Noemi Glaeser

nglaeser@umd.edu • nglaeser.github.io
LinkedIn,GitHub: @nglaeser
ORCID: 0000-0002-6464-2534

Education

University of Maryland (UMD), *College Park, MD* *estimated December 2024*
Max Planck Institute for Security and Privacy (MPI-SP), *Bochum, Germany*
Ph.D., Computer Science • *Maryland-Max Planck joint program*
Advisors: Jonathan Katz (UMD) and Giulio Malavolta (MPI-SP)

University of Maryland, *College Park, MD* *May 2021*
M.S., Computer Science (GPA 3.9/4.0)

University of South Carolina Honors College, *Columbia, SC* *May 2019*
B.S., Mathematics • B.S.C.S., Computer Science • *summa cum laude* (GPA: 4.0/4.0)
Minor, Music • Flute performance certificate

Thomas Jefferson High School for Science & Technology, *Alexandria, VA, USA* *Jun 2015*
#1 public U.S. high school according to Newsweek (2014-2016)
Advanced Studies Diploma (GPA: 4.46/4.0)

Publications

* = authors listed in alphabetical order

Preprints

[11] N Glaeser, I Seres, M Zhu, and J Bonneau. (2023). Cicada: A framework for private non-interactive on-chain auctions and voting. https://eprint.iacr.org/2023/1473.

[10] I Seres, N Glaeser, and J Bonneau. (2023). Short Paper: Naysayer Proofs. https://eprint.iacr.org/2023/1472.

[9] R De Viti, I Scheff, N Glaeser, B Dinis, R Rodrigues, B Bhattacharjee, A Hithnawi, D Garg, P Druschel. (2022). CoVault: Secure High-Stakes Analytics. https://arxiv.org/abs/2208.03784.

Conference Papers

[8] *B Abdolmaleki, N Glaeser, S Ramacher, D Slamanig. (2024). Universally Composable NIZKs: Circuit-Succinct, Non-Malleable and CRS-Updatable. ***CSF 2024***. https://eprint.iacr.org/2023/097.

[7] *N Glaeser, D Kolonelos, G Malavolta, A Rahimi. Efficient Registration-Based Encryption. ***ACM CCS 2023***. https://eprint.iacr.org/2022/1505.

[6] *N Glaeser, M Maffei, G Malavolta, P Moreno-Sanchez, E Tairi, SAK Thyagarajan. Foundations of Coin Mixing Services. ***ACM CCS 2022***. https://dx.doi.org/10.1145/3548606.3560637.

[5] K Herner et al. The updated DESGW processing pipeline for the third LIGO/VIRGO observing run. ***Conf. on Computing in High Energy & Nuclear Physics (CHEP)***, 245, 01008. https://doi.org/10.1051/epjconf/202024501008.

[4] N Glaeser and A Wang. Access control for a database-defined network, ***IEEE Sarnoff Symposium 2016***. http://dx.doi.org/10.1109/SARNOF.2016.7846728.

Journal Papers

[3] K Herner et al. Optical follow-up of gravitational wave triggers with DECam during the first two LIGO/VIRGO observing runs. ***Astronomy & Computing***, 33, 100425. https://doi.org/10.1016/j.ascom.2020.100425.

[2] K Abdelfatah, J Senn, N Glaeser, and G Terejanu. Prediction and Measurement Update of Fungal Toxin Geospatial Uncertainty using a Stacked Gaussian Process. ***Agricultural Systems***, *176*, 102669. https://doi.org/10.1016/j.agsy.2019.102662.

Other

[1] N Glaeser. (2021). Cryptographic secret sharing packet, *UMD Girls Talk Math summer camp.* https://github.com/nglaeser/gtm2021/tree/main/packet.

Talks & Posters

T6. Mathematically Sharing Secrets. Invited talk, *UMD Girls Talk Math 2021 Spring Event*, Virtual.

T5. Improving bounds on entropy of odd cycle graphs (joint work with Joshua Cooper.) Poster, *UofSC Discovery Day 2019*, Columbia, SC.

T4. Improvements to image processing in the DES-GW pipeline (joint work with Kenneth Herner.) Talk, *2018 Summer Internship in Science & Tech (SIST) Presentation Day*, Fermi National Accelerator Laboratory, Batavia, IL.

T3. Access control for a database-defined network (joint work with Anduo Wang.) Talk, *Temple University REU Presentations 2016*, Philadelphia, PA.

T2. Access control for a database-defined network (joint work with Anduo Wang.) Poster, *IEEE Sarnoff Symposium 2016*, Newark, NJ.
*3rd place Poster Award

T1. Generating geographic and temporal heat maps of aflatoxin incidence using regularized linear models (joint work with Gabriel Terejanu.) Poster, *UofSC Discovery Day 2017*, Columbia, SC.

Awards & Honors

GREPSEC Workshop Grant *2021*

Graduate Research Fellowship, *National Science Foundation (NSF)* *2019 – 2024*

Phi Beta Kappa Honor Society *2019*

Oldest and most prestigious academic honor society in the U.S.

Computational Science Fellowship (Math & Computing track), *Dept of Energy* *2019, declined*

Outstanding Senior in Mathematics, *UofSC Math Dept* *Spring 2019*

Goldwater Scholarship (Honorable Mention) *2018*

Science Undergraduate Research Fellowship (SURF), *UofSC Honors College* *Fall 2018*

Investigated tightness of stochastic bounds on cycle graph entropy (poster T2); released an open-source package (graph-cyclone) with cycle graph utilities.

Grace Hopper Scholar, *Anita Borg Institute* *2017*

Funding to attend the 2017 Grace Hopper Celebration of Women in Computing

Magellan Scholar Award, *UofSC* *2016*

$2,500 for Computer Science department research

McNair Scholar, *UofSC* *2015-19*

Highest out-of-state merit-based scholarship

Service

Program Committee

Financial Crypto (2024), IEEE S&P Poster PC (2023), NDSS Student Support Committee (2023)

External Reviewer

Crypto (2023), ACM CCS (2023, 2020), PETS (2023.3, 2022.4, 2022.1), PKC (2022)

Organizer

UMD CS Graduate Peer Mentoring Program (founder) *fall 2021-present*
UMD Cryptography Reading Group *fall 2020-spring 2021*

Leadership

UofSC Cybersecurity Club (webmaster) *spring 2018-spring 2019*
Gamecock Math Club/Pi Mu Epsilon Math Honor Society (treasurer) *fall 2017-spring 2019*
UofSC Assoc for Women in Math (co-founder, treasurer, secretary) *spring 2017-spring 2018*

Mentor

UMD CS Graduate Peer Mentoring Program *fall 2021-present*
UMD Iribe Initiative for Inclusion & Diversity in Computing (I4C) *fall 2020*
UofSC McNair Scholar Buddy *fall 2016-spring 2019*

Other

Packet Writer, UMD Girls Talk Math *summer 2021, summer 2022*

Research Experience

a16z crypto *summer 2023*

Research Intern

Conducting fundamental research in cryptographic protocols for blockchains [10,11], helping portfolio companies with technical research problems, writing informational materials for public.

NTT Research, Inc. *summer 2022*

Research Intern, supervised by Sanjam Garg

Working on a scheme and formal framework for threshold cryptocurrency wallets in the hot-cold paradigm with strong trust and recovery guarantees (collaboration with the Linux Foundation).

University of Maryland *2019-2020*

Research Assistant

Developing secure multiparty computation (MPC) protocols in novel threat models & deployment environments; studied bounds on query-pattern leakage attacks on encrypted databases.

Inria Sophia Antipolis *summer 2019*

Research Intern

University of South Carolina Mathematics Department *2018-2019*

Science Undergraduate Research Fellowship (SURF)

Investigated tightness of stochastic bounds on cycle graph entropy (poster T5); released an open-source package with cycle graph utilities.

GitHub: nglaeser/graph_cyclone *(Python)* • PyPI: graph-cyclone

University of South Carolina Computer Science Department *2018-2019*

Capstone Computing Project

Developed "Open vLab", an educational network virtualization framework for hands-on computing education.

GitHub: SCCapstone/OpenVLab *(Django, OpenFlow, Javascript)*

Fermi National Accelerator Laboratory, Particle Astrophysics *summer 2018*

Grace Hopper Computing Intern

Improved efficiency of the Dark Energy Survey's image processing pipeline for optical counterparts of gravitational wave events from average 5-8 hrs to 30 min (10-16x speedup). Published in [3,5] and talk T4.

GitHub: SSantosLab/gw_workflow *(Python, Bash)*

Temple University Computer Science Department *summer 2016*

NSF Research Experience for Undergraduates (REU)

Implemented an access-control security application for the database-defined software-defined network (SDN) controller Ravel. Work presented in [4], T2, & T3.

GitHub: ravel-net/REU-access-control *(Python, PostgreSQL)* • Web: ravel-net.org/

University of South Carolina Computer Science Department *2016-2018*

Research Assistant / Magellan Scholar

Published in [2] and presented in poster T1.

Other Achievements

BSides Charleston Capture the Flag (cybersecurity competition), *2nd place* *2018*

BSides Charleston Cryptography Challenge, *1st place* *2017*

MAA Southeastern Math Jeopardy, *3rd place* *2016*

Technical Skills

Strong: *Python • LaTeX • HTML/CSS/Javascript*
Average: *Bash • C++ • Rust*

Languages

Native proficiency: English, German, Italian

Conversational proficiency: French, American Sign Language (ASL)

Selected Coursework

(* denotes honors course; † denotes graduate course.)

Mathematics

Computational Number Theory†
Analysis I* & II*
Algebraic Structures I & II*
Linear Algebra
Ordinary Differential Equations
Discrete Mathematics I

Computer Science

Applied Mechanism Design for Social Good†
Intro to Secure Distributed Computation†
Intro to Quantum Information Processing†
Algos in ML: Guarantees & Analyses†
Applied Crypto & Hostile Gov'ts (audit)†
Interactive Technologies†
Human Factors in Security & Privacy†
How to Conduct Great Research (seminar)†
Computer & Network security†
Program Analysis & Understanding†
Introduction to Cryptography*
Computer Architecture*
Theory of Computation
Ethical Hacking
Information Security Principles