

# Soundarya Ramesh

## CONTACT

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

## EDUCATION

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**National University of Singapore**

Ph.D. Student, 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

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- *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

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- *Your Mic Leaks Too Much*: A Double-Edged Sword for Security  
Soundarya Ramesh. To appear in **ACM MobiSys Rising Stars 2024**.
- *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

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- *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

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- *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

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### 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

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- *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

## INVITED TALKS

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- Listen to Your Key: Towards Acoustics-based Physical Key Inference  
Music Technology Department, Capital University, Columbus, OH, USA Oct 2020
- “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  
Acoustical Society of America Meeting in Ottawa, Canada May 2024 (Upcoming)

## TEACHING EXPERIENCE

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- 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

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### **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