# Soundarya Ramesh

## CONTACT

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## EDUCATION

**National University of Singapore**                                 *Aug 2018 – Present*
Ph.D. Candidate, Computer Science                                  *Current GPA : 4.92/5*
Advisor : Jun Han and Chan Mun Choon
Research Interests : Sensor Security, Audio and Wireless Sensing

**National Institute of Technology Karnataka, India**               *Jul 2014 – May 2018*
Bachelor of Technology in Information Technology                          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, Ghozali 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. 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

- *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*, <u>Soundarya Ramesh</u>, Jun Han. **ACM HotMobile 2023**. <span style="color:red">Best Poster Award</span>

- *SoundUAV*: Fingerprinting Acoustic Emanations for Delivery Drone Authentication. <u>Soundarya Ramesh</u>, Thomas Pathier, Jun Han. **ACM MobiSys 2019**. <span style="color:red">Best Poster Runner-up Award</span>

## 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*

## INVITED TALKS

- Listen to Your Key: Towards Acoustics-based Physical Key Inference
  Music Technology Department, Captial 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

- 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