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

- **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

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.

Technical Skills

- **Languages:** Python, C/C++, Matlab, Java, MySQL, PHP, R, JavaScript*, Haskell* (*some experience)
- **Tools:** NumPy, SciPy, Scikit-Learn, Pandas, Matplotlib, Regex, LaTeX, Django, bash, git

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.

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.

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. Bandypadhyay, 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).

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).

Theses

- *"Extended nonlocal games"*,
  V. Russo
  University of Waterloo, (2017).