

# Rudranil Maity, MS

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## EDUCATION

### New Jersey Institute of Technology, Newark, NJ

Sep'22 - May'24

Master of Science, Cyber Security & Privacy

GPA: 3.50

**Relevant Coursework:** Cryptography and Security, Internet and Higher Layer Protocols, Network Mgmt. & Security, Smartphone Security, Cloud Computing, Counter Hacking Techniques, Cyber Sec. Investigations and Law, Data Analysis for Information Systems

## SKILLS

Java, C, x86, Python, SQL, JavaScript, Cryptographic Algorithms, Authentication, Penetration Testing, Reverse Engineering, Vulnerability Analysis (XSS, SQLi), Nmap, OSINT Tools, Metasploit, Wireshark, Tor, SIEM, Computer Architecture, PowerShell, Bash Scripting, Computer Networks (TCP/IP, OSI, DNS, HTTP, BGP, DHCP, VPN, ZTNA, ACLs, OSPF), Firewalls (IDS, IPS, Proxy, Gateways), Kerberos, Active Directory, Nessus, OWASP Top 10, HIPAA Compliance, PKI Concepts, Docker, Endpoint Security (MDM, EDR), AWS (EC2, CloudWatch, IAM, EKS)

## PROFESSIONAL EXPERIENCES

### New Jersey Institute of Technology

May'23 - Present

*Graduate Teaching Assistant*

Newark, NJ

- Managed the graduate course of Data Mining (CS634; Summer and Fall 2023) and later Machine Learning (DS675; Spring 2024); through grading of assignments and supervision of projects included in the syllabus.
- Propagating the dynamic integration of diverse machine learning concepts, from the intricacies of Bayesian classification to the complexities of Recurrent Networks and regression, fostering a comprehensive understanding of cutting-edge techniques within the realm of data science.

### SPLIT Chennai

Jan'22 - Feb'22

*Android Developer Intern - ReactNative*

Chennai, India

- Resolved critical issues with precision by leveraging ReactNative, rectifying improper adjustments in the time stamp along with fixing React-DOM based reloading issues of the homepage within the front-end of an Android application which catered over 5000+ user base.
- Contributed in project deployment efficiency by implementing SCRUM methodologies and leveraging Git version controlling, including coordination with web-based development team to maintain proper workflow between mobile and web version of the application.
- Achieved punctual project delivery through collaborative efforts with cross-functional teams, maintaining transparent communication and providing updates via JIRA tickets—exemplifying effective project coordination and communication skill.

## RELEVANT PROJECTS

### Network Traffic Analysis of Android apps using MITMproxy and Frida

Oct'23 - Dec'23

- Executed dynamic analysis of over 30 popular Android apps by intercepting encrypted traffic with MITMProxy, Frida, and Objection, revealing unchecked transmission of personal information to advertising and analytics servers.
- Discovered apps transmitting unencrypted device data like ID, location, usage statistics to ad/analytics servers at high frequency (up to 15 requests/second) including plaintext transmission of authentication credentials and credit card information, posing severe fraud risks.
- Suggested concrete mitigation strategies for users, developers, and app stores to strengthen privacy standards and control unauthorized data sharing and published detailed analysis methodology, findings, and recommendations in comprehensive project report.

### Buffer Overflow Attacks Over Various Programs based on x86 Architecture

Jan'23 - May'23

- Crafted exploits to gain arbitrary code execution by overflowing buffers and bypassing modern defenses like ASLR, DEP, and stack canaries in multiple C programs and performed static and dynamic analysis of programs using objdump, strings, and gdb to identify vulnerabilities.
- Utilized GDB in multiple Linux distributions to inspect disassembly of codes in runtime; followed by execution of attacks like ret2libc and ROP chains to bypass modern systems protections like non-executable stacks.

### Extensive Penetration Testing of Web Applications

Oct'22 - Dec'22

- Developed JavaScript exploits that allowed stealing user cookies and credentials by exploiting XSS vulnerabilities in a web application.
- Performed vulnerability analysis by acting as a Certificate Authority to issue and sign digital certificates, exploring public key infrastructure concepts like certificate signing, SSL/TLS connections between client and server, and authentication.

### Detection of Weak Passwords Against Dictionary Attack

Sep'22 - Oct'22

- Developed a Java program to crack salted password hashes using a dictionary attack.
- Successfully executed a brute force attack using "John the Ripper" through the "rockyou.txt" file, containing over 5 million entries.
- Successfully scaled up the attack's intensity by using the "weakpass" database, comprising over 40 million passwords.

## ACHIEVEMENTS

Top 5% @ [TryHackMe](#) | Patent - Encrypted Data Transfer Over Void Medium through Light Fidelity (Design no: 363174-001; CBR: 200974 and class 14-02; Intellectual Properties India) | [IBM Cyber Security Analyst](#) – IBM | [Generative AI For Cybersecurity Professionals](#) – IBM | Participant @ JerceyCTF '23 and '24 | Currently Preparing for CompTIA Security+