

Anindya Maiti

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Education

Doctor of Philosophy in Electrical Engineering and Computer Science May 2018

Wichita State University, Wichita, USA

Dissertation: *Security and Privacy of Cyber and Physical User Interactions in the Age of Wearable Computing*

Master of Science in Electrical Engineering July 2014

Wichita State University, Wichita, USA • **Outstanding Master's Thesis Award**

Thesis: *Context-Aware Access Control: An Alternate Privacy Protection Mechanism for Online Social Networks*

Bachelor of Technology in Computer Science and Engineering May 2012

Vellore Institute of Technology, Vellore, India

Work Experience

Assistant Professor August 2020 – Present

University of Oklahoma, Norman, USA

School of Computer Science • Data Science and Analytics Institute

Postdoctoral Fellow July 2018 – August 2020

University of Texas at San Antonio, San Antonio, USA

Institute for Cyber Security • SPriTELab

Research Fellow February 2018 – May 2018

University of Texas at San Antonio, San Antonio, USA

Department of Computer Science

Graduate Research Assistant August 2013 – December 2017

Wichita State University, Wichita, USA

Department of Electrical Engineering and Computer Science

Summer Intern June 2011 – July 2011

Indian Institute of Technology Kharagpur, Kharagpur, India

Integrated Circuits and Systems Engineering Lab

Awards and Honors

- ❖ Student Government Association **Outstanding Faculty Award** University of Oklahoma • 2023
- ❖ Reboot Representation Mentor for Native American Women 2022-2023
- ❖ ACM Replicability Awards WiSec 2019 • WiSec 2018
- ❖ Apple **Best Paper Award** IEEE WristSense 2018
- ❖ Fellow of the Eta Kappa Nu (IEEE-HKN) Epsilon Xi Chapter • 2017

Recent Publications

Journal Articles

- Anindya Maiti, and Murtuza Jadliwala, "Smart Light-Based Information Leakage Attacks", **ACM GetMobile: Mobile Computing and Communications**, Volume 24, Number 1, 2020.
- Anindya Maiti, and Murtuza Jadliwala, "Light Ears: Information Leakage via Smart Lights", **Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)**, Volume 3, Number 3, Article 98, 2019.
- Anindya Maiti, Murtuza Jadliwala, Jibo He, and Igor Bilogrevic, "Side-Channel Inference Attacks on Mobile Keypads using Smartwatches", **IEEE Transactions on Mobile Computing**, Volume 17, Issue 9, 2018.
- Mohammad Hossein Manshaei, Murtuza Jadliwala, Anindya Maiti, and Mahdi Fooladgar, "A Game-Theoretic Analysis of Shard-Based Permissionless Blockchains", **IEEE Access**, Volume 6, 2018.
- Nisha Vinayaga-Sureshkanth, Anindya Maiti, Murtuza Jadliwala, Kirsten Crager, Jibo He, and Heena Rathore, "A Practical Framework for Preventing Distracted Pedestrian-related Incidents using Wrist Wearables", **IEEE Access**, Volume 6, 2018.
- Arash Boustani, Anindya Maiti, Sina Yousefian Jazi, Murtuza Jadliwala, and Vinod Namboodiri, "Seer Grid: Privacy and Utility Implications of Two-Level Load Prediction in Smart Grids", **IEEE Transactions on Parallel and Distributed Systems**, Volume 28, Issue 2, 2017.

Conference and Workshop Papers

- Mohd Sabra, Anindya Maiti, and Murtuza Jadliwala, "Background Buster: Peeking through Virtual Backgrounds in Online Video Calls", **IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)**, Baltimore, Maryland, USA, June 2022.
- Nisha Vinayaga-Sureshkanth, Raveen Wijewickrama, Anindya Maiti, and Murtuza Jadliwala, "An Investigative Study on the Privacy Implications of Mobile E-scooter Rental Apps", **ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec)**, San Antonio, Texas, USA, May 2022.
- Anindya Maiti, Nisha Vinayaga-Sureshkanth, Murtuza Jadliwala, Raveen Wijewickrama, and Greg P. Griffin, "Impact of E-Scooters on Pedestrian Safety: A Field Study Using Pedestrian Crowd-Sensing", **IEEE PerCom Workshop on Sensing Systems and Applications using Wrist Worn Smart Devices (WristSense)**, Pisa, Italy, March 2022.
- Soundarya Ramesh, Xiao Rui, Anindya Maiti, Jong Taek Lee, Harini Ramprasad, Ananda Kumar, Murtuza Jadliwala, and Jun Han, "Acoustics to the Rescue: Physical Key Inference Attack Revisited", **USENIX Security Symposium (SECURITY)**, Virtual, August 2021.
- Raveen Wijewickrama, Anindya Maiti, and Murtuza Jadliwala, "Write to Know: On the Feasibility of Wrist Motion based User-Authentication from Handwriting", **ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec)**, Virtual, June 2021.
- Mohd Sabra, Anindya Maiti, and Murtuza Jadliwala, "Zoom on the Keystrokes: Exploiting Video Calls for Keystroke Inference Attacks", **Network & Distributed System Security Symposium (NDSS)**, Virtual, February 2021.
- Nisha Vinayaga-Sureshkanth, Raveen Wijewickrama, Anindya Maiti, Murtuza Jadliwala, "Security and Privacy Challenges in Upcoming Intelligent Urban Micromobility Transportation Systems", **ACM Workshop on Automotive and Aerial Vehicle Security (AutoSec)**, Virtual, August 2020.
- Kavita Kumari, Murtuza Jadliwala, Anindya Maiti, and Mohammad Hossein Manshaei, "Analyzing Defense Strategies Against Mobile Information Leverages: A Game-Theoretic Approach", **Conference on Decision and Game Theory for Security (GameSec)**, Stockholm, Sweden, October 2019.

