

Sneha Sudhakaran

Assistant Professor Florida Institute of Technology

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Google Scholar: <https://scholar.google.com/citations?user=YvvsVzIAAAAJ&hl=en&oi=ao>

Summary

- Computer science Assistant Professor with extensive experience in Android Reverse Engineering, Behavioral Cyber Security, Cyber Forensics with special focus on Memory Forensics, Network Security, and Applied Machine Learning in Cyber Security Domain.
- Knowledgeable IT security professional with 8 years of experience researching and implementing security solutions in academia and national organizations (2016- present).
- Expert in enhancing research accuracy and precision by carrying out system administration and network analysis.
- Hands-on experience in C, Java, C++, and Python, along with Cyber Security certifications: CEH and CHFI.
- Authored 16 technical papers and extended abstracts, 10 presented at premier conferences-IEEE S&P, RAID, ACSAC, AAFS, SIGCSE, 6 in reputed journals-like Digital Investigation, Elsevier and work recognized by several awards by WiCyS, Louisiana State University and Florida Institute of Technology

Education

Graduate Course work

Louisiana State University, Baton Rouge LA, PhD in Computer Science May 2017 – May 2022

- GPA: 3.83/4.0 (https://repository.lsu.edu/gradschool_dissertations/5807/)

Dissertation: *Performing Memory Forensics for Object Recovery from Android Application Memory*

Amrita University, MTech in Cyber Security May 2011 – May 2013

- GPA: 3.8/4.0 (<https://www.amrita.edu/center/tifac-core-cyber-security/alumni/>)

Undergraduate Course Work

Calicut University, Btech in Information Technology August 2006 – May 2010

- GPA: 3.5/4.0

Selected-Skills

- **Penetration Testing:** BurpSuite, Metasploit, Nmap, Zmap
- **Network Security:** tcpdump, Wireshark, Netcat
- **Skills:** Reverse Engineering of Android Devices, Scada/Memory/Android/Multimedia Forensics
- **Mobile Tools:** Android Studio, Apktool
- **Memory Analysis:** Volatility
- **Reverse Engineering:** IDA PRO, GHIDRA
- **Decompiler:** Jadx, Android Studio

- **Programming Languages:** C, C++, Python, Java
- **Debuggers:** gdb
- **Scripting :** Shell, Perl
- **Operating Systems:** Windows, Linux, Mac, Android

Experience

Assistant Professor L3Harris Center for Science and Engineering, **August 2022 -Present**
Melbourne, Florida Institute of Technology, Melbourne, FL

- Teach Courses like Host and Application Security Advise students on FITSEC Security team that targets Capture the Flag security contests
- Expand security research ideas to develop Graduate security research projects

Louisiana State University, Center for Computation & Technology (CCT) **Aug 2020- May2022**
Baton Rouge, USA Graduate Assistant under Dr. Sai Pinnepalli

- Track current security reports for network traffic at LSU and CCT
- Review status of Content Management System using framework like Drupal
- Help plan mitigation paths with special focus on Penetration testing, Network traffic monitoring

Louisiana State University, Baton Rouge, USA Research / Teaching **Aug 2017- July 2020**
Assistant under Dr. Golden G. Richard III

- Designed research and experimental studies on Memory Forensics to extract multimedia objects from process memory
- Performed in-depth research to answer complex questions in the field of Android Forensics
- Collaborated with Dr. Aisha Ali Gombe (Asst. Professor at Towson University, Baltimore) to develop a tool kit
- Mentored five graduate and three undergraduate researchers and prepared annual reports for NSF
- Analyzed large complex sets of data and performed memory analysis and reverse engineering

Research Assistant- Dr. Irfan Ahmed, University of New Orleans **May 2016- July 2017**

- Gained in-depth knowledge on SCADA devices to perform research and solve complex problems in the field of Cyber Physical System Forensics
- Authored 2 technical papers in reputed conferences such as IEEE Security & Privacy and ACSAC

Cyber Security Intern under Dr. Vinod P. Bhattathirippad GJ Forensics, **August 2014-Aug 2015**
Kerala, India

- Analyzed system risk on Windows to identify and implement appropriate security countermeasures
- Recommended POSAR extensions for water mark inclusions and published a technical paper in ADFSL-2015 conference

