

Soundarya Ramesh

CONTACT

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EDUCATION

National University of Singapore

Ph.D. Student, Computer Science

Advisor : Jun Han and Chan Mun Choon

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/WORKSHOP PUBLICATIONS

- *TickTock*: Detecting Microphone Status in Laptops Leveraging Electromagnetic Leakage of Clock Signals.
Soundarya Ramesh, Ghazali Hadi, Sihun Yang, Chan Mun Choon, Jun Han.
To be included 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-based applications for Augmented Reality 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

- *Google PhD Fellowship* (under *Mobile Computing* research area) *2021 – Present*
- *Graduate Research Fellowship*, National University of Singapore *2018 – Present*
- *HotMobile* Student Travel Grant *2020*
- *MobiSys* Student Travel Grant *2019*
- *MobiSys Best Poster Runner-Up Award* *2019*
- *Research Forum Award* at the Deep Learning and Security Workshop, National University of Singapore *2017*
- *Indian Academy of Sciences Fellowship* *2016*

MEDIA COVERAGE OF RESEARCH

- *Smartphones Can Hear the Shape of Your Door Keys*
Scientific American Podcast *Mar 2021*
- *How Hackers Use Sound To Unlock The Secrets Of Your Front Door*
Forbes Magazine *Aug 2020*
- *Picking Locks with Audio Technology*
ACM News *Aug 2020*
- *Security Researchers Found a New Way to Pick Locks, Using Only The Sound of The Key*
ScienceAlert *Aug 2020*

INVITED TALKS

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

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**).