



Joseph Scott

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Citizenship: USA

Location: Waterloo, Ontario

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Education

Current

Ph.D Computer Science

University of Waterloo

Supervisor: Vijay Ganesh

Topic: Synergies between automated reasoning and machine learning.

2017

Masters of Mathematics in Computer Science

University of Waterloo

2015

Bachelor of Computer Science

Bachelor of Mathematics

Ohio University

[Top Graduating Student of the Russ College of Engineering and Technology](#)

Publications

2020

[LGML: Logic Guided Machine Learning](#)

Joseph Scott, Maysum Panju, and Vijay Ganesh

Proceedings of the 34th AAAI Conference on Artificial Intelligence SA (AAAI)

Student Spotlight Presentation

1st Place AAAI Three Minute Thesis Contest

2020

[LogicGAN: Logic-guided Generative Adversarial Networks](#)

Laura Graves, Vineel Nagisetty, Joseph Scott, and Vijay Ganesh

Preprint

2020

[Discovering Symmetry Invariants and Conserved Quantities by Interpreting Siamese Neural Networks](#)

Sebastian J. Wetzel, Roger G. Melko, Joseph Scott, Maysum Panju, and Vijay Ganesh

Preprint

2020

[MachSMT: A Machine Learning-based Algorithm Selector for SMT Solvers](#)

Joseph Scott, Aina Niemetz, Mathias Preiner, and Vijay Ganesh

Preprint

2020

[BanditFuzz: Fuzzing SMT Solvers with Reinforcement Learning](#)

Joseph Scott, Federico Mora, and Vijay Ganesh

Preprint

2019

[An Algorithm Selection Approach for QF FP Solvers](#)

Joseph Scott, Pascal Poupart, and Vijay Ganesh

17th International Workshop on Satisfiability Modulo Theories (SMT)

2018 **Verifying Mutable Systems**

Joseph Scott
Masters Thesis

2017 **[A propagation rate based splitting heuristic for divide-and-conquer solvers](#)**

Saeed Nejati, Zack Newsham, Joseph Scott, Jia Hui Liang, Catherine Gebotys, Pascal Poupart, and Vijay Ganesh

International Conference on Theory and Applications of Satisfiability Testing (SAT)

2015 **[GreenColo: Incentivizing Tenants for Reducing Carbon Footprint in Colocation Data Centers](#)**

Mohammad A. Islam, Hasan Mahmud, Shaolei Ren, Xiaorui Wang, Haven Wang, and Joseph Scott

Technical Report

Awards

2020 [AAAI '20 Best Student Abstract Three Minute Thesis Presentation](#)

2020 Vector Institute Doctoral Research Grant

2019 50 Years of Complexity Theory: A Celebration of the Work of Stephen Cook – Travel Scholarship

2019 Amazon Web Service Research for Automated Reasoning Grant (with Vijay Ganesh et al)

2018 University of Waterloo International Doctoral Student Award

2017 University of Waterloo International Doctoral Student Award

2015 University of Waterloo International Masters Student Award

2015 University of Waterloo First Year Scholarship

2015 [Top Graduating Student of the Russ College of Engineering and Technology](#)

2015 Top Junior of Computer Science of the Russ College of Engineering and Technology

Experience

2016-Present Instructional Apprentice

2014-2015 Teaching Assistant

2016-Present Teaching Assistant

2015 NSF and Department of Defence Undergraduate Researcher
Supervised by [Avinash Kodi](#), [Shaolei Ren](#), and [Nikki Pissinou](#)

Service

2019 Waterloo Blockchain+Security Workshop

2019 Waterloo ML + Security + Verification Workshop – Student Volunteer

2014-15 Ohio University ACM Chapter President

2013-present ACM National Member