FATIMA REHMAN

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PROFESSIONAL SUMMARY

Cybersecurity undergraduate at GIKI (2024–2028) who achieved **97.71% EEG-based Alzheimer's classification accuracy** in a fully self-directed research internship (paper in progress) and earned **2 national 1st-place awards** in competitive robotics. Hands-on experience in penetration testing, vulnerability assessment, and endpoint security across **6+ engineering projects**. Proficient with Burp Suite, Wireshark, Nmap, OWASP ZAP, GoPhish, and Kali Linux. Holds **3 concurrent leadership roles** at GIKI applying change management to national-scale technical events.

EDUCATION

BS Cybersecurity — *Topi, KPK, Pakistan*
Ghulam Ishaq Khan Institute of Engineering Sciences & Technology (GIKI) — *2024 – 2028*

- **Relevant Coursework:** Network Security, Cryptography, Operating Systems, Computer Science, Machine Learning, Data Structures & Algorithms, Computer Networks, Digital Logic Design
- **Societies:** IEEE GIKI (Event Management Lead), SOPHEP (Corporate Liaison), Nexus (Registration Lead) — 3 concurrent leadership roles across all active technical societies at GIKI

TECHNICAL SKILLS

Languages:	Python, C++, Arduino (C), HTML5, CSS3, SQL
Cybersecurity:	Penetration Testing, Vulnerability Assessment, Network Security, Ethical Hacking, Endpoint Security, Threat Detection, Security Auditing, Digital Forensics, Burp Suite, Wireshark, OWASP ZAP, GoPhish, Nmap, Kali Linux
AI / ML:	Supervised Learning, SVM, Random Forest, EEG Signal Processing, Feature Engineering, scikit-learn, PsychoPy, Data Preprocessing
Web Dev:	Flask, REST APIs, PostgreSQL, Relational Schema Design, User Authentication, Git/GitHub
DevOps & Tools:	Docker, Linux (Bash/CLI), Git, Raspberry Pi, Arduino IDE, Jira (Agile/Scrum), VS Code
Design:	Canva, Figma, Brand Identity, Social Media Design, UI/UX Prototyping, Layout & Typography
Core Concepts:	TCP/IP Networking, Cryptography, Incident Response, Change Management, IoT Security, Computer Science, Signal Processing

SOFT SKILLS

- **Independent & Self-Directed:** Researched and executed a full ML project with no supervisor assigning daily tasks
- **Cross-Functional Collaborator:** Coordinated across research teams, industry partners, and student organisations simultaneously
- **Fast & Eager Learner:** Entered a new research domain (neuroscience) with no prior background and produced publishable-quality results
- **Clear Communicator:** Writes and presents technical findings; industry liaison experience translating between tech and business audiences
- **Deadline-Driven:** Managed three leadership roles and a research internship concurrently while maintaining academic coursework
- **Detail-Oriented:** Signal preprocessing work demands high precision — a single uncleaned artifact corrupts downstream model accuracy

RESEARCH EXPERIENCE

Neuro-AI Research Intern — *Islamabad, Pakistan*
NeuroImaging Research Group, Air University — *Jun 2025 – Aug 2025*

- **97.71% EEG-based Alzheimer's classification accuracy** — 2 supervised models (SVM + Random Forest) bench-

marked end-to-end in scikit-learn on a self-built signal pipeline; paper in active preparation for peer-reviewed submission
- Produced structured training data from raw multi-channel EEG recordings — 5-band preprocessing pipeline (delta → gamma): noise filtering, artifact removal, and channel-wise feature extraction
- Expanded research scope to **2 neuroimaging modalities** (EEG + fNIRS) — cognitive experiments designed and administered in PsychoPy to capture cross-modal signal data for richer classification features
- Delivered the complete 3-month research lifecycle with **zero supervision** — independently scoped, executed, and documented at an institutional university lab

PROJECTS

Behavioral Anomaly Detection System - *C++ · DSA · Linux · Windows* *2024 – 2025*
- Eliminated manual endpoint log review — C++ behavioral monitor auto-classifies live system activity into **3 threat tiers** using hash-map scoring and priority-queue threshold logic
- Automated **incident response** to system shutdown — 3-stage escalation (low → elevated → critical) validated cross-platform on Linux and Windows with zero code modification

Face Recognition Access Control System - *Python · OpenCV · Raspberry Pi* *2024 – 2025*
- Replaced manual door access with server-free face recognition — Haar Cascade + LBPH on Raspberry Pi automates servo lock decisions in real-time at the network edge
- Integrated the full **3-stage IoT pipeline** (camera → Pi → servo) — built and validated from image capture through servo-controlled lock actuation as a standalone system

Full-Stack Web Applications - *Python · Flask · PostgreSQL · HTML5/CSS3 · Git* *2024 – 2026*
- Delivered **3 authenticated web applications** (Flask + PostgreSQL + HTML/CSS) — each with user session management, REST APIs, and normalized relational schemas; all version-controlled on GitHub
- Reduced query complexity and enforced schema consistency by applying SQL optimization and relational schema modeling across all 3 projects; structured git history maintained throughout

Autonomous Robotics Suite - *Arduino · C++ · PIR / IR / Ultrasonic Sensors* *2024 – 2025*
- **1st Place, GIKI Innovation Summit (GIS), Feb 2025** (20+ competing teams) — Obstacle Avoidance Robot: ultrasonic sensor navigation for autonomous real-time pathfinding
- **1st Place, National Electronics Olympiad (NEO), Dec 2024** (national-level competition) — Line Following Robot: precision IR sensor calibration and motor control for reliable path tracking
- Delivered **3 autonomous robots** within a single academic year — Motion Detection Robot (PIR-sensor, 4-direction tracking logic) completing an obstacle, line, and motion detection suite

AWARDS & ACHIEVEMENTS

- **1st Place** — Obstacle Avoidance Robot, GIKI Innovation Summit (GIS), Feb 2025 (20+ teams)
- **1st Place** — Line Following Robot, National Electronics Olympiad (NEO), Dec 2024 (national-level)
- **Research Paper In Progress** — EEG-Based Alzheimer's Classification, 97.71% accuracy; Air University NeuroImaging Research Group, 2025

LEADERSHIP & VOLUNTEERING

- **Event Management Lead, IEEE–GIKI** (2024–2025): Delivered **zero on-day incidents** for the National Electronics Olympiad — directed full event logistics, applied change management to coordinate volunteer teams and adapt to real-time shifts at a national-scale event
- **Corporate Liaison, SOPHEP–GIKI** (2024–2025): Secured industry participation in **2 annual events** (Career Fair + Industrial Open House) — served as primary liaison between corporate stakeholders and the student body, bridging technical and business requirements
- **Registration Lead, Nexus–GIKI** (2024–Present): Enabled smooth registration for CodeRed by designing participant verification and tracking systems — a KPK-wide competitive programming event drawing university teams from across the province