

Jonah Rosenblum

Computer Science and Engineering
University of Michigan

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Research Interests

I am interested in building low-trust systems that protect data privacy and integrity. I am currently focused on protecting data at rest from ransomware attacks by using time as a defense mechanism. I have also worked on protecting sensitive data in genome analytics using trusted hardware, preventing Rowhammer attacks between VMs via architecture-aware memory allocation, and providing scalable freshness protections via a novel trusted memory design.

Education

University of Michigan

Ph.D. in Computer Science and Engineering
Advisor: Satish Narayanasamy
GPA: 3.99

Ann Arbor, MI

Sep 2022-Current

University of Michigan

M.S. in Computer Science and Engineering

Ann Arbor, MI

Jan 2021-Dec 2021

University of Michigan

B.S. in Computer Science
GPA: 3.83

Ann Arbor, MI

Sep 2017-Dec 2020

Publications

1. Juechu Dong, **Jonah Rosenblum**, Satish Narayanasamy. “*Toleo: Scaling Freshness to Tera-scale Memory using CXL and PIM.*” In Architectural Support for Programming Languages and Operating Systems (**ASPLOS**). 2024.
2. Kevin Loughlin, **Jonah Rosenblum**, Stefan Saroiu, Alec Wolman, Dimitrios Skarlatos, and Baris Kasikci. “*Siloz: Leveraging DRAM Isolation Domains to Prevent Inter-VM Rowhammer.*” In Symposium on Operating Systems Principles (**SOSP**). 2023.

Under Submission

1. **Jonah Rosenblum**, Juechu Dong, Peter Chen, Satish Narayanasamy. “Timelocked Storage for Ransomware Defense.” Under submission in **ASPLOS 2025**
2. **Jonah Rosenblum**, Juechu Dong, Satish Narayanasamy. “*SECRET-GWAS: Confidential Computing for Population-Scale GWAS.*” Under editorial review in **Nature Comp. Sci.**

Employment

Google

Software Engineering Intern

May-August 2021

Team: GCloud Infrastructure

Analyzed inversion between network and application priority for high-priority Google traffic across all clusters and identified strategies to align less latency sensitive traffic with appropriate QoS.

Google

Software Engineering Intern

May-August 2020

Team: Cloud Trace

Worked on open-source telemetry tool OpenTelemetry, implementing graceful shutdown for processes to ensure all traces and metrics are exported.

Software Artifacts

Siloz

github.com/efeslab/siloz

Extension to the Linux/KVM hypervisor to prevent inter-VM Rowhammer attacks.

SECRET-GWAS

<https://github.com/jonahrosenblum/SECRET-GWAS>

Massively parallel privacy-respecting system to collaboratively study genomics and health.

Teaching

Parallel Computer Architecture (EECS 570)

Ann Arbor, MI

Graduate Student Instructor for Prof. Ronald Dreslinski.

Jan-May 2024

(Overall, Jonah Rosenblum was an excellent teacher Q2) - 4.8/5 (5: Strongly Agree; 1 Strong Disagree)

Advanced Operating Systems (EECS 582)

Ann Arbor, MI

Graduate Student Instructor for Prof. Ryan Huang.

Sep-Dec 2023

(Overall, Jonah Rosenblum was an excellent teacher Q2 - 4.8/5 (5: Strongly Agree; 1 Strong Disagree)

One of 3 out of 400+ student instructors to receive “Outstanding GSI Award”

Parallel Computer Architecture (EECS 570)

Ann Arbor, MI

Graduate Student Instructor for Prof. Satish Narayanasamy.

Jan-May 2021

(Overall, Jonah Rosenblum was an excellent teacher Q2) - 4.8/5 (5: Strongly Agree; 1 Strong Disagree)

Professional Activities

CSEG Security Reading Group Co-Chair

Ann Arbor, MI

Run weekly security group meetings to discuss current research papers.

Jan 2023-Current

Student Applicant Support Program Volunteer

Ann Arbor, MI

Provide prospective Ph.D. students with advice and feedback on applications.

Oct 2023-Current

Grad Mentor Program Volunteer

Ann Arbor, MI

Research/grad program mentor to Master's and Ph.D. students.

Sep 2023-Current

Technical Skills

Programming Languages: Proficient in C, C++, and Python. Familiar with many other object-oriented languages. Competent with functional programming.

Other skills: Kernel development (QEMU/Linux), formal verification (Dafny/Hoare logic)