

ANISHA GHOSH

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Key Skills

- Cloud (Azure, GCP, AWS)
- Cryptography
- Python
- Java
- Git
- FIDO2 Specifications
- Nix- and Windows based systems
- Network setup and Deployment
- Packet Analysis
- Web Development and deployment
- MERN Stack

Research topics

- Passwordless authentication
- Malware dissection
- Cryptography and Cryptology
- Network protocols and configurations
- Wireless networking
- Risk analysis and management
- Incident response

Education

VIT-AP University
B. Tech in Computer Science, 2024

CYBERSECURITY RESEARCHER

Working on Passwordless Authentication Technologies

As a highly skilled **researcher** and **professional** in the field of **cybersecurity**, I am passionate about exploring new and innovative ways to improve the security and usability of **authentication systems**. My current focus is on the use of FIDO2 technologies to enable passwordless authentication, and I have gained extensive expertise in this area through various **research projects** and **publications**. I have a track record of achievement in the field of cybersecurity, including winning the Smart India Hackathon, 2022 and being a top 10 finalist in the ION<athon> 1.0. Currently, as the Chief Development Officer at Null Chapter, I lead and coordinate infosec club activities including taking multiple **public sessions** on **Information Security** and have developed relationships with industry partners and sponsors.

Technology Summary

Systems: Unix-Based Systems; Windows

Specializations: Cloud security, Network security, Authentication technologies, Secure communication.

Experience

Center of Excellence in AI and Robotics, VIT-AP
Digital Fortress Pvt. Ltd.
Null (InfoSec) Chapter, VIT-AP

Cybersecurity Researcher, May 2022-Present

Chief Security Officer, November 2022-Present

Chief Development Officer (CDO), Dec 2022-Present

Happiest Minds Technologies

Software Development Engineer (SDE) Intern, Summer 2022

Projects

Became an expert in information systems security with multiple projects in authentication and secure transmission technologies. *Recent Project Highlights:*

- **MediaRF** was developed as part of the **Smart India Hackathon 2022**, where it was awarded the **winner** place. The project involves the transmission of multimedia files securely over police radios. It uses encoding, compression, and encryption techniques to transmit multimedia files over audio communication devices. Overall, the goal of MediaRF is to enable the secure transmission of multimedia files over police radios, using a combination of compression, encryption, and encoding techniques. This project demonstrates the expertise in **cryptography**, **Python**, **wireless communication**, as well as their ability to develop innovative solutions to real-world problems.
- **PP2PP (Painless Peer to Peer Payments)** was developed as part of the **ION<athon> 1.0**, where it was a **top 10 finalist**. The project involves the development of a secure payments gateway with additional features such as nearby payments and advanced security standards. It leverages both **physical security** and best **cloud security** practices to ensure the security of the payments. This project demonstrates the expertise in **Azure**, **Python**, **FIDO2 Specifications**, and **web development**, as well as their ability to create innovative solutions to enhance the security and functionality of payment systems.
- **Reverse Proxy** was developed as part of the **Microsoft Imagine Cup**, where it was the **India Runner Up**. The project involves the creation of a seamless student attendance platform that eliminates the possibility of proxy attendance. It leverages a **public key cryptosystem (RSA)** and device attestation with **FIDO2** specifications to ensure the authenticity of student attendance. This project demonstrates the expertise in **Azure**, **Python**, **FIDO2 Specifications**, and **web development**, as well as their ability to develop innovative solutions to address real-world challenges in the education sector.
- **Loki** was developed as a **research project** in the **Center of Excellence in Artificial Intelligence and Robotics, VIT-AP**. It demonstrated the capabilities of passwordless authentication to secure physical assets in an IoT based environment. It used FIDO2 specifications to deploy passwordless authentication with physical security keys. It has been **published** in the **reputed** open-access journal **IEEE Access**.

Researched extensively on authentication technologies. Here are my publications:

- S. C. Sethuraman, A. Mitra, G. Galada, A. Ghosh and S. Anitha, "MetaKey: A Novel and Seamless Passwordless Multifactor Authentication for Metaverse," 2022 IEEE International Symposium on Smart Electronic Systems (iSES), Warangal, India, 2022, pp. 662-664, doi: 10.1109/iSES54909.2022.00148. <https://doi.org/10.1109/iSES54909.2022.00148>
- S. C. Sethuraman, A. Mitra, K. -C. Li, A. Ghosh, M. Gopinath and N. Sukhija, "Loki: A Physical Security Key Compatible IoT Based Lock for Protecting Physical Assets," in IEEE Access, 2022, doi: 10.1109/ACCESS.2022.3216665. <https://doi.org/10.1109/ACCESS.2022.3216665>
- Sethuraman, S. C., Mitra, A., Ghosh, A., Galada, G., & Subramanian, A. (2023). MetaSecure: A Passwordless Authentication for the Metaverse (Version 1). arXiv. <https://doi.org/10.48550/ARXIV.2301.01770>