

Alexander (Alex) Hoover

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Research Interests:

- **Cryptography:** structured encryption, lower bounds, information theory, and post-quantum security
- **Computer Security:** database security and privacy

Education

Rochester Institute of Technology
2018

BS in Computer Science and Applied Mathematics (double major)
GPA: 3.86 / 4.0

University of Chicago
2021

MS in Computer Science, Advisor: David Cash

University of Chicago
2023 (expected)

PhD in Computer Science, Advisor: David Cash

Publications

- David Cash, Andrew Drucker, and Alexander Hoover. "A Lower Bound for One-Round Oblivious RAM." In Theory of Cryptography Conference, pp. 457-485. Springer, Cham, 2020.
- Jonathan M. Baker, Casey Duckering, Alexander Hoover, and Frederic T. Chong. "Time-sliced quantum circuit partitioning for modular architectures." In Proceedings of the 17th ACM International Conference on Computing Frontiers, pp. 98-107. 2020.
- Zack Fitzsimmons, Edith Hemaspaandra, Alexander Hoover, and David E. Narváez. "Very hard electoral control problems." In Proceedings of the AAAI Conference on Artificial Intelligence, vol. 33, pp. 1933-1940. 2019.

arXiv Papers

- Jonathan M. Baker, Casey Duckering, Alexander Hoover, and Frederic T. Chong. "Decomposing Quantum Generalized Toffoli with an Arbitrary Number of Ancilla." arXiv preprint arXiv:1904.01671 (2019).

Professional Experience

BMW Manufacturing
Spring 2018

Student Co-op working on data mining for the Research and Innovation Center at BMW.

Green Cloud Technologies
Summer 2015

Intern working with automation of common errors occurring on the servers. Incoming error alerts are filtered through my script that would solve simple, recurring issues.

Teaching

- Cryptography, University of Chicago, Autumn 2021, 2020, 2019
- Computer Security, University of Chicago, Winter 2021, 2020
- Graph Theory, University of Chicago, Spring 2019
- Intro to Machine Learning, University of Chicago, Winter 2019
- Intro to Computer Science, University of Chicago, Autumn 2018
- Theoretical Computer Science Tutor, Rochester Institute of Technology, Spring 2016 - Fall 2017