Modhuparna Manna

Contact

Location: Serampore, West Bengal (India)
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Personal Details

Born: May 10, 1990
Place: Panvel (Maharashtra)
Citizenship: Indian

Areas of Expertise

- Cyber Forensics
- Memory forensics
- Reverse engineering
- Malware analysis
- Application Security
- Enterprise Security

Work History

- Assistant professor in the Department of Computer Science in the University of Alabama in Huntsville (Jan 2023 - Jan 2024)
- Assistant professor in the Department of Electrical and Computer Engineering and Computer Science at the University of New Haven (Aug 2021 - Dec 2022)
- Graduate Assistant at Louisiana State University and Instructor at BRBytes (Aug 2020 - Jul 2021)
- Graduate Research Assistant at Center of Computation in Louisiana State University (Aug 2018 - Jul 2020)
- Graduate Teaching Assistant in the Department of Computer Science Engineering at Louisiana State University (Jan 2017 - Jul 2018)
- Software Engineer at Capgemini, Kolkata (Jul 2014 - Apr 2016)

Education

- Ph.D. in Computer Science (concentration in Cybersecurity),
  Louisiana State University, Baton Rouge, LA, USA, 2022.
  Dissertation Title: "Using Memory Forensics to Analyze Programming Language Runtimes," Advisor: Golden G. Richard III
- B.Tech. in Computer Science, Heritage Institute of Technology, Kolkata, WB, India, 2014. (GPA 7.9)

Current Affiliations
- Trainee Affiliate, American Academy of Forensic Sciences (AAFS).
- Member, Women in Cybersecurity (WiCyS).
- Reviewer, Digital Investigation (Elsevier).
- Organizing Committee Member, DFRWS (Workshop Vice-Chair)
- Panelist, National Science Foundation (SaTC)

Current Certifications
- GCFA/GIAC Certified Forensic Analyst
- COMPTIA Security+
- COMPTIA IT Fundamentals

Teaching Responsibilities

<u>University of Alabama in Huntsville</u>
- Mobile Digital Forensics
- Introduction to Cybersecurity Engineering

<u>University of New Haven</u>
- Reverse Engineering
- Memory Forensics
- Cyber Forensics
- Introduction to Cybersecurity

Research Grants

New Faculty Research Grant by UAH (Oct 2023 - Oct 2024, Award Amount: $10,000) for Proposal: Analysis of cPython Malware using Memory Forensic Techniques

Publications and Presentations
Book Chapters
- G. G. Richard III, A. Case, M. Manna, E. Hahne, A. Ali-Gombe, <u>Digital Investigation and the Trojan Defense, Revisited</u>. In: Ijeh AC, Curran K, editors. *Crime Science and Digital Forensics: A Holistic View*, Science Publishers, an imprint of CRC press (Taylor and Francis Group), Boca Raton, FL, USA. 2021.

Refereed Publications
- M. Manna, A. Case, A. Ali-Gombe, G. G. Richard III, " <u>Memory Analysis of .NET and .Net Core Applications</u>," *Proceedings of the 2022 Digital Forensics Research Conference (DFRWS),* July 2022. **(Best Paper Award)**

- M. Manna, A. Case, A. Ali-Gombe, G. G. Richard III," <u>Modern macOS Userland Runtime Analysis</u>", *Forensic Science International: Digital Investigation* (38)C, 301221

- M. Manna, A. Case, G. G. Richard III, "Performing Mac Memory Analysis Using Objective-C and Swift Data Structures," *Proceedings of the 73rd Annual Meeting of the American Academy of Forensic Sciences (AAFS)*, February 2021, Virtual Meeting.

- A. Case, R. Maggio, M. Manna, G. G. Richard III, "Memory Analysis of macOS Page Queues," *Proceedings of the 2020 Digital Forensics Research Conference (DFRWS),* July 2020, Memphis, TN.

Lightning Talk
- M. Manna, "The Malware Did It," *9th Annual Women in Cybersecurity (WiCyS) Conference*, - March 2022, Cleveland, OH

Poster Presentations
- M. Manna, "Memory Analysis of macOS Userland Runtime using Objective-C and Swift Data Structures," *8th Annual Women in Cybersecurity (WiCyS) Conference*, - September 2021, Aurora, CO

Honors and Awards
- Awarded DFRWS USA Best Paper Award, 2022.
- Awarded Women in Cybersecurity scholarship, 2022.
- Awarded Black Hat EWF scholarship, 2021.
- Awarded Women in Cybersecurity student scholarship, 2021.
- Awarded Women in Cybersecurity travel stipend, 2021.

Outreach Activities
- Trained high school interns in Cybersecurity in Alabama (2023)
- Part of Awards Committee in the Digital and Multimedia Sciences Section, AAFS (2022)
- Developed Cybersecurity curriculum for high schools in Louisiana (2021)