Hadleigh Schwartz
hadleigh@cs.columbia.edu
Website | Google Scholar | LinkedIn

EDUCATION

Columbia University New York, NY
PhD in Computer Science; GPA: 4.18/4.0 *Sept. 2022 – Present*
Advisors: Xia Zhou, Dan Rubenstein, Vishal Misra

The University of Chicago Chicago, IL
Joint Bachelor of Arts and Master's in Computer Science; GPA: 3.99/4.0, Summa cum laude *Oct. 2018 – Jun. 2022*
Advisor: Haitao Zheng

RESEARCH EXPERIENCE

Mobile X Lab New York, NY
Graduate Research Assistant, Columbia University Computer Science Department *Sept. 2022 –Present*

- Leading investigation into the use of modulated light and acoustic signals for detection and prevention of audiovisual deepfakes.
- Developed two pointing, acquisition, and tracking (PAT) frameworks and end-to-end laser-based mobile systems for Gbps networking and mW-level power delivery.
- Implementing experimental optical setups, designing traditional and learning-based computer vision and signal processing algorithms, and building software-hardware prototypes.

Security, Algorithms, Networks, and Data (SAND) Lab Chicago, IL
Research Assistant, University of Chicago Computer Science Department *Oct. 2020 – Jul. 2022*

- Thesis *Towards Systematic Evaluation of Privacy Risks in IoT Video Analytics* quantified efficiency and accuracy of gait, face, and pose recognition models on NVIDIA Jetson and cloud devices.
- Developed video annotation tool and accompanying annotator training guide for large-scale collection of computer vision model data sourced from Chicago Array of Things nodes

PUBLICATIONS

* Denotes co-primary authors

Hadleigh Schwartz, Xiaofeng Yan, Charles J. Carver, Kelly Yen, Xia Zhou. "Protecting the Integrity of Live Speech Videos with Modulated Light." *In submission.* 2024.

Joseph P. Lazzaro, Xiaoxin Wang, Nicholas Shade, Charles J. Carver, **Hadleigh Schwartz,** Yanchen Liu, Xia Zhou, Jifeng Liu, Eric. R. Fossum. "Multi-Gigabit Visible Light Communication with High-Efficiency, Low-speckle Contrast White Laser Light." *In submission*. 2024.

Charles J. Carver*, **Hadleigh Schwartz***, Toma Itagaki, Zachary Englhardt, Kechen Liu, Megan Graciela Nauli Manik, Chun-Cheng Chang, Vikram Iyer, Brian Plancher, Xia Zhou. "Set Phasers to Stun: Beaming Power and Control to Mobile Microrobots with Laser Light." *In submission.* 2024.

Charles J. Carver*, **Hadleigh Schwartz***, Qijia Shao, Nicholas Shade, Joseph Lazzaro, Xiaoxin Wang, Jifeng Liu, Eric Fossum, Xia Zhou. "Catch Me If You Can: Laser Tethering with Highly Mobile Targets." *The 21st USENIX Symposium on Networked Systems Design and Implementation (NSDI '24).* April 2024. **Best demo award and 2nd place SRC winner at ACM MobiCom '23.**

Zhuolin Yang*, Yuxin Chen*, Zain Sarwar, **Hadleigh Schwartz**, Ben Y. Zhao, Haitao Zheng. "Towards a General Video-based Keystroke Inference Attack." *The 32nd USENIX Security Symposium (USENIX Security '23)*. August 2023.

Laszlo Zimanyi, Sumesh B. Krishnan, Emily Williford, Shipra Gupta, Jonathan Sepulveda, **Hadleigh Schwartz**, Frank B. Mallory, Clelia W. Mallory, Olga Dmitrenko, Jack Saltiel**.** Translational Diffusion and Unstable Conformer Trapping in Glassy Isopentane at 77 K. *The Journal of Physical Chemistry A.* September 2019.

HONORS & AWARDS

ACM MobiCom Best Demo Award	2023
ACM MobiCom Student Research Competition Runner-Up	2023
Columbia CS Department Service Award	2023
Phi Beta Kappa (inducted as a junior)	2021
Student Marshal (appointed by the President of the University of Chicago)	2021
Enrico Fermi Scholar (top 5% in the University of Chicago's computer science major)	2021

GRANTS & FELLOWSHIPS

NSDI 2024 Travel Grant	2024
MobiCom 2023 Travel Grant	2023
Columbia School of Engineering and Applied Sciences Presidential Fellowship	2022

TEACHING EXPERIENCE

Teaching Development Program, Advanced Track — *Jun. 2024 – Present*
Multi-year evidence-based teaching certification by Columbia's Center for Teaching and Learning
Teaching Assistant, CSEE 4119 – Computer Networks — *Spring 2024, Spring 2025*

SERVICE

PhD Co-Coordinator, Emerging Scholars Program — *Jan. 2023 – Present*
Reviewer, Pre-Submission Application Review Program — *Nov. 2022, Nov. 2023, Nov. 2024*
Community Outreach Lead and Mentor, compileHer — *Nov. 2019 – Jun. 2022*