Soundarya Ramesh

CONTACT

E-mail : sramesh@comp.nus.edu.sg   Web : https://soundaryaramesh.github.io

EDUCATION

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

National Institute of Technology Karnataka, India   *Jul 2014 – May 2018*
Bachelor of Technology in Information Technology   GPA : 9.01/10

CONFERENCE/WORKSHOP PUBLICATIONS

- *MagTracer*: Detecting GPU Cryptojacking Attacks via Magnetic Leakage Signals.
  Rui Xiao, Tianyu Li, **Soundarya Ramesh**, Jun Han, Jinsong Han.
  Proceedings of the 29th Annual International Conference on Mobile Computing and Networking (**MobiCom '23**)

- *RampScope*: Ramp-level Localization of Shared Mobility Devices using Sidewalk Ramps.
  Jonghyuk Yun*, Gyuyeon Kim*, **Soundarya Ramesh**, Jun Han.
  In the Proceedings of the 24st Annual International Workshop on Mobile Computing Systems and Applications (**HotMobile '23**).

- *TickTock*: Detecting Microphone Status in Laptops Leveraging Electromagnetic Leakage of Clock Signals.
  Soundarya Ramesh, Ghozali Hadi, Sihun Yang, Chan Mun Choon, Jun Han.
  To appear in the proceedings of the 2022 ACM SIGSAC Conference on Computer and Communications Security (**ACM CCS '22**).

- 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.
  In the proceedings of 30th USENIX Security Symposium (**USENIX Security '21**).

- Listen to Your Key: Towards Acoustics-based Physical Key Inference.
  Soundarya Ramesh, Harini Ramprasad, Jun Han.
  In the Proceedings of the 21st Annual International Workshop on Mobile Computing Systems and Applications (**HotMobile '20**).

- *SoundUAV*: Towards Delivery Drone Authentication via Acoustic Noise Fingerprinting.
  Soundarya Ramesh, Thomas Pathier, Jun Han.
  In the Proceedings of the 5th ACM Workshop on Micro Aerial Vehicle Networks, Systems, and Applications (**DroNet '19**).

- Neuro-Symbolic Execution: Augmenting Symbolic Execution with Neural Constraints.
  Shen Shiqi, Shweta Shinde, **Soundarya Ramesh**, Abhik Roychoudhury, Prateek Saxena.
  In the Proceedings of the 26th Network and Distributed System Security Symposium (**NDSS '19**).

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 '22.

POSTERS

- *SoundUAV*: Fingerprinting Acoustic Emanations for Delivery Drone Authentication.
  Soundarya Ramesh, Thomas Pathier, Jun Han.
  In the Proceedings of 17th Annual International Conference on Mobile Systems, Applications, and Services (**MobiSys '19** *).*

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 – Present*
- *Graduate Research Fellowship*, National University of Singapore   *2018 – 2022*
- *MobiSys*, *HotMobile* Student Travel Grant   *2019, 2020*
- *MobiSys Best Poster Runner-Up Award*   *2019*
- *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*

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)**

External Reviewer

- ACM Conference on Embedded Networked Sensor Systems **(SenSys 2020, 2021, 2022)**.

- ACM/IEEE International Conference on Internet of Things Design and Implementation **(IoTDI 2020, 2021, 2022)**.

- IEEE International Conference on Distributed Computing Systems **(ICDCS 2020, 2021, 2022)**.

- IEEE International Conference on Communication Systems and Networks **(COMSNETS 2020, 2021)**.

- ACM Workshop on Mobile Computing Systems and Applications **(HotMobile 2022)**.

- ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation **(BuildSys 2019)**.

- ACM Conference on Security and Privacy in Wireless and Mobile Networks **(WiSec 2019)**.

- ACM International Conference on Mobile Systems, Applications, and Services **(MobiSys 2019)**.