Priyansha Tiwari

Master of Technology
Computer Science Engineering
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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
M.Tech, CSE	Indian Institute of Technology, Hyderabad	8.07	Dec 2024
B.Tech, CSE	AITR Indore	8.20	2021
Senior Secondary	Kendriya Vidyalaya O.F Katni	85.4%	2017
Secondary	Kendriya Vidyalaya O.F Katni	9.6	2015

EXPERIENCE

- **Networked Wireless Systems (NeWS) Lab, IIT Hyderbad** 🌐 *Jan 2022 - Present*
  Research Assistant Hyderabad, India

  ◦ Working on the **5G TestBed** as a core member, with good understanding of **3GPP**/**ETSI** standards.

  ◦ Developed **Indian Telecom Security Assurance Requirements (ITSAR)** documents and Test Scripts for the **5G Network Functions and NFV (Network Function Virtualization)** components in collaboration with National Centre for Communication Security (NCCS), Department of telecommunications (DoT).

  ◦ These security requirements will be adopted by 5G vendors during deployment to ensure the security and integrity of telecommunications networks.

  ◦ **Open Source Contribution** to **Eureocom OAI 5G CORE**, developed MongoDB based Unified Data Repository Network Function, also introduced **Sharding** for providing **Load Balancing and Scalability**.

- **Societe Generale Global Solution Centre** 🌐 *Aug 2021 - Dec 2021*
  Software Engineer Bengaluru, India

  ◦ Led the migration process of a **MySQL SSIS** project to a Company's Internal Tool, ensuring smooth transition and improved efficiency.

  ◦ Provided comprehensive build support, enabling seamless integration and facilitating the monthly release cycle.

- **BNP Paribas Pvt. Ltd** 🌐 *Jan 2021 - June 2021*
  Software Engineer Intern Mumbai, India

  ◦ Worked on Automation Testing, planned and developed testcases using **Selenium, maven and TestNG**.

  ◦ Worked on Continuous Integration and Testing new functionalities for Risk and Pnl System.

PUBLICATIONS

P. Tiwari, S. Vittal and A. F. A, **"Sharding the Datastore Network Functions of 5G Core for Scalable and Resilient Slice Service,"** 2024 IEEE 10th International Conference on Network Softwarization (NetSoft), Saint Louis, MO, USA, 2024, pp. 331-335,doi: 10.1109/NetSoft60951.2024.10588906.

PROJECTS

- **Fraud & Data Leakage Attacks in 5G Network Slices (M.Tech Thesis)**
  Technology/Tools: Cpp, Socket Programming, Wireshark, VScode

  ◦ Worked on research problem based on Slice Impersonation in 5G Network Slices causing Fraud & Data Leakage Attacks.

  ◦ Developed mitigation technique using **Access Token based authorization** on the IITH 5G TestBed.

- **Firewall Using Socket Programming**
  Technology/Tools: Python, Socket Programming, Wireshark, VScode

  ◦ Created raw socket-based firewall filtering traffic based on rule set supporting **IPv4, IPv6, MAC, ICMP and TCP/UDP**.

  ◦ Utilized two network interface cards for connections to the external (Internet) and internal networks.

  ◦ Used **iptable's masquerade** and accept rules for firewall setup, optimized code to detect and prevent DoS attacks.

- **Secure Chat using OpenSSL and Man in the Middle Attacks**
  Technology/Tools: Python, OpenSSL, Socket Programming, Wireshark, VScode
  - Designed a reliable and secure chat program that uses **TCP and TLS protocols**.
  - Featured it to perform **downgrade and MITM attacks** to tamper the chat communication.

- **Network Intrusion Detection System (NIDS) using Machine Learning Techniques**
  Technology/Tools: Python, Machine Learning, Jupyter
  - A machine learning approach to detect different anomalies and attacks like **DDoS, MITM, Probing attacks, and R2L**, in network systems.
  - Used classical machine learning techniques like **Support Vector Machine, Decision Tree, Random Forest, Naive Bayes, K-Means, and Neural Networks** with sampling techniques like **SMOTE** to report weighted **F1 score**.

- **Rain Prediction IOT AWS Cloud Based Application**
  Technology/Tools: Python, AWS SageMaker, Machine Learning, VScode
  - Developed an end-to-end **IoT application with Raspberry Pi** that collects temperature sensor data and deploys it to AWS Cloud.
  - Utilized **AWS SageMaker** to deploy a machine learning model for predicting rain probability, with predictions sent back to the IoT device.

SKILLS

- **Programming Languages**: C, C++, Python, Core Java
- **Database**: MySQL, MongoDB
- **Operating System**: Windows, Linux
- **Framework**: Spring Boot, React, Flask
- **Tools/Technologies**: 5G Networks, NFV, Wireshark, Git, Docker, OpenStack, IOT

ACHIEVEMENTS

- Among top 40 students nationwide who were awarded Reliance Foundation Scholarship.
- GATE CSE 2021 and 2022 qualified.
- Inter-IIT Tech Meet 2023 finalist.

POSITIONS OF RESPONSIBILITY

- **Placement & Tech Coordinator,** Office of Career Services, IIT Hyderabad
- **Teaching Assistant ,** Network Wireless System and Internet of Things Course, IIT Hyderabad
- **Member,** ACM-W, IIT Hyderabad
- **Social Media Head,** Entrepreneurship, AITR Indore