CURRICULUM VITAE

Alexandra Veliche Hostetler

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Education

University of Michigan, Ann Arbor, MI   *Graduation Date:* August 2025
PhD in Computer Science and Engineering   *Advisor:* Mahdi Cheraghchi

Northeastern University, Boston, MA   *Graduation Date:* May 2020
Bachelor of Science in Mathematics, Minor in Computer Science   Summa Cum Laude

Research Interests

I am broadly interested in theoretical computer science and its mathematical foundations. I am especially interested in the foundations of cryptography, computational complexity, and the connections between error-correcting codes and geometric lattices.

Publications

[PH,2025] - Chris Peikert and Alexandra Veliche Hostetler. *List Decoding Reed–Solomon Codes in the Lee, Euclidean, and Other Metrics.* To appear in 17th Innovations in Theoretical Computer Science Conference (ITCS), 2026.

[CSV,2025] - Mahdi Cheraghchi, Nikhil Shagrithaya, and Alexandra Veliche. *Reductions Between Code Equivalence Problems*. In 2025 IEEE International Symposium on Information Theory (ISIT), Ann Arbor, MI, U.S.A., pages 1–6, 2025.

[ALV,2024] – Divesh Aggarwal, Jin Ming Leong, and Alexandra Veliche. *Worst-Case to Average-Case Hardness of LWE: An Alternative Perspective.* Theory of Cryptography, pages 308–336, Cham, 2025. Springer Nature Switzerland.

[CDRV,2022] – Mahdi Cheraghchi, Joseph Downs, João Ribeiro, Alexandra Veliche, *Mean-Based Trace Reconstruction over Oblivious Synchronization Channels.* IEEE Transactions on Information Theory, 68(7):4272-4281, 2022.

[CDRV,2021] – Mahdi Cheraghchi, Joseph Downs, João Ribeiro, Alexandra Veliche, *Mean-Based Trace Reconstruction over Practically any Replication-Insertion Channel.* 2021 IEEE International Symposium on Information Theory (ISIT), Melbourne, Australia, pages 2459-2464, 2021.

Invited Talks

Guest Lecture, MATH 4757: Introduction to Cryptography, Northeastern University *– Boston, MA*   December 2025
   ♦   "Cryptography based on the Code Equivalence and Lattice Isomorphism Problems".

Theory of Computer Science Seminar, Purdue University *- West Lafayette, IN*   September 2024
   ♦   "Worst-case to Average-case Hardness of LWE: An Alternative Perspective".

Computing Theory Seminar, National University of Singapore *- Singapore*   May 2023
   ♦   "Mean-Based Trace Reconstruction over Oblivious Synchronisation Channels".

Teaching

Mathematics Department of University of South Florida — Tampa, FL
Instructor for Modern Cryptography (MAD 4472) — Fall 2025

CSE Department of University of Michigan — Ann Arbor, MI
Graduate Student Instructor for Discrete Mathematics (EECS 203) — Spring 2025

CSE Department of University of Michigan — Ann Arbor, MI
Graduate Student Instructor for Introduction to Cryptography (EECS 475) — Fall 2023

CSE Department of University of Michigan — Ann Arbor, MI
Graduate Student Instructor for Advanced Cryptography (EECS 575) — Fall 2022

CSE Department of University of Michigan — Ann Arbor, MI
Graduate Student Instructor for Introduction to Algorithms (EECS 477) — Fall 2021

New Horizons Summer School — Online
Volunteer Teaching Assistant for Cryptography — June 2021

Computer Science Department of Northeastern University — Boston, MA
Teaching Assistant for Cryptography (CS 4770) — January – April 2020

St. Herman of Alaska Christian School — Allston, MA
Volunteer Teacher's Assistant for Middle School Geometry Class — Fall 2016 – Fall 2019

Mathematics Department of Northeastern University — Boston, MA
Mathematics Tutor — May 2017 – April 2019

Internships & Research Visits

National University of Singapore, Centre for Quantum Technologies — Singapore
Research Visitor / Intern — Summer 2023

Center for Communications Research, Princeton — Princeton, NJ
Researcher — Summer 2022

U.S.A. Department of Defense — MD
Director's Summer Program Participant — Summer 2019

Cengage Learning — Boston, MA
Cybersecurity Co-op — Spring – Summer 2018

Honors & Awards

Rackham Conference Travel Grant — September 2024
Awarded to support travel expenses for conference presentation at TCC.

Honorable Mention Award for Teaching — May 2022
Recognized for commitment as a Graduate Student Instructor.

ISIT 2021 Four Minutes, Two Techniques Student Challenge Winner — July 2021
Awarded to top 3 teams for a collaborative 4-minute video explaining 2 techniques.

PEAK Shout-It-Out Award January 2020

Travel award to present a poster at the NCUWM in February 2020.

Churchill Scholarship Nominee November 2019

Nominated by Northeastern University for a fully sponsored master's degree at Cambridge University, U.K.

National Merit Scholarship Fall 2016 – Spring 2020

Merit-based scholarship sponsored by Liberty Mutual, awarded per semester.

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Service

CSE Department of University of Michigan Ann Arbor, MI

Theory Lab Retreat Fall 2024

- Collaborated with two other graduate students to organize and lead a weekend retreat for the graduate students in our theory group to promote interdisciplinary collaboration and improve the lab culture.

CSE Department of University of Michigan Ann Arbor, MI

Theory Lunch Seminar Organizer Fall 2021 – Spring 2022, Fall 2024

- Collaborated with other graduate students to organize a joint faculty and student lunch seminar, as well as a student-only seminar for the theory group.

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