

INTERESTS	Theoretical Computer Science: Applied Cryptography, Large Language Models	
EDUCATION	University of California, Los Angeles	Sept. 2021–Dec. 2024
	<ul style="list-style-type: none"> • B.S. Mathematics of Computation (Honors Program). GPA: 3.95/4.00 • M.A. Mathematics (Departmental Scholar's Program). GPA: 3.95/4.00 <ul style="list-style-type: none"> ◦ Theoretical CS specialization: <i>Cryptography, Blockchain, Complexity, Probability, Algebra, Analysis</i> 	
RESEARCH	Proactive MPC with Low Communication*	March 2023–Present
	<ul style="list-style-type: none"> • <i>Mentored by Prof. Rafail Ostrovsky, Prof. Vassilis Zikas.</i> <ul style="list-style-type: none"> ◦ Investigated how enforcing sublinear communication in MPC affects the feasibility bounds on the number of corrupted parties that can be tolerated in the setting of information-theoretic security. ◦ Presented protocols in the $(2, n)$-client/server model that achieve security against semi-honest adaptive and malicious mobile adversaries with erasures and showed that they achieve optimal bounds. 	
	MPC In The Sky*	Feb. 2024–Present
	<ul style="list-style-type: none"> • <i>Mentored by Prof. Rafail Ostrovsky, Prof. Sam Kumar.</i> <ul style="list-style-type: none"> ◦ Presented a TLS-in-MPC protocol allowing clients to securely authenticate to an AWS server. ◦ Enabled efficient secure computation by off-loading heavy computation to the cloud while maintaining anonymity and privacy. ◦ Provided an implementation using MP-SDPZ and EMP-Toolkit. 	
	Efficient Private Certifier Intersection*	April 2024–Present
	<ul style="list-style-type: none"> • <i>Collaborated with Akash Shah, Sikhar Patranabis, Arup Mondal.</i> <ul style="list-style-type: none"> ◦ Presented an efficient protocol for parties holding certificates to identify a common set of valid certifiers without revealing any information about the other certificates. ◦ Optimized our protocol by performing signature verification using authenticated secret-sharing and set intersection using garbled circuits. ◦ Provided an implementation using MP-SDPZ and EMP-Toolkit. 	
	Watermarking Large Language Models*	Nov. 2023–Present
	<ul style="list-style-type: none"> • <i>Mentored by Prof. Amit Sahai, Prof. Violet Peng.</i> <ul style="list-style-type: none"> ◦ Engineered and analyzed <i>random walk</i> attacks on state-of-the-art watermarking schemes (GitHub). ◦ Tested our attacks by watermarking open-source models like Mixtral in different entropy settings. ◦ Used PyTorch and Pandas for natural language processing and data manipulation. 	
ACTIVITIES	Theory@UCLA	March 2023–Present
	<ul style="list-style-type: none"> • <i>President & Co-Founder</i> <ul style="list-style-type: none"> ◦ Established UCLA's first theoretical computer science club and recruited 40+ members. ◦ Organized reading groups every quarter – Lattice Cryptography (Spring '23), Theorist's Toolkit (Fall '23), Zero-Knowledge Proofs (Winter '24) and Secure Multiparty Computation (Spring '24). ◦ Hosted review sessions for Algorithms & Complexity [CS 180] and Theory of Computation [CS 181]. ◦ Maintained the club website, organized socials and handled logistics. 	
	Olga Radko Endowed Math Circle, UCLA	June 2022–June 2024
	<ul style="list-style-type: none"> • <i>Lead Instructor</i> <ul style="list-style-type: none"> ◦ Conducted weekly 2 hour problem-solving sessions for advanced high-school students. ◦ Tutored 3 levels - Intermediate 2A, Advanced 2A and Advanced 3 - and 80+ students in total. ◦ Designed worksheets and lectured on topics including graph theory, error-correcting codes, combinatorics and optimization. 	
	Math & CS Grader, UCLA	March 2023–Present
	<ul style="list-style-type: none"> • Linear Algebra Honors [Math 115AH] - Spring '23, Fall '23, Winter '24, Spring '24, Summer '24 • Discrete Mathematics [Math 61] - Winter '24 • Theory of Computation [CS 181] - Spring '24 	
HONORS	Ostrovsky Summer 2023 & Summer 2024 scholarships for research in cryptography at UCLA	2023-2024
	Dean's Honors List every quarter at UCLA	2021-2024
	IB Diploma World Topper: Final score of 45/45	2021
SKILLS	Python, C, C++, \LaTeX , Git, Vim	