BAKHT SHER ALI

Phone: +86-18652993890
Email : bakhtsher112@gmail.com
Address:Hefei, Anhui

Objectives

I am a self-motivated, peak performing Master individual. My research is primarily focused on Cyber security, particularly IoT Security, Intrusion Detection Systems, and the integration of ML and DL technologies to strengthen modern security frameworks. I aim to address emerging challenges in network security, including anomaly detection, threat mitigation, and secure communication protocols in highly connected environments such as the Internet of Things (IoT). My work also explores advanced techniques for detecting and preventing cyber threats, leveraging predictive analytics and intelligent algorithms to enhance the resilience of critical systems. Additionally, I am passionate about developing scalable and adaptive security solutions for complex networks, ensuring data integrity, privacy, and protection against evolving cyberattacks.

Research Areas

- Intrusion Detection
- IoT Security
- Cyber Security
- Privacy Perservation

Education

- **Nanjing University of Aeronautics and Astronautics** — Nanjing, China
  Master in Computer Science and Technology — *2019 – 2022*
- **University of Malakand Pakistan** — KPK, Pakistan
  BS (hons) in Information Technology — *2013 – 2017*

Experience

- **Swat Collegiate College Swat** — KPK, Pakistan
  Lecturer — *2018 - 2019*

Master Thesis

"Research on multi-class imbalance problem to detect cyber-attacks in industrial control systems"

The main objectives of this research work are:

- To investigate the current methods of intrusion detection.
- To evaluate the performance of existing methods for detecting intrusions in SCADA.
- To investigate the better methods for attack detection in SCADA.
- Implement best sampling methods for Data set.

Research Publications

1. **Bakht Sher Ali**, Izhar Ahmad khan, et al. "ICS-IDS: application of big data analysis in AI-based intrusion detection systems to identify cyberattacks in ICS networks [J]" .*The Journal of Supercomputing*, Vol. 80, pp. 7876–7905, year 2024. (Journal Indexing: **SCI**, Status: Published).

2. K. I. zhar, N. Moustafa, I. razzak, M. tanveer, P. Dechang, Y. Pan and **Bakht Sher Ali**. "XSRU-IoMT: Explainable simple recurrent units for theat detection in internat of madical things networks[J]" . *International journal of Future Generation Computer Systems*, Vol. 127, pp. 181-193, . (Journal Indexing: **SCI**, Status: Published).

3. **Bakht Sher Ali**, Shi Huibin, Izhar Ahmad khan "Explainable Learning Machines for Protecting IIoT-enabled Industrial Control Systems Against Cyber-Attacks", *NUAA the Proceeding of 9th International Academic Conference for Graduates*, 2021, Nanjing, China.

4. Izhar Ahmed and Keshk, Marwa and Hussain, Yasir, Pi, Dechang, Li, Bentian, Kousar, Tanzeela and **Bakht Sher Ali** "A context-aware zero trust-based hybrid approach to IoT-based self-driving vehicles security [J]"*journal of Ad Hoc Networks*, Vol. 167, pp. 103694, Year 2025. (Journal Indexing: **SCI**, Status: Published).

5. **Bakht Sher Ali**, Aitizaz Ali "Orchestrating IoT Safety: A Next-Gen Framework Using IFTTT Applets [J]" *Cloud Computing*, (Journal Indexing: **SCI**, Status: Under Review).

6. Ahmad, Wasim and Almaiah, Muhammad Amin, **Ali, Bakht Sher** and Ali, Aitizaz "A Privacy Preserving Federated Learning BasedIoT Framework Using Cloud Computing [J]" *Cloud Computing*, 2024 **SCI**, Status: Published).

7. Khongorzul Dashdondov, Mahjoobe Nazari Chamazkoti, Akmalbek Abdusalomov, Habib Ullah, Muhammad Zubair Khan, **Bakht Sher Ali** "Hybrid XGBoost-CNN Model for Anomaly Detection: A New Approach for IoT Wireless Sensor Networks" *ICCK Transactions on Advanced Computing and Systems*, Volume 2, Issue 1: 42-52, 2026, Status: Published).

8. Wushishi, Usman J., Nasir Hussain, **Bakht Sher Ali**, and Saqib Ali. "EGIS-IIoT: Classifier-Gated Hierarchical Reinforcement Learning for Secure Cyber-Physical Defense in Industrial IoT Systems." Available at SSRN 6709729.

