE	<ul style="list-style-type: none">◇ Graduate Researcher – University of Waterloo, Waterloo, ON Sep 2012 – Dec 2016 (anticipated)<ul style="list-style-type: none">– Contributor to <i>QETLAB</i>; a software package used to study theoretical aspects of quantum computing. Software has been cited in numerous scientific publications.– Published 10 papers in peer reviewed journals and open-sourced all software used in these papers.◇ Software Engineer, Intern – Raytheon BBN Technologies, Cambridge, MA May 2012 – Sep 2012<ul style="list-style-type: none">– Contributed to the development of <i>QuaFL</i>; a statically typed domain specific language to study quantum computing using Python.– Coordinated management of software projects between three teams in different countries.◇ Research Assistant – Wayne State University, Detroit, MI Nov 2010 – Jan 2012<ul style="list-style-type: none">– Contributed to development of <i>GOMC</i>; a GPU-driven open-source Monte Carlo simulation engine written in C++ that uses the CUDA library. Our software yields a 29 times faster implementation than an optimized serial CPU-driven code.◇ Software Engineer – Wayne State University, Detroit, MI Nov 2010 – Nov 2011<ul style="list-style-type: none">– Developed a web client in PHP and Python to interface with mobile devices that tracked and stored data from several hundred patients in a MySQL database. Software has been cited in peer-reviewed work.◇ Software Engineer, Intern – University of Michigan, Ann Arbor, MI May 2010 – Sep 2010<ul style="list-style-type: none">– Processed several hundred gigabytes of data sent back from spacecraft. Used IDL, C++, and Python to perform analysis and data visualization for internal reports.– Solved an issue unresolved by NASA engineers by analyzing anomalous data sent back from spacecraft. Presented an oral and written report of work to department.
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TECHNICAL SKILLS	<ul style="list-style-type: none">◇ Languages: Python, C/C++, Matlab, Java, MySQL, PHP, R, JavaScript*, Haskell* (*some experience)◇ Tools: NumPy, SciPy, Scikit-Learn, Pandas, Matplotlib, Regex, L^AT_EX, Django, bash, git
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INDEPENDENT PROJECTS	<ul style="list-style-type: none">◇ Developed Android applications in Java totalling over 1,500 downloads from the Google Playstore.◇ Contributed code for symbolic manipulation of quantum mechanical operators to SymPy.◇ Built an Android application for a NASA sponsored event that uses machine learning and visual recognition tools to study climate change.◇ Host and write my own blog using Jekyll. Posts on programming and machine learning.◇ Developed various software projects as a freelance developer.
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ADDITIONAL EXPERIENCE	<ul style="list-style-type: none">◇ Machine Learning Foundations – certificate earned - (Coursera E-learning).◇ Stanford: Statistical Learning – with distinction - (Stanford Online).◇ Intro to Machine Learning and Intro to Data Science – audit - (Udacity E-learning).◇ Served as teaching assistant for courses based on Algorithms and Data Structures, Discrete Mathematics and Python Programming.
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AWARDS	<ul style="list-style-type: none">◇ Recipient of David R. Cheriton Graduate Scholarship in computer science (Award amount: \$10,000).◇ Recipient of the National Science Foundation's IT Communities of Practice Award in computer science.
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- PUBLICATIONS
- ◇ “Extended nonlocal games and monogamy-of-entanglement games”, *Proceedings of the Royal Society A: Mathematical, Physical, and Engineering Sciences*, 472:20160003, Nathaniel Johnston, Rajat Mittal, Vincent Russo, John Watrous, (2016).
 - ◇ “Limitations of separable measurements from cone programming”, *IEEE Transactions on Information Theory*, (Volume:61, Issue:6), Somshubhro Bandypadhyay, Alessandro Cosentino, Nathaniel Johnston, Vincent Russo, John Watrous, Nengkun Yu, (2015).
 - ◇ “Is absolute separability determined by the partial transpose?”, *Quantum Information & Computation*, 15(7&8):0694-0720, Srinivasan Arunachalam, Nathaniel Johnston, Vincent Russo, (2015).
