

AKASH POUDEL

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RESEARCH INTERESTS

Security and Privacy, IoT Security, Applied Machine Learning on Security

EDUCATION

Bachelor of Technology in Computer Science and Engineering 2020 - 2024
National Institute of Technology Rourkela. **CGPA** : 8.4
Courses Taken: Machine Learning, Deep Learning, Intrusion Detection Systems, Cloud Computing, Operating Systems, Computer Networks, Internet of Things (IoT), Blockchain and Cryptocurrency Technologies

PUBLICATION

Akash Poudel*, Sujata Mohanty, Manabhanjan Pradhan, “*Design of Lightweight Authentication Scheme For Low Power Internet of Medical Things(IoMT),*”
IEEE International Conference on Smart Power Control and Renewable Energy 2024 (ICSPCRE-2024) [Link](#)

PROJECTS

MiniSOC Lab

Personal Project

- Developed an open-source **MCP Server** to integrate Wazuh SIEM alerts with LLM applications, enabling real-time security context augmentation and natural language capabilities.
- Deployed custom detection rules in Wazuh and tested real attacks to simulate alerts using Atomic Red Team.
- Integrated diverse log sources (Linux, Sysmon, Web Server logs) and deployed endpoints/agents using **Ter-raform**.

Malware Prection using Machine Learning

Personal Project

- Engineered a machine learning model for malware detection using system call sequence analysis and **TF-IDF** feature extraction, applying various classifiers like **Logistic Regression** using the **ADFA-LD** dataset.
- Achieved **96.84% accuracy** with the Logistic Regression model, demonstrating proficiency in data preprocessing, model development, and performance evaluation.

RESEARCH EXPERIENCE

University of Illinois Urbana-Champaign 2024
Crowd Research Program (UIUC+), **Advisor: Darko Marinov**

- Automated the large-scale testing of over 1500+ Java mutant using maven, generating essential data for study on human versus machine mutant labeling.
- Systematically organized and analysed extensive testing results, performing comparative analysis across various branches to support the research.

Information Security Laboratory, NIT Rourkela 2023-2024
Research Assistant, **Advisor: Sujata Mohanty**

- Designed and **formally verified** an enhanced authentication system for **resource-constrained** Internet of Medical Things (IoMT) sensors, and validated using **ProVerif** Cryptographic Protocol verification tool, presented the paper on ICSPCRE 2024.
- Conducted comprehensive research on authentication protocols for IoT environment including the Internet of Drones (IoD), evaluating security, efficiency and scalability of various different schemes.

TECHNICAL SKILLS

Programming Languages: Python, Bash, C, C++

Tools: GNU/Linux, ProVerif, SOAR, Wazuh, Docker/Podman, Terraform, AWS, GCP, Nmap, Burpsuite

Industry Skills: Automated Playbook Development, Integration and Automation Development, Detection Rules, Software Development

INDUSTRY EXPERIENCE

ICICI Bank

2024 July-Present

Security Engineer (SOC)

- Automated 50+ SOC Use Cases by designing custom Cortex XSOAR Playbooks, enhancing analyst efficiency by 60%
- Transformed incident management workflows by designing and deploying automation tools (eg: FFIVE for DDoS Blocking) and playbooks tailored to specific SOC needs, reducing manual intervention in repetitive tasks.
- Conducted platform upgrades and patches, ensuring the Cortex XSOAR platform remained secure, reliable and optimised to ensure high availability.

Centre for Development of Advanced Computing (CDAC)

2023 May-2023 July

Summer Intern

- Designed and implemented the database schema in **SQL** for storing conversational data related to cyber-crimes.
- Created an analytics dashboard in **PHP** to retrieve all interactions and leveraged FusionCharts to make interactive charts for displaying data.
- Conducted Vulnerability Assessment of web applications, prepared reports, and suggested mitigation measures.

TEACHING EXPERIENCE

Instructor for the topic *Introduction to Open Source Intelligence(OSINT)* at OpenCode, NIT Rourkela

Instructor for the talk *Attacks on the Security of Web* by Dept of CSE, NIT Rourkela for a short term course.

Guest Speaker for the session *Introduction to Git and Linux Systems* at Birendra Multiple Campus, Nepal

AWARDS AND FELLOWSHIPS

Study in India Scholarship by *Ministry of Education India* for UG at NIT Rourkela(2020-2024)

Mahatma Gandhi Scholarship by *Embassy of India*

EXTRA CURRICULARS

- **Founder** of student chapter at NIT Rourkela for **OWASP** along with Dr.Ramesh Mohapatra from Dept of CSE, NIT Rourkela
- **President of CyberSecurity Club** Achilles (merged later with OpenCode) and CyberSecurity Advisor for OpenCode for 3 consecutive years.
- **Organiser** for HackNITR 3.0 and 4.0 which had 5000+ registrations for two consecutive years.