Journal Reviewer

Computing and Informatics
ICCK Transactions on Advanced Computing and Systems
IEEE Transactions on Consumer Electronics
Intelligent Journal System

Other Research Projects

- **Design Web Online Shopping System:** The aim of our work is to provide web-based onlin shopping system. to provide laptops and mobils at door step. Users are able to search products of their own choice.

- **Emergency application for Smartphones:** The aim of our work is to provide an android application which helps user in critical situation like car accident using sound recognition technology. The proposed system will able to detect sound and after sound detection they will pick the location of the emergency and after that this

location will be included in the SMS by the application and send it to the specified number by the application automatically.

- **Hospital management system:** It is a database application for desktop developed in java which is used to computerize all the record of central hospital swat. The objective of this research work is to design wideband antennas with notch characteristics.
- **Replay attack:** Replay attacks are the network attacks in which an attacker spies the conversation between the sender and receiver and takes the authenticated information e.g. sharing key and then contact to the receiver with that key. In Replay attack the attacker gives the proof of his identity and authenticity.
- **Session Hijacking:** Session hijacking term means the exploitation of presently running session. Sometimes it is often referred as session key, it is used to gain the unauthorized gain to a system or to exploit services in a computer. When a magic cookie which is used to authenticate the user to the server is stolen and used for the unauthorized purse is referred as session hijacking. Generally it is relevant to the web developers, as HTTP cookies are used to maintain the session on a site can be easily stolen by an attacker or the attacker can utilize by gaining access to the computer where the he can find the saved cookies.

Technical Reports and Presentations

- BS (IT) thesis seminar entitled as **"Online Shopping System"** presented in Department of CS and IT, University of Malakand, KP, Pakistan.

Membership

- **China Computer Federation (CFF)**

China Computer Federation (CFF)Conference/Work Shops Attended:

- 13th International Conference on Security, Privacy and Anonymity in Computation, Communication and Storage (SpaCCS 2020) NUAA Nanjing , China.
- 6th International Conference on Information Security and Cryptography (Inscrypt 2020) Jinan University, Guangzhou China.
- International Conference of Artificial Intelligence 2021 NUAA Nanjing , China.

Technical Skills and Certifications

- **Formal Verification and Protocol Analysis:** Tamarin Prover, CryptoVerif, symbolic protocol modeling, authentication and secrecy verification, correspondence properties, attack-trace analysis, replay and delivery-integrity analysis.
- **Android Reverse Engineering:** JADX, Apktool, Ghidra, IDA Pro, Frida, Objection, ADB, Smali/DEX analysis, Java/Kotlin decompilation, static and dynamic analysis.
- **Network and Traffic Analysis:** Wireshark, TShark, mitmproxy, Charles Proxy, HTTP Toolkit, Proxyman, TLS/HTTP traffic inspection, packet capture analysis.
- **Programming and Development:** Python, Java, C++, HTML, PHP, API integration, web scraping, data analysis, machine learning workflows.

- **Cybersecurity Areas:** Network security, mobile application security, cryptographic protocol analysis, secure messaging analysis, vulnerability assessment.
- **Documentation and Research Tools:** LaTeX, Overleaf, Microsoft Word, Excel, PowerPoint, Visio, Photoshop.
- **Certifications/Training:** TEFL; Webinar on AI, IoT, and Blockchain: Rethinking Risk Management and Compliance.

Awards

- Received a Master's Degree Scholarship Fully Funded by the Chinese Government.
- China Computer Federation.
- Conference attendent Certificate.
- Award of Essay Compitition on China-Pak freindship.
- IT club exhibition Spitic 14 University of Malakand organizer certificate.
- Connected Pakistan conference participant certificate.

Personal Information

Date of Birth: 1996-03-05
Nationality: Pakistan
Languages:

- English (fluent)
- Urdu (fluent)
- Chinese (understanding)
- Pashto (native language)

Supervisors

Associate Prof. Dr. Shi Huibin
College of Computer Science and Technology,
Nanjing University of Aeronautics and Astronautics, Nanjing, China.
Email: hshi@nuaa.edu.cn

Associate Prof. Izhar Ahmed Khan
College of Computer Science and Technology,
Nanjing University of Aeronautics and Astronautics, Nanjing, China.
Email: izhar@nuaa.edu.cn