 - ◇ “An algorithm for the T-count”, *Quantum Information & Computation*, Volume 14 Issue 15-16, Pages 1261-1276, David Gosset, Vadym Kliuchnikov, Michele Mosca, Vincent Russo, (2014).
 - ◇ “Small sets of locally indistinguishable orthogonal maximally entangled states”, *Quantum Information & Computation*, Volume 14 Issue 13-14, Pages 1098-1106, Alessandro Cosentino, Vincent Russo, (2014).
 - ◇ “Quantum hedging in two-round prover-verifier interactions”, *arXiv preprint:1310.7954*, Srinivasan Arunachalam, Abel Molina, Vincent Russo, (2013).
 - ◇ “GPU-accelerated Gibbs ensemble Monte Carlo simulations of Lennard-Jonesium”, *Computer Physics Communications*, Volume 184, Issue 12, Pages 2662-2669, Jason Mick, Eyad Hailat, Vincent Russo, Kamel Rushaidat, Loren Schwiebert, Jeffrey Potoff, (2013).
 - ◇ “Parallel Monte Carlo simulation for the canonical ensemble on the GPU”, Volume 29, Issue 4, *Journal of Parallel and Distributed Computing*, Eyad Hailat, Jason Mick, Vincent Russo, Kamel Rushaidat, Loren Schwiebert, Jeffrey Potoff, (2012).
 - ◇ “Beatty sequences, Fibonacci sequences, and the Golden Ratio”, *Fibonacci Quarterly*, Volume 49, Pages 151-154, Vincent Russo, Loren Schwiebert, (2011).
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- PROCEEDINGS
- ◇ “GPU for Lennard-Jones and Gibbs ensemble Monte Carlo particle simulations”, *GPU Technology Conference (GTC)*, Jason Mick, Jeffrey Potoff, Eyad Hailat, Vincent Russo, Loren Schwiebert, (2012).
 - ◇ “GPU accelerated configurational bias Monte Carlo simulations of linear alkanes”, Jason Mick, Jeffrey Potoff, Eyad Hailat, Vincent Russo, Kamel Rushaidat, Loren Schwiebert, *American Institute of Chemical Engineers (AIChE)*, (2012).
 - ◇ “Optimization of a Lennard-Jones particle Monte Carlo GPU-code”, Jason Mick, Jeffrey Potoff, Eyad Hailat, Vincent Russo, Kamel Rushaidat, Loren Schwiebert, *American Institute of Chemical Engineers (AIChE)*, (2012).
 - ◇ “GPU MCMC developments: CBMC nonpolar molecules, verlet lists, and architectural optimizations”, Jason Mick, Jeffrey Potoff, Eyad Hailat, Vincent Russo, Kamel Rushaidat, Loren Schwiebert, *American Institute of Chemical Engineers (AIChE)*, (2012).
 - ◇ “GPU accelerated Monte Carlo simulations in the Gibbs and canonical ensembles”, *American Institute of Chemical Engineers (AIChE)*, Jason Mick, Jeffrey Potoff, Eyad Hailat, Vincent Russo, Loren Schwiebert, (2011).
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- PRESENTATIONS
- ◇ “Extended nonlocal from quantum-classical games”, *University of Waterloo, Institute for Quantum Computing seminar*, (2016).
 - ◇ “Extended nonlocal games and monogamy-of-entanglement games”, *Quantum Information Processing (QIP)*, (2015).
 - ◇ “Limitations of separable measurements from cone programming”, *Quantum Information Processing (QIP)*, (2014).
 - ◇ “Quantum hedging in two-round prover-verifier interactions”, *Quantum Information Processing (QIP)*, (2013).
 - ◇ “Small sets of locally indistinguishable orthogonal maximally entangled states”, *Quantum Information Processing (QIP)*, (2013).
 - ◇ “An algorithm for the T-count”, *Quantum Information Processing (QIP)*, (2013).
 - ◇ “GPU MCMC developments: CBMC nonpolar molecules, verlet lists, and architectural optimizations”, *American Institute of Chemical Engineering (AIChE)*, (2012).
 - ◇ “GPU-based Monte Carlo simulations for canonical and Gibbs ensembles”, *NVIDIA, GTC*, (2012).