

ARUN AMAITHI RAJAN

Chennai, India

+91-80123 64643

arunamaithirajan@gmail.com

arunamaithi

Homepage

Google Scholar

Professional Summary

Experienced Firmware Security Engineer and Final-year Ph.D. candidate in Computer Science with 5+ years of combined experience in secure firmware design and research. Former Firmware Security Engineer at Micron, Singapore, with expertise in secure firmware and confidential computing. Passionate about applying deep academic knowledge in artificial intelligence and security to build secure, scalable systems in fast paced, innovation driven environments.

Experience

Security Research Lab, College of Engineering Guindy

Jan 2022 – Present

Research Scholar

Chennai

- Built secure image retrieval systems using encrypted indices and dynamic sharing, improving efficiency, security, and fault tolerance.
- Published 5+ articles on encrypted storage and efficient retrieval in top-tier journals, advancing privacy-preserving techniques.
- Collaborated with different teams and mentored 2 PG students and 3 UG teams in the areas of secure computing and cryptography.

Micron Technology

Jan 2020 – Jan 2022

Firmware Development Engineer - SSD Security

Singapore

- Developed secure firmware modules including key management and authentication, improving device security and lifecycle.
- Built internal debugging tools, boosting team efficiency and cutting bug resolution time by 30%.
- Designed enterprise and client SSD security features with test plans, collaborating globally to deliver secure firmware.

PayPal

May 2019 – Sep 2019

Information Security Research Intern

Singapore

- Developed a PoC leveraging Intel SGX to explore hardware-based confidential computing in the cloud.
- Improved system efficiency and secure communication by profiling ABE performance and developing RESTful security APIs.

Technical Skills

Languages: C, C++, Embedded C, Python, Go, Java

Firmware and Security: NVMe, TCG, Secure boot and download, Key Management

Frameworks: PyTorch, TensorFlow, Scikit-learn, Open SSL

Tools and Platforms: Git, JIRA, JTAG, Xgig Analyzer, Linux

Education

College of Engineering Guindy, Anna University

Jan 2022 – Present

Ph.D. in Cyber Security (Multimedia Security Focus)

Chennai, India

School of Computing, National University of Singapore

Aug 2018 – Jan 2020

Master of Computing (3.7/5)

Singapore

College of Engineering Guindy, Anna University

Aug 2014 – May 2018

B.E in Computer Science and Engineering (9.37/10) - 6th Rank

Chennai, India

Research Patents and Publications

- Secure Biometric-based Access Control System Using Blockchain With Zero-Knowledge Proof**, Indian Patent, 2024, (Filed).
- SMedIR: Secure Medical Image Retrieval Framework with ConvNeXt-based Indexing and Searchable Encryption in the Cloud**, *Journal of Cloud Computing* (2024), pp. 1–30.
- EdgeShield: Attack-resistant Secure and Privacy-aware Remote Sensing Image Retrieval System for Military and Geological Applications using Edge Computing**, *Earth Science Informatics* (2024), pp. 2275–2302.
- Systematic Survey: Secure and Privacy-preserving Big Data Analytics in Cloud**, *Journal of Computer Information Systems* (2023), pp. 1–21.
- Preventing Forgeries by Securing Healthcare Data Using Blockchain Technology**, *3rd ICT4SD, Goa* (2018), pp. 151–159.

Milestones and Achievements

- Won **Best Paper Awards** (ICEEICT 2024, ICCIDS 2023) and received **Micron's Excellent Execution** and **Employee Achievement STAR Award** for outstanding contributions to research and engineering.
- Completed **NPTEL** and **Coursera** certifications in Cyber Security, Quantum Computing, and Project Management.
- Participated in international academic events on cyber security, including a workshop in **Taiwan**, a conference in the **UK**, and a paper presentation in the **UAE**.
- Delivered invited talks on **Intel SGX** and **EdgeShield** at Anna University (2022) and an international conference in UAE (2024).