

Sam A. Markelon

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Education

2020–	PhD in Computer Science, University of Florida Florida Institute for Cybersecurity Research Advisor: Thomas Shrimpton
2016–2020	BS in Computer Science, University of Connecticut Minor in Mathematics Summa Cum Laude Honors Scholar Upsilon Pi Epsilon

Professional Experience

Summer 2023	NCC Group (New York, NY) Cryptography Services Intern
Summer 2019	NCC Group (New York, NY) Cryptography Services Intern
Summer 2018	Institut de Physique Nucléaire d'Orsay (Orsay, France) Scientific Computing Intern
Summer 2017	Jefferson National Laboratory (Newport News, VA) Software Engineering Intern

Awards and Grants

2023	ThinkSwiss Research Scholarship Academic Guest for Fall 2023 with Prof. Kenneth Paterson's Applied Cryptography Group at ETH Zürich.
2023	Gartner Group Graduate Fellowship
2020	University of Florida Graduate School Preeminence Award
2019	Barry M. Goldwater Scholarship
2018	University of Connecticut IDEA Grant NTRUEncrypt implementation and usage research.
2016	University of Connecticut STEM Scholar

Teaching Experience

As teaching assistant at the University of Florida.

Fall 2024 | **CIS 6930: Randomized Algorithms and Probability in Computing**

As undergraduate teaching assistant at the University of Connecticut.

Spring 2020 | **CSE 3400: Introduction to Computer and Network Security**

Fall 2019

Spring 2019 | **CSE 3150: C++ Essentials**

Fall 2018 | **CSE 2050: Data Structures and Object Oriented Programming**

Publications

Various author ordering conventions used.

Journal and Conference Papers

1. Luke A. Bauer, James K. Howes IV, Sam A. Markelon, Vincent Bindschaedler, and Thomas Shrimpton. **Covert Message Passing over Public Internet Platforms Using Model-Based Format-Transforming Encryption**. In *Proceedings of the 2024 ACM Conference on Data and Application Security and Privacy*. Association for Computing Machinery, 2024
2. Sam A. Markelon, Mia Filić, and Thomas Shrimpton. **Compact Frequency Estimators in Adversarial Environments**. In *Proceedings of the 2023 ACM SIGSAC Conference on Computer and Communications Security, CCS '23*, New York, NY, USA, 2023. Association for Computing Machinery
3. Sam A. Markelon and John True. **The DecCert PKI: A Solution to Decentralized Identity Attestation and Zooko's Triangle**. In *2022 IEEE International Conference on Decentralized Applications and Infrastructures (DAPPS)*, pages 74–82, 2022. *Best Paper Award*.
4. Walter O. Krawec and Sam A. Markelon. **A semi-quantum extended B92 protocol and its analysis**. In Eric Donkor and Michael Hayduk, editors, *Quantum Information Science, Sensing, and Computation XII*, volume 11391, page 113910G. International Society for Optics and Photonics, SPIE, 2020
5. Walter O. Krawec and Sam A. Markelon. **Genetic Algorithm to Study Practical Quantum Adversaries**. In *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO '18*, page 1270–1277, New York, NY, USA, 2018. Association for Computing Machinery

Posters and Poster Papers

6. Walter O. Krawec and Sam A. Markelon. **Discovery of Robust Protocols for Secure Quantum Cryptography**. In *Proceedings of the Genetic and Evolutionary Computation Conference Companion, GECCO '19*, page 379–380, New York, NY, USA, 2019. Association for Computing Machinery
7. Sam A. Markelon. **gemcWeb: A Cloud Based Nuclear Physics Simulation Software**. *Bulletin of the American Physical Society*, 2017

Preprints

8. **Mia Filić and Jonas Hofmann and Sam A. Markelon and Kenneth G. Paterson and Anupama Unnikrishnan.** Probabilistic data structures in the wild: A security analysis of redis. Cryptology ePrint Archive, Paper 2024/1312, 2024