

Soundarya Ramesh

CONTACT

E-mail : sramesh@comp.nus.edu.sg

Web : <https://soundaryaramesh.github.io>

EDUCATION

National University of Singapore

Ph.D. Candidate, Computer Science

Advisor : Jun Han and Chan Mun Choon

Research Interests : Sensor Security, Audio and Wireless Sensing

Aug 2018 – Present

Current GPA : 4.92/5

National Institute of Technology Karnataka, India

Bachelor of Technology in Information Technology

Jul 2014 – May 2018

GPA : 9.01/10

CONFERENCE PAPERS

- *MagTracer*: Detecting GPU Cryptojacking Attacks via Magnetic Leakage Signals.
Rui Xiao, Tianyu Li, Soundarya Ramesh, Jun Han, Jinsong Han. **ACM MobiCom 2023**.
- *TickTock*: Detecting Mic Status in Laptops Leveraging Electromagnetic Leakage of Clock Signals.
Soundarya Ramesh, Ghazali Hadi, Sihun Yang, Chan Mun Choon, Jun Han. **ACM CCS 2022**.
- Acoustics to the Rescue: Physical Key Inference Attack Revisited.
Soundarya Ramesh, Rui Xiao, Anindya Maiti, Jong Taek Lee, Harini Ramprasad, Ananda Kumar, Murtuza Jadliwala, Jun Han. **USENIX Security 2021**.
- Neuro-Symbolic Execution: Augmenting Symbolic Execution with Neural Constraints.
Shen Shiqi, Shweta Shinde, Soundarya Ramesh, Abhik Roychoudhury, Prateek Saxena. **NDSS 2019**.

WORKSHOP PUBLICATIONS

- *Your Mic Leaks Too Much*: A Double-Edged Sword for Security
Soundarya Ramesh. **ACM MobiSys Rising Stars 2024**.
Best Presentation Award
- *RampScope*: Ramp-level Localization of Shared Mobility Devices using Sidewalk Ramps.
Jonghyuk Yun*, Gyuyeon Kim*, Soundarya Ramesh, Jun Han. **ACM HotMobile 2023**.
- Listen to Your Key: Towards Acoustics-based Physical Key Inference.
Soundarya Ramesh, Harini Ramprasad, Jun Han. **ACM HotMobile 2020**.
Media Coverage: ACM News, Forbes, Scientific American, HackerNews, Mashable
- *SoundUAV*: Towards Delivery Drone Authentication via Acoustic Noise Fingerprinting.
Soundarya Ramesh, Thomas Pathier, Jun Han. **ACM DroNet 2019**.

INDUSTRY CONFERENCES

- *RollBack* - A New Time-Agnostic Replay Attack Against the Automotive Remote Keyless Entry Systems.
Levente Csikor, Hoon Wei Lim, Jun Wen Wong, Soundarya Ramesh, Rohini Poolat Parameswarath, Chan Mun Choon. **Black Hat USA 2022**.

POSTERS

- *RampScope*: Ramp-level Localization of Shared Mobility Devices using Sidewalk Ramps. Jonghyuk Yun*, Gyuyeon Kim*, Soundarya Ramesh, Jun Han. **ACM HotMobile 2023**.
Best Poster Award
- *SoundUAV*: Fingerprinting Acoustic Emanations for Delivery Drone Authentication. Soundarya Ramesh, Thomas Pathier, Jun Han. **ACM MobiSys 2019**.
Best Poster Runner-up Award

RESEARCH EXPERIENCES

Google, Mountain View

May-Aug 2022

Research Intern working on Audio Sensing for Augmented Reality (AR) Glasses
Hosts : Chiong Lai, Mathieu Parvaix (co-host)

National University of Singapore

May-Dec 2017

Research Intern in System Security Lab
Host : Prateek Saxena

Indian Institute of Science

May-Jun 2016

Research Intern in Cryptography and Information Security Lab
Host : Arpita Patra

HONORS AND AWARDS

- *NUS School of Computing Dean's Graduate Research Achievement Award* *2022*
- *Placed on the Honor List of Student Tutors for Excellence in Teaching* *2022*
- *Google PhD Fellowship* (under *Mobile Computing* research area) *2021-2024*
- *Graduate Research Fellowship*, National University of Singapore *2018-2022*
- *Research Forum Award* at the Deep Learning & Security Workshop, NUS *2017*
- *Indian Academy of Sciences Fellowship* *2016*

NON-CONFERENCE TALKS

- "Are you listening?" – Exploring Audio Sensing through the Lens of Security
Microsoft Research, Bengaluru, India (hosted by Rohan Gandhi) *Aug 2024*
- "Are you listening?" – Exploring Audio Sensing through the Lens of Security
SiNRG Lab (led by Prof. Romit Roy Choudhury), UIUC *May 2024*
- Listen to Your Key: Towards Acoustics-based Physical Key Inference
Acoustical Society of America Meeting in Ottawa, Canada *May 2024*
- Listen to Your Key: Towards Acoustics-based Physical Key Inference
Salesforce Cloud Security Assurance Team, Seattle *Sep 2023*
- "Are you listening?" – Exploring Audio Sensing through the Lens of Security
NESL Lab (led by Prof. Mani Srivastava), UCLA *Feb 2023*
- Listen to Your Key: Towards Acoustics-based Physical Key Inference
Music Technology Department, Capital University, Columbus, Ohio *Oct 2020*

TEACHING EXPERIENCE

- Teaching Assistant for CS4222 Wireless Networks *Spring 2022*
- Teaching Assistant for CS3103 Computer Networks Practice *Fall 2021*
- Teaching Assistant for CS3235 Computer Security *Spring 2020*
- Teaching Assistant for CS5476 IoT Security *Fall 2019, Fall 2020*

PROFESSIONAL SERVICE

Student Reviewing Member

- Master of Computing Admission in the School of Computing, NUS (2022).

Program Committee Member

- ACM MobiSys 2024 Artifact Evaluation

Reviewer

- ACM IMWUT 2023
- ACM Transactions on Internet of Things 2022

External Reviewer

- Conferences: S&P 2024, Security 2024, IPSN 2024, SenSys 2020/2021/2022/2023, IoTDI 2020/2021/2022, ICDCS 2020/2021/2022, COMSNETS 2020/2021, WiSec 2019, MobiSys 2019/2024
- Workshops: HotMobile 2022/2024