

Roy Rinberg

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Github: RoyRin

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| EDUCATION | <p>Harvard University, Cambridge, MA 2023 - PRESENT PhD. Computer Science. Advisors: Prof. Seth Neel and Prof. Salil Vadhan</p> <p>Columbia University, New York, NY 2021 - 2023 MS in Computer Science [Thesis Track]. Advisors: Prof. Rachel Cummings and Prof. Steven Bellovin</p> <p>New York University, New York, NY 2014 - 2018 B.A. Computer Science, Physics, Minor: Math.</p> <p>Thomas Jefferson High School for Science and Technology, Alexandria, VA 2010 - 2014</p> |
| RESEARCH EXPERIENCE | <p>Harvard University, Cambridge, MA AUG. 2023 - PRESENT Trustworthy Machine Learning [Advisors: Prof. Seth Neel and Prof. Salil Vadhan]<ul style="list-style-type: none">Research on foundations of machine learning and fundamentals of Differential Privacy (DP).Research on Machine Unlearning.</p> <p>Columbia University, New York, NY AUG. 2021 - AUG. 2023 Privacy in ML [Advisors: Prof. Rachel Cummings and Prof. Steven Bellovin]<ul style="list-style-type: none">Extensions of Gaussian & Laplace DP primitives, and their application to ML. <i>In Submission</i>.Research on Catered PATE - PATE in the presence of heterogenous data (link). <i>On-going</i>.Research on how ML algorithms memorize training data.</p> <p>Vector Institute, Toronto, ON MAY 2022 - SEP. 2022 Privacy in Machine Learning [Advisor: Prof. Nicolas Papernot]<ul style="list-style-type: none">Research on Individualization of PATE (PoPETs 2023) and DP-SGD (Neurips 2024).Research on reducing distributional and user-preference-level assumptions in private ML.</p> <p>New York University, New York, NY FEB. 2017 - MAY 2018 Evolution of Language Models within Social Networks [Advisor: Prof. Bud Mishra]<ul style="list-style-type: none">Studied the development of echo chambers within social networks using TDA to study distances between Word2Vec models trained on Reddit text. Preprint on arXiv.</p> |
| PAPERS | <ol style="list-style-type: none">R. Rinberg, K. Georgiev, S. Park, S. Garg, A. Ilyas, A. Madry, S. Neel. <i>Attribute-to-Delete: Machine Unlearning via Datamodel Matching</i>. (2024). ICLR 2025.R. Rinberg, Ilia Shumailov, Rachel Cummings, Nicolas Papernot. <i>Beyond Laplace and Gaussian: Exploring the Generalized Gaussian Mechanism for Private Machine Learning</i>. Preprint.F. Boenisch, C Mühl, A. Dziedzic, R. Rinberg, N. Papernot. <i>Have it your way: Individualized Privacy Assignment for DP-SGD</i>. Accepted to Neurips 2023.F. Boenisch, C Mühl, R. Rinberg, J. Ihrig, A. Dziedzic. <i>Individualized PATE: Differentially Private Machine Learning with Individual Privacy Guarantees</i>. Accepted to PoPETs 2023.R. Rinberg, N. Agarwal. <i>Privacy when Everyone is Watching: An SOK on Anonymity on the Blockchain</i>. ePrint.A. Tamaskar, R. Rinberg, S. Chakraborty, B. Mishra. <i>Creolizing the Web</i>. arXiv. |
| WORKSHOPS | <ol style="list-style-type: none">R. Rinberg and M. Pawelczyk. <i>When is Differentially Private Finetuning Actually Private?</i> In: SFLLM (NeurIPS 2024 Workshop). 2024. workshop paper and associated Blog. |
| TEACHING AND SERVICE | <ol style="list-style-type: none">Harvard - CS1200 (Intro to Algorithms) Head Teaching Fellow FALL 2024OSDI (USENIX) 2023 - Assistant organizer for PC SPRING 2023NYU - General Physics I and II Tutor 2017 - 2018 |

SELECTED
WORK
EXPERIENCE

ML Alignment and Theory Scholar (MATS), Berkeley, CA SUMMER 2025
Research Scholar
MATS is an independent research program for research on AI safety

- Worked with Keri Warr at Anthropic on detecting and preventing model weight exfiltration.

Shelton AI, New York, NY JAN. 2022 - JUN. 2022
Lead Software Engineer
Shelton AI leverages machine learning to help pension funds manage investments in private equity.

- Worked with CEO to develop fintech product to manage 10s of millions of dollars.
- Developed core AWS infrastructure for NLP document processing pipeline.

Ouster, San Francisco, CA JUN. 2018 - JUL. 2021
Software Engineer
Ouster is a company developing lidar sensors. I was an early-stage engineer working on lidar-based collision-avoidance systems.

- Led development of on-edge computing for live predictions about dangerous driving.
- Developed platforms for evaluating algorithms on historical lidar data and monitoring live data.
- *Internship Project:* Produced open-source C++ lidar point-cloud data visualizer ([Github link](#)).

Career Copilots, San Francisco, CA MAY 2020 - AUG. 2020
Software Engineer
Career Copilots is a startup seeking to help individuals find jobs using LinkedIn data.

- Developed web-scraping data-exploration pipeline of jobs-data to help users find relevant roles.

Knight First Amendment Institute, New York, NY SEPT. 2022 - MAY 2023
Algorithmic Amplification in Society [Advisor: Professor Arvind Narayanan]
KFAI works to protect digital freedoms through strategic litigation, research, and education.

- Work with Professor Arvind Narayanan to develop essays, videos, and interactives for explaining how algorithmic amplification can affect speech online.

AWARDS,
MEMBERSHIPS,
CONFERENCES

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| Student Leaders in AI (Berkman Klein Center) | 2025 |
| Columbia Advanced Master's Research Specialization | 2022-2023 |
| Presidential Honors Scholar (NYU) | 2015 - 2018 |
| Dean's List (NYU) | 2014 - 2018 |
| Sigma Pi Sigma (Physics Honor Society) (NYU) | INDUCTED 2018 |
| HPC for Undergraduates - Conference Scholarship for SC'17 | FALL 2017 |
| DURF & Research+ for Housing and Stipend (NYU) | SUMMER 2017 |

COMMUNITY
ENGAGEMENT

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| Technically Private (Organizer) | 2021-PRESENT |
| <ul style="list-style-type: none"> • Organize group of inter-university graduate students in the privacy and security spaces, across legal, policy, and technical domains. | |
| Mentor Ukraine (Mentor) | 2022-2023 |
| <ul style="list-style-type: none"> • I mentored 3 young, Ukrainian women and assisted them in applying to university in the US and Europe. One of whom received a full ride to Bard University. | |
| Project BEST (Building Excitement for Science and Tech) (Cofounder) | 2011-2014 |
| <ul style="list-style-type: none"> • Fundraised and grew organization to 25 chapters across 3 states, reaching 3000+ students. • Led two full-day STEM programs for 100+ students, and co-led team of 20 volunteers. | |
| Ouster Community Work | 2018-2020 |
| <ul style="list-style-type: none"> • Advocated management to donate \$6k to 6 public-interest orgs and institute paid volunteer-day. | |
