

# Vincent Russo

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United States: Citizen  
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Github: <https://github.com/vprusso>  
Webpage: <http://vprusso.github.io/>

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EDUCATION

- ◇ **University of Waterloo** Sep 2012 – Feb 2017  
Ph.D., Computer Science
- ◇ **Wayne State University** Sep 2010 – Aug 2011  
M.Sc., Computer Science
- ◇ **Wayne State University** Sep 2007 – Aug 2010  
B.Sc., Computer Science

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EXPERIENCE

- ◇ **Security Quality Assurance Developer – ISARA**, Waterloo, ON May 2017 – Present  
– Developed correctness testing suite for internally produced cryptographic protocols.
- ◇ **Graduate Researcher – University of Waterloo**, Waterloo, ON Sep 2012 – Feb 2017  
– Contributor to *QETLAB*; a software package used to study theoretical aspects of quantum computing. Software has been cited in numerous scientific publications.
- ◇ **Data Engineer, Consultant – SkyWatch**, Kitchener, ON Sep 2016 – Oct 2016  
– Developed back-end data acquisition and processing service using Python, MySQL, and AWS resulting in an API service.
- ◇ **Software Engineer, Intern – Raytheon BBN Technologies**, Cambridge, MA May 2012 – Sep 2012  
– Contributed to the development of *QuaFL*; a statically typed domain specific language to study quantum computing using Python.
- ◇ **Research Assistant – Wayne State University**, Detroit, MI Nov 2010 – Jan 2012  
– Contributed to development of *GOMC*; 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  
– 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  
– 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

- ◇ **Languages:** Python, C/C++, Matlab, Java, MySQL, PHP, R, JavaScript\*, Haskell\* (\*some experience)
- ◇ **Tools:** NumPy, SciPy, Scikit-Learn, Pandas, Matplotlib, Regex, L<sup>A</sup>T<sub>E</sub>X, Django, bash, git

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INDEPENDENT PROJECTS

- ◇ Developed Android applications in Java totalling over 3,000 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.

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ADDITIONAL EXPERIENCE

- ◇ 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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- PUBLICATIONS
- ◇ “*Extended nonlocal games and quantum-classical games*”,  
V. Russo, J. Watrous,  
arXiv preprint:1709.01837, (2017).
  - ◇ “*Quantum hedging in two-round prover-verifier interactions*”,  
S. Arunachalam, A. Molina, V. Russo,  
Theory of Quantum Computation, Communication and Cryptography (TQC), (2017).
  - ◇ “*Extended nonlocal games and monogamy-of-entanglement games*”,  
N. Johnston, R. Mittal, V. Russo, J. Watrous,  
Proceedings of the Royal Society A, Volume: 472 Issue 2189, (2016).
  - ◇ “*Limitations on separable measurements from cone programming*”,  
S. Bandyopadhyay, A. Cosentino, N. Johnston, V. Russo, J. Watrous,  
IEEE Transactions on Information Theory, (Volume:61, Issue 6), (2015).
  - ◇ “*Is absolute separability determined by the partial transpose?*”,  
S. Arunachalam, N. Johnston, V. Russo,  
Quantum Information & Computation, 15(7& 8):0694-0720, (2015).
  - ◇ “*An algorithm for the T-count*”,  
D. Gosset, V. Kliuchnikov, M. Mosca, V. Russo,  
Quantum Information & Computation, Volume 14 Issue 15-16, Pages 1261-1276, (2014).
  - ◇ “*Small sets of locally indistinguishable orthogonal maximally entangled states*”,  
A. Cosentino, V. Russo,  
Quantum Information & Computation, Volume 14 Issue 13-14, Pages 1098-1106, (2014).
  - ◇ “*GPU-accelerated Gibbs ensemble Monte Carlo simulations of Lennard-Jonesium*”,  
J. Mick, E. Hailat, V. Russo, K. Rushaidat, L. Schwiebert, J. Potoff,  
Computer Physics Communications, (2013).
  - ◇ “*Parallel Monte Carlo simulation for the canonical ensemble on the GPU*”,  
E. Hailat, J. Mick, V. Russo, K. Rushaidat, L. Schwiebert, J. Potoff,  
Journal of Parallel and Distributed Computing, (2012).
  - ◇ “*Beatty sequences, Fibonacci sequences, and the Golden ration*”,  
V. Russo, L. Schwiebert,  
Fibonacci Quarterly 49, 151-154 (2011).
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- PROCEEDINGS
- ◇ “*GPU MCMC developments: CBMC nonpolar molecules, verlet lists, and architectural optimizations*”,  
J. Mick, E. Hailat, V. Russo, K. Rushaidat, L. Schwiebert, J. Potoff,  
AIChE (American Institute of Chemical Engineers), (2012).
  - ◇ “*Optimization of a Lennard-Jones particle Monte Carlo GPU-code*”,  
J. Mick, E. Hailat, V. Russo, K. Rushaidat, L. Schwiebert, J. Potoff, AIChE (American Institute of Chemical Engineers), (2012).
  - ◇ “*GPU accelerated configurational bias Monte Carlo simulations of linear alkanes*”,  
J. Mick, E. Hailat, V. Russo, K. Rushaidat, L. Schwiebert, J. Potoff,  
AIChE (American Institute of Chemical Engineers), (2012).
  - ◇ “*GPU accelerated Monte Carlo simulations in the Gibbs and canonical ensembles*”,  
J. Mick, E. Hailat, V. Russo, K. Rushaidat, L. Schwiebert, J. Potoff,  
AIChE (American Institute of Chemical Engineers), (2011).
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- THESES
- ◇ “*Extended nonlocal games*”,  
V. Russo  
University of Waterloo, (2017).