- Anindya Maiti, and Murtuza Jadliwala, "Light Ears: Information Leakage via Smart Lights", ACM International Joint Conference on Pervasive and Ubiquitous Computing (**UbiComp**), London, UK, September 2019.
- Raveen Wijewickrama, Anindya Maiti, and Murtuza Jadliwala, "deWristified: Handwriting Inference Using Wrist-Based Motion Sensors Revisited", ACM Conference on Security and Privacy in Wireless and Mobile Networks (**WiSec**), Miami, Florida, USA, May 2019. **ACM Replicability Award**
- Anindya Maiti, Ryan Heard, Mohd Sabra, and Murtuza Jadliwala, "Towards Inferring Mechanical Lock Combinations using Wrist-Wearables as a Side-Channel", ACM Conference on Security and Privacy in Wireless and Mobile Networks (**WiSec**), Stockholm, Sweden, June 2018. **ACM Replicability Award**
- Mohd Sabra, Anindya Maiti, and Murtuza Jadliwala, "Keystroke Inference Using Ambient Light Sensor on Wrist-Wearables: A Feasibility Study", IEEE MobiSys Workshop on Wearable Systems and Applications (**WearSys**), Munich, Germany, June 2018.
- Nisha Vinayaga-Sureshkanth, Anindya Maiti, Murtuza Jadliwala, Kirsten Crager, Jibo He, and Heena Rathore, "Towards a Practical Pedestrian Distraction Detection Framework using Wearables", IEEE PerCom Workshop on Sensing Systems and Applications using Wrist Worn Smart Devices (**WristSense**), Athens, Greece, March 2018. **Best Paper Award**
- Anindya Maiti, Kirsten Crager, Murtuza Jadliwala, Jibo He, Kevin Kwiat, and Charles Kamhoua, "RandomPad: Usability of Randomized Mobile Keypads for Defeating Inference Attacks", IEEE EuroS&P Workshop on Innovations in Mobile Privacy & Security (**IMPS**), Paris, France, April 2017.
- Kirsten Crager, Anindya Maiti, Murtuza Jadliwala, and Jibo He, "Information Leakage through Mobile Motion Sensors: User Awareness and Concerns", European Workshop on Usable Security (**EuroUSEC**), Paris, France, April 2017.
- Anindya Maiti, Murtuza Jadliwala, and Chase Weber, "Preventing Shoulder Surfing using Randomized Augmented Reality Keyboards", IEEE PerCom Workshop on Security, Privacy and Trust in the Internet of Things (**SPT-IoT**), Kona, Hawaii, USA, March 2017.
- Anindya Maiti, Oscar Armbruster, Murtuza Jadliwala, and Jibo He, "Smartwatch-Based Keystroke Inference Attacks and Context-Aware Protection Mechanisms", ACM Symposium on Information, Computer and Communications Security (**ASIACCS**), Xi'an, China, May 2016.
- Anindya Maiti, Murtuza Jadliwala, Jibo He, and Igor Bilogrevic, "(Smart)Watch Your Taps: Side-Channel Keystroke Inference Attacks using Smartwatches", ACM International Symposium on Wearable Computers (**ISWC**), Osaka, Japan, September 2015.
- Murtuza Jadliwala, Anindya Maiti, and Vinod Namboodiri, "Social Puzzles: Context-Based Access Control in Online Social Networks", IEEE/IFIP International Conference on Dependable Systems and Networks (**DSN**), Atlanta, Georgia, USA, June 2014.

————— Research Grants —————

- ❖ **[PI]** NSF Collaborative Research: CCRI: New: ScooterLab - A Programmable and Participatory Sensing Testbed using Micromobility Vehicles • Award Number 2234517 • \$205,900 • March 1, 2023 - February 28, 2026
- ❖ **[Co-PI]** NSF CCRI: Planning: ScooterLab: Development of a Programmable and Participatory e-Scooter Testbed to Enable CISE-focused Micromobility Research • Award Number 2016717 • \$100,000 • October 1, 2020 - March 31, 2022

————— Teaching Experience —————

- ❖ Instructor for CS5970: **Blockchains & Cryptocurrencies** OU • S22, S23
- ❖ Instructor for CS2334: **Programming Structures and Abstractions** OU • F20, F21, F22, S23

Student Research Advising

❖ Current Students:

- Khoi Trinh PhD Student in Data Science and Analytics at OU
- Scott Seidenberger PhD Student in Data Science and Analytics at OU
- Oluwasajibomi Ajisegiri PhD Student in Computer Science at OU
- Noah Pursell BS Student in Computer Science at OU
- Nima Najafian BS Student in Computer Science at OU
- Nisha Vinayaga-Sureshkanth PhD Student in Computer Science at UTSA
- Mohd Sabra PhD Student in Computer Science at UTSA
- Raveen Wijewickrama PhD Student in Computer Science at UTSA

❖ Past Students:

- Kavita Kumari PhD in Computer Science from UTSA, 2022
- Comfort Olorunlero MS in Computer Science from UTSA, 2021
- Ryan Heard BS in Computer Science from Wichita State University, 2017
- Chase Weber BS in Computer Engineering from Wichita State University, 2016
- Oscar Armbruster BS in Computer Science from Wichita State University, 2016
- Zoya Khan MS in Computer Networking from Wichita State University, 2015

Press Coverage

- ❖ CBS News: "**Are "Smart" Light Bulbs a Security Risk?**" [↔](#) 2019
- ❖ ScienceDaily: "**Study Warns of Security Gaps In Smart Light Bulbs**" [↔](#) 2019
- ❖ Deutschlandfunk Nova: "**Smarte Glühbirnen Petzen**" [↔](#) 2019
- ❖ Tech Xplore: "**Study Warns of Security Gaps In Smart Light Bulbs**" [↔](#) 2019
- ❖ Optics & Photonics News: "**Smart LED Bulbs: Trust but Verify**" [↔](#) 2019
- ❖ MIT Technology Review: "**The Best of the Physics arXiv. Light Ears: Information Leakage via Smart Lights**" [↔](#) 2018
- ❖ PJ Media: "**Your Internet-Enabled Smart Lights May Be Able to Spy On You**" [↔](#) 2018
- ❖ Bleeping Computer: "**Novel Attack Technique Uses Smart Light Bulbs to Steal Data**" [↔](#) 2018
- ❖ Internet of Business: "**Smart Lightbulbs Can Be Used to Steal Secure Data, Finds Report**" [↔](#) 2018
- ❖ KAKE (ABC) News: "**Group Tackles Cyber Security at Wichita Forum**" [↔](#) 2017
- ❖ The Wichita Eagle: "**Is Your Smartwatch Watching You?**" [↔](#) 2015
- ❖ Government Technology News: "**Can Smartwatch Sensors Make Hacking Easier?**" [↔](#) 2015

Services and Affiliations

- ❖ Member of IEEE since 2010.
- ❖ Program Committee Member for IEEE Security & Privacy 2024.

❖ Reviewed journal articles for:

- ACM IMWUT (UbiComp)
- ACM Transactions on Intelligent Systems and Technology
- ACM Transactions on Privacy and Security
- IEEE Transactions on Information Forensics and Security
- Elsevier Computers & Security
- IEEE Transactions on Mobile Computing
- IEEE Access
- Distributed Ledger Technologies
- Springer Cluster Computing

❖ Reviewed conference papers for:

- IEEE Security & Privacy 2024
- IEEE NAS 2018
- IEEE SmartGridComm 2016
- PoPETs/PETS 2019
- IEEE IPCCC 2014-18
- IEEE DSC 2019
- IEEE ICCCN 2018

References

- ❖ Dr. **Dean Hougen**, University of Oklahoma, Norman, USA.
hougen@ou.edu • +1 (405) 325 3150
- ❖ Dr. **Murtuza Jadliwala**, University of Texas at San Antonio, San Antonio, USA.
murtuza.jadliwala@utsa.edu • +1 (210) 458 5693
- ❖ Dr. **Igor Bilogrevic**, Google, Zurich, Switzerland.
ibilogrevic@google.com • +41 79 693 92 51
- ❖ Dr. **Mohammad Hossein Manshaei**, Isfahan University of Technology, Isfahan, Iran.
manshaei@cc.iut.ac.ir • +98 (313) 391 9067
- ❖ Dr. **Vinod Namboodiri**, Wichita State University, Wichita, USA.
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