# Saadia Arshad

Lecturer | Cybersecurity Specialist | Software Project Manager

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## Profile

Cybersecurity Lecturer with expertise in digital forensics, penetration testing, OSINT, threat intelligence, malware analysis, and IS auditing. Experienced in teaching undergraduate and graduate courses, supervising research, and managing software and mobile app projects for academic and administrative use. Previously contributed to digital forensics and SDN security research at the National Centre for Cyber Security, including the development of STIP, a custom SIEM solution. Recognized with multiple awards, including a U.S. Embassy project grant and the Technology Award at Sindh Summit. Currently pursuing a PhD in Cybersecurity with AI.

## Education

**PhD in Computer Science** – NED University of Engineering and Technology
- 2023 - ongoing

**MS in Information Security** – NED University of Engineering and Technology
- 2018-2020

**BS in Software Engineering** – Jinnah University for Women
- 2014-2017

## Experience

**Lecturer** – Department of Computer Science and IT, NED University, (2022 – Present)
- Teach courses in Cyber Laws, Vulnerability Assessment, Reverse Engineering, Information Privacy.
- Supervise undergraduate and postgraduate research projects in cybersecurity and software development.
- Manage departmental software and mobile app projects.
- Conduct cybersecurity awareness seminars and technical workshops.
- Manage departmental clubs.

**Visiting Lecturer** – Department of Computer Science and IT, NED University, (2022)

**Research Associate** – National Centre for Cybersecurity (Internet Security and Quantum Technology Lab), (2021-2022)
- Worked in Digital Forensics Domain
- Worked on Evidence Acquisition and Analysis
- Worked on the Development of SIEM solution
- Mobile Forensics (Android, IOS)
- Social Media Forensics
- Windows Forensics
- Malware Development and
- Reverse Engineering
- Data Privacy Preservation
- SDN Network Setup and Security

**Co-Founder** – TEAM 360, TECH Startup, (2017-2019)
- Developed 3D architectural model and VR-based walkthrough for a real estate project
- Developed Web Applications and Mobile Applications
- Developed Virtual and Augmented Reality based Applications

**Administrative Assistant IT** – Jinnah University for Women ORIC Department (2018 – 2019)

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# Research Interests

- Cybersecurity and AI
- Advanced Digital Forensics & Incident Response (DFIR)
- SIEM, SOC Automation & Threat Hunting
- AI-Driven Malware Analysis & Adversarial Evasion
- OSINT for Cybercrime Investigation
- Ethical Hacking & Vulnerability Assessment
- Secure Software & Mobile Application Development

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# Courses Taught

- Information Privacy and Security (Postgraduate level course)
- Introduction to Cyber Security (Undergraduate level course)
- Vulnerability Assessment and Reverse Engineering (Undergraduate level course)
- Cyber security Laws and Regulations (Undergraduate level course)
- Programming Fundamentals (Undergraduate level course)
- Game Programming (Undergraduate level course)

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# Publications & Conferences

- Arshad S, Arshad J, Khan MM, Parkinson S. "Analysis of security and privacy challenges for DNA-genomics applications and databases." Journal of Biomedical Informatics. (2021) (https://doi.org/10.1016/j.jbi.2021.103815).
- Hyder, M. F., Arshad, S., Arfeen, A., & Fatima, T. "Privacy preserving mobile forensic framework using role-based access control and cryptography". Concurrency and Computation: Practice and Experience (2022) (https://doi.org/10.1002/cpe.7178).
- Hyder MF, Fatima T, Khan SM, Arshad S. Countering crossfire DDoS attacks through moving target defense in SDN networks using OpenFlow traffic modification. Transactions on Emerging Telecommunications Technologies. (2023). (https://doi.org/10.1002/ett.4853).
- Hyder, M. F., Arshad, S., & Fatima, T, "Toward social media forensics through development of iOS analyzers for evidence collection and analysis." Concurrency and Computation: Practice and Experience 36.13 (2024), (https://doi.org/10.1002/cpe.8074).
- Hyder, M.F., Fatima, T. & Arshad, S. Digital forensics framework for intent-based networking over software-defined networks. Telecommun Syst 85, 11–27 (2024). (https://doi.org/10.1007/s11235-023-01064-8 ).
- Hyder, M.F., Fatima, T. & Arshad, S. "Towards adding digital forensics capabilities in software defined networking based moving target defense". Cluster Comput 27, 893–912 (2024). (https://doi.org/10.1007/s10586-023-03990-3).

- Mannan A, Qamar R, Arshad S. "Semi-Automated Approach for Evaluation of Software Defect Management Process using ML Approach". VAWKUM Transactions on Computer Sciences. (2024), (https://doi.org/10.21015/vtcs.v12i1.1722).
- Presented Research Paper written on "Smart Virtual Reality Application" in Multi-Topic Computing Conference (MTCC) by IEEE Karachi. (2017)
- S. Z. Shahid, M. A. Bangash, M. R. Hussain and S. Arshad, "CyberCure - Malware Defense System," 4th International Conference on Innovations in Computer Science (ICONICS), Karachi, Pakistan, (2024), pp. 1-7, (doi: 10.1109/ICONICS64289.2024.10824664).

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## Other Activities

- Faculty Lead Tech Fest and Departmental Student Clubs
- Manage Software Projects (Web Applications and Mobile Applications)
- Active research paper reviewer for IEEE Access, Journal of Cloud Computing, and Transactions on Emerging Telecommunications Technologies

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## Technical Skills

- **Operating Systems:** Windows (Server & Workstation), Linux (Ubuntu, Kali, CentOS), Android, iOS.
- **Digital Forensics & Malware Analysis**: Autopsy, FTK Imager, EnCase, X-Ways Forensics, Belkasoft, Volatility, Rekall, Redline, Cuckoo Sandbox, Magnet AXIOM, Cellebrite UFED (Mobile Forensics).
- **Penetration Testing & Red Teaming**: Kali Linux, Parrot OS, Metasploit, Burp Suite Pro, Nmap, Wireshark, Hydra, Aircrack-ng, Cobalt Strike, BloodHound, Empire, SQLmap, Root Cause Analysis.
- **SIEM, SOC & Threat Hunting**: Splunk Enterprise Security, ELK/Elastic Stack, IBM QRadar, Alien Vault OSSIM, Wazuh, Suricata, Zeek.
- **Information Systems Auditing & Compliance**: COBIT 2019, ISO/IEC 27001, NIST CSF, GDPR, PCI DSS, Nessus, OpenVAS, QualysGