

# Soundarya Ramesh

## CONTACT

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

## EDUCATION

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**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

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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. **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

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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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|------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Google, Mountain View</b>                                                                                                 | <i>May-Aug 2022</i> |
| Research Intern working on Audio Sensing for Augmented Reality (AR) Glasses<br>Hosts : Chiong Lai, Mathieu Parvaix (co-host) |                     |
| <b>National University of Singapore</b>                                                                                      | <i>May-Dec 2017</i> |
| Research Intern in System Security Lab<br>Host : Prateek Saxena                                                              |                     |
| <b>Indian Institute of Science</b>                                                                                           | <i>May-Jun 2016</i> |
| Research Intern in Cryptography and Information Security Lab<br>Host : Arpita Patra                                          |                     |

## HONORS AND AWARDS

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

## NON-CONFERENCE TALKS

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

## TEACHING EXPERIENCE

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- |                                                            |                    |
|------------------------------------------------------------|--------------------|
| • Teaching Assistant for CS4222 Wireless Networks          | <i>Spring 2022</i> |
| • Teaching Assistant for CS3103 Computer Networks Practice | <i>Fall 2021</i>   |

- 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