Assistant Professor, MG University, Kochi, Kerala, India **Jul 2013 -July 2014**

- Collaborated with professors to design teaching plans, adapted methods of instruction and classroom materials to address individual student needs, and managed educational projects
- Developed course syllabus for Information Risk Management and Cyber Forensics, outlined standards, materials, grading procedures for students
- Evaluated and supervised student activities and performance levels to provide reports on academic progress

Certifications

- Certified Ethical Hacker (CEH), Credential id : ECC27124931769, Expires Dec 2027
- Certified Hacker and Forensic Investigator (CHFI), Credential Id : ECC67147118876, Expires Apr 2028

Professional-Achievements

- WiSec Poster Chair 2024 (<https://wisec2024.kaist.ac.kr/organization-committee>)
- Access Computing Faculty Institutional Partner Florida Institute of Technology (<https://www.washington.edu/accesscomputing/about/partners>)
- Florida Institute of Technology Women in Cyber Security Student Chapter Founder and Faculty Advisor (<https://www.wicys.org/initiatives/student-chapters/>)
- Florida Institute of Technology FITSEC Faculty Co-Coach (<https://www.congress.gov/117/crec/2022/12/21/168/199/CREC-2022-12-21-pt1-PgE1324.pdf>)
- Cyber Security Journal Editorial Board
- CAE-R Designation Point of Contact for Florida Institute of Technology(along with Dr. Carvalho)

Panelist-Keynote

- National Science Foundation Panelist 2024
- IPCCC 2024 N2Women Panelist
- IEEE R3 Florida Space Coast Cyber Security Conference Melbourne Keynote Speaker October 2024
- Amrita Vishwa Vidyapeetham, Indian university Curriculum Development Board of Supervisors 2020-2026
- Session Chair (Digital and Multimedia) American Association of Forensic Science Baltimore February 2025
- Session Chair IEEE PAINE Colorado October 2025

MITRE-CVE-reported

2023

- CVE-2023-49199
- CVE-2023-49200

Professional-Membership

1. ICCWS - Reviewer and Conference Committee Executive (2021 - present)
2. ACSAC - Reviewer (2025)
3. USENIX Security Conference Artifact evaluation (Spring 2025)
4. DFRWS Technical Program Committee 2025
5. Elsevier - Reviewer - Internet of Things and Cyber-Physical Systems(2022- Present)

6. Elsevier - Reviewer - Computer and Security(2022- Present)
7. Board of Studies Member - Amrita University 2020-2022 (Cyber Security Curriculum Developement)
8. Women In Cyber Security - Student Member (2019 - 2022)-Louisiana State University
9. Women In Cyber Security - Faculty Advisor (2023 - present) - Florida Institute of Technology
10. Access Computing - Academic Affiliate (2023-present) - Florida Institute of Technology
11. ACM - Association for Computing Machinery (2020 - present)
12. IEEE (2020 - present)
13. American Association for Forensic Science - Student Affiliate (2019 - 2022)
14. American Association for Forensic Science - Trainee Affiliate and Reviewer (2022 - present)
15. IEEE PAINE Reviewer 2022- present
16. ACM WiSec 2023-24 Reviewer and Poster Chair 2023-2024
17. SIGCSE 2023-2024

Awards

- Purdue AI workshop Scholarship, August 2025
- WiCyS (Women in Cyber Security) Travel Scholarship 2024
- Black Hat Registration Scholarship 2023
- WiCyS (Women in Cyber Security) Student Scholarship 2021
- EC-Council Item Writer 2021 Digital Badge Achievement
- Amrita Cyber Security Board of Studies Member 2020-2022
- WiCyS (Women in Cyber Security) Student Scholarship 2020
- WiCyS Graduate Student Travel Stipend Scholarship 2020

Publications

Peer-Reviewed:Oral-Presentation

- **Sneha Sudhakaran**, Aisha Ali-Gombe, Golden G. Richard III, “Correlating Garbage Collection and Android Object Recovery”, 2022 74th AAFS Annual Scientific Meeting
- **Sneha Sudhakaran**, Aisha Ali-Gombe, Golden G. Richard III, “Evaluating the impact of External Runtime Factors on Android forensic tools”, 2021, 73rd AAFS Annual Scientific Meeting
- Aisha Ali-Gombe, **Sneha Sudhakaran**, Andrew Case, Golden G. Richard III, “Proving Database Tampering Through InMemory Object Reconstruction”, 2019, 71st AAFS Annual Scientific Meeting

Book-Chapter

- Augustine Orgah, **Sneha Sudhakaran**, Dayisha Orgah, “ Passwords -An empirical Study of Behavior in the Social Media Era” CRC Publishers – Book name” Behavioral Cybersecurity (To be published in 2025)

Peer-Reviewed-Conferences

- **Conference:** Vinayak Jain, **Sneha Sudhakaran**, Saranyan Senthivel “ First Steps, Lasting Impact: Platform-Aware Forensics for the Next Generation of Analysts ", ICCWS 2026(Accepted)
- **Conference:** **Sneha Sudhakaran**, Naresh Kshetri “ AI Agents vs. Human Investigators: Balancing Automation, Security, and Expertise in Cyber Forensic Analysis", ICCWS 2026(Accepted)
- **Conference:** Sandesh Ambadas More , **Sneha Sudhakaran**, TJ O'Connor, Marco Carvalho “ Comprehensive Security Assessment of Holy Stone Drones: Examining Attack Vectors and Data Extraction Techniques, ICCWS 2025
- **Conference:** Suarez, Logan, Dakhilallah Alshubrumi, Tj O'Connor, **Sneha Sudhakaran**, "Unsafe at any Bandwidth: Towards Understanding Risk Factors for Ransomware in Higher Education." Data Driven Security Workshop2024, Elsevier
- **Conference:** TJ O'Connor, Alex Schmith, Chris Stricklan, Marco Carvalho, and **Sneha Sudhakaran** "Pwn Lessons Made Easy With Docker: Toward an Undergraduate Vulnerability Research Cybersecurity Class." In Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 1, pp. 986-992. 2024.
- **Conference:** Fernalld, Kourtnee, T. J. OConnor, **Sneha Sudhakaran**, and Nasheen Nur. "Lightweight Symphony: Towards Reducing Computer Science Student Anxiety with Standardized Docker Environments." In Proceedings of the 24th Annual Conference on Information Technology Education, pp. 15-21. 2023.
- **Conference:** **Sneha Sudhakaran**, Aisha Ali Gombe, Andrew Case, Golden G. Richard III, “Evaluating the Reliability of Android Userland Memory Forensics”, ICCWS March 2022
- **Conference:** **Sneha Sudhakaran**, Aisha Ali Gombe, Augustine Orgah, Andrew Case, Golden G. Richard III, “AmpleDroid Recovering Large Objects from Android Application Memory”, IEEE Workshop on Information Forensics and Security Dec 2020
- **Conference:** Ali-Gombe, Aisha, **Sneha Sudhakaran**, Andrew Case, and Golden G. Richard III, “DroidScraper: A Tool for Android In Memory Object Recovery and Reconstruction”, 2019, 22nd International Symposium on Research in Attacks, Intrusions, and Defenses (RAID 2019), pp. 547-559
- **Conference:** Irfan Ahmed, Vassil Roussev, William Johnson, Saranyan Senthivel, **Sneha Sudhakaran**, “A SCADA system testbed for cybersecurity and forensic research and pedagogy”, Proceedings of the 2nd Annual Industrial Control System Security Workshop, 2016, pp. 1-9
- **Conference:** Polpaya Vinod Bhattathiripad, **Sneha Sudhakaran**, Roshna Khalid, “A New Cyber Forensic Philosophy for Digital Watermarks in the Context of Copyright Laws”, Association for Digital Forensics, Security and Law 2015 Page 6 of 6

Peer-Reviewed-Journals

- **Journal:**Rahul Mishra, Sudhanshu Jha, Omar Faruq Osama, Bishnu Bhusal, **Sneha Sudhakaran**, Naresh Kshetri,"An Efficient Anomaly Detection Framework for Wireless Sensor Networks using Markov process, International Journal of Advanced Technology and Engineering Exploration", August 2025(Submitted and accepted in arxiv)
- **Journal:**Rusheel Raj Panakkadan, Prajakta Meher, Sandesh Ambadas More , **Sneha Sudhakaran** "Enhancing Cybersecurity Education: The Impact Of Simulated Learning And Interactive Tutorials On Student Performance And Anxiety Reduction, IATED Digital Library 2025
- **Journal:** **Sneha Sudhakaran**, Nasheen Nur, Aeshah Zarraa - Navigating The Challenges: Understanding Anxiety Among International Graduate Students In The United States INTED Praceedings, IATED Digital Library 2024
- **Journal:** Ali-Gombe, Aisha, **Sneha Sudhakaran**, Ramyapandian Vijayakanthan, and Golden G. Richard III, "cRGB_Mem: At the intersection of memory forensics and machine learning." Forensic Science International: Digital Investigation 45 (2023): 301564 2023
- **Journal:** Irfan Ahmed, Sebastian Obermeier, **Sneha Sudhakaran**, Vassil Roussev, "Programmable logic controller forensics", IEEE Security & Privacy, 2017, 15 (6), 18-24
- **Journal:** Nimisha Ajayakumar, **Sneha Sudhakaran**, "Comparison in Honda Algorithm and Neural Network for Anti Cruise Collision Avoidance System", International Journal of Digital Application & Contemporary research,2014
- **Journal:** Nishna Soman, **Sneha Sudhakaran**, "An Advanced Approach towards Shadow Detection and Restoration in VHR Images", International Journal of Engineering Research and Technology, 2014

Peer-Reviewed-Posters

- **Sneha Sudhakaran**, Aisha Ali Gombe, Golden G. Richard III, "On Reliability of Userland Memory Forensics", Poster Presentation, 2021, WiCys virtual 2021
- **Sneha Sudhakaran**, Aisha Ali Gombe, Andrew Case, Golden G. Richard III, "Extraction of Multimedia Large Objects Using Memory Forensics from the Android Runtime", Poster Presentation, 2020, WiCys virtual 2020

Grants+ Funding

Secured Grants

- **Secured External** Grant-Oak Ridge Associated Universities Innovation Partnership Grant 2023, PI Sneha Sudhakaran, Co-PI TJ O'Connor, \$4000 "-Organizing cyber security competition Cyber Heroines 2023" (to encourage and honor women participating in Cyber security challenges across the world
- **Secured External** Sneha Sudhakaran Scholarship for attending Purdue CSSI August 2025 Workshop, with travel grant \$800
- **Internal Grant:** SEED"Securing the Ecosystem: Cybersecurity Framework for 5G Android Devices, Medical IoT Devices, and Drone Connectivity", PI Sneha Sudhakaran, Abdullah Aydeger, Co-PI - Mehmet Kaya \$11,800

- **Secured Internal**-Florida Institute of Technology Institutional Research Incentive grant PI Sneha Sudhakaran, Co-PI TJ O'Connor \$26600, "Developing Novel Cyber Security Research initiative using Machine Learning"2022
- **Secured Letter of Collaboration**MRI Letter of Collaboration with Dr. Navid Asadi - University of Florida
- **Secured Letter of Collaboration** CICI 2025 - RSSD - "LLMDaL: LLM-Driven Data Labeling for Training ML Models" with Dr. Julio Ibarra, Florida International University, Miami, Florida

Pending Grants

- **CAREER:Next-Generation Forensic Analysis: Unifying OS Internals and Digital Device Investigations**, PI Sneha Sudhakaran, \$653,304 National Science Foundation, 2025 (Submitted)
- **ERI: FalconEye - A Security and Forensic Assessment Framework for Robots in Adversarial Environments**, PI Sneha Sudhakaran, \$197,607 National Science Foundation, 2025 (To be submitted in September 2025)
- **SATC EDU: Bringing Healthcare IoT into the Classroom: A Cybersecurity and Forensics Education Initiative**, PI Sneha Sudhakaran, \$375,654 National Science Foundation, 2025 (To be submitted in September 2025)

References

- Golden G. Richard III
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- Aisha Ali-Gombe
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- Irfan Ahmed
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