

List of Publications

February 2, 2023

Sidi Mohamed Beillahi

Postdoctoral Researcher
University of Toronto
Toronto, Canada
sm.beillahi@utoronto.ca

<https://beillahi.github.io>

Tel: (1) 438 921 7395

❖ Journal Publications

- J4 **LMPT: A Novel Authenticated Data Structure to Eliminate Storage Bottlenecks for High Performance Blockchains** 2022
Jemin Andrew Choi, **Sidi Mohamed Beillahi**, Srisht Fateh Singh, Panagiotis Michalopoulos, Peilun Li, Andreas Veneris, Fan Long
Under submission to IEEE Transactions on Network and Service Management
Invited special issue for best papers from ICBC 2022
- J3 **SigVM: Enabling Event-Driven Execution for Truly Decentralized Smart Contracts** Oct 2022
Zihan Zhao, **Sidi Mohamed Beillahi**, Ryan Song, Yuxi Cai, Andreas Veneris, Fan Long
Proceedings of the ACM on Programming Languages, 6(OOPSLA2), 149:673 – 149:698
- J2 **Robustness Against Transactional Causal Consistency** Feb 2021
Sidi Mohamed Beillahi, Ahmed Bouajjani, Constantin Enea
Logical Methods in Computer Science, 17(1): 12:1 – 12:42
Invited special issue for selected papers from CONCUR 2019
- J1 **A Modeling and Verification Framework for Optical Quantum Circuit** Mar 2019
Sidi Mohamed Beillahi, Mohamed Yousri Mahmoud, Sofène Tahar
Formal Aspects of Computing, 31(3): 321 – 351

❖ Conference Publications

- C14 **FlashSyn: Flash Loan Attack Synthesis via Counterexample-Driven Approximation** 2022
Zhiyang Chen, **Sidi Mohamed Beillahi**, Fan Long
under submission, <https://arxiv.org/abs/2206.10708>
- C13 **A Robust Front-Running Methodology for Malicious Flash-Loan DeFi Attacks** 2022
Xun Deng, Zihan Zhao, **Sidi Mohamed Beillahi**, Han Du, Cyrus Minwalla, Keerthi Nelaturu, Andreas Veneris, Fan Long
under submission, 2022
- C12 **Möbius: an Atomic State Sharding Design for Account-Based Blockchains** 2022
Srisht Fateh Singh, Panagiotis Michalopoulos, **Sidi Mohamed Beillahi**, Andreas Veneris, Fan Long
under submission, 2022
- C11 **LVMT: An Efficient Authenticated Storage for Blockchain** 2022
Chenxing Li, **Sidi Mohamed Beillahi**, Guang Yang, Ming Wu, Wei Xu, Fan Long
under submission, 2022
- C10 **Automated Synthesis of Asynchronizations** Dec 2022
Sidi Mohamed Beillahi, Ahmed Bouajjani, Constantin Enea, Shuvendu Lahiri
29th Static Analysis Symposium (SAS), 2022
- C9 **Automated Auditing of Price Gouging TOD Vulnerabilities in Smart Contracts** May 2022
Sidi Mohamed Beillahi, Eric Keilty, Keerthi Nelaturu, Andreas Veneris, Fan Long
In Proc. IEEE International Conference on Blockchain and Cryptocurrency (ICBC), 2022
- C8 **LMPTs: Eliminating Storage Bottlenecks for Processing Blockchain Transactions** May 2022
Jemin Andrew Choi, **Sidi Mohamed Beillahi**, Peilun Li, Andreas Veneris, Fan Long
In Proc. IEEE International Conference on Blockchain and Cryptocurrency (ICBC), 2022
IEEE ICBC Distinguished Paper Award.

- C7 **Smart Contracts Refinement for Gas Optimization** Sep 2021
Keerthi Nelaturu, **Sidi Mohamed Beillahi**, Fan Long, Andreas Veneris
In Proc. 3rd Conference on Blockchain Research & Applications for Innovative Networks and Services (BRAINS), 2021
- C6 **Checking Robustness Between Weak Transactional Consistency Models** Mar 2021
Sidi Mohamed Beillahi, Ahmed Bouajjani, Constantin Enea
In Proc. 30th European Symposium on Programming (ESOP), 2021
- C5 **Behavioral Simulation for Smart Contracts** Jun 2020
Sidi Mohamed Beillahi, Gabriela Ciocarlie, Michael Emmi, Constantin Enea
In Proc. 41st annual ACM SIGPLAN conference on Programming Language Design and Implementation (PLDI), 2020
- C4 **Robustness Against Transactional Causal Consistency** Sep 2019
Sidi Mohamed Beillahi, Ahmed Bouajjani, Constantin Enea
In Proc. 30th International Conference on Concurrency Theory (CONCUR), 2019
Invited to a Journal Special Issue for Selected CONCUR 2019 Papers.
- C3 **Checking Robustness Against Snapshot Isolation** Jul 2019
Sidi Mohamed Beillahi, Ahmed Bouajjani, Constantin Enea
In Proc. 31st International Conference on Computer Aided Verification (CAV), 2019
- C2 **Hierarchical Verification of Quantum Circuits** Jun 2016
Sidi Mohamed Beillahi, Mohamed Yousri Mahmoud, Sofiène Tahar
In Proc. 8th International Symposium NASA Formal Methods (NFM), 2016
- C1 **Formal Analysis of Power Electronic Systems** Nov 2015
Sidi Mohamed Beillahi, Umair Siddique, Sofiène Tahar
In Proc. 17th International Conference on Formal Engineering Methods (ICFEM), 2015

❖ Workshop Publications

- W3 **Formal Analysis of Engineering Systems Based on Signal-Flow-Graph Theory** Jul 2016
Sidi Mohamed Beillahi, Umair Siddique, Sofiène Tahar
In Proc. 9th International Workshop Numerical Software Verification (NSV-CAV), 2016
- W2 **On the Formal Analysis of Photonic Signal Processing Systems** Jun 2015
Umair Siddique, **Sidi Mohamed Beillahi**, Sofiène Tahar
In Proc. 20th International Workshop Formal Methods for Industrial Critical Systems (FMICS), 2015
- W1 **A Tool for the Formal Verification of Quantum Optical Computing Systems** Apr 2015
Sidi Mohamed Beillahi, Mohamed Yousri Mahmoud, Sofiène Tahar
In Proc. Automated Reasoning Workshop (ARW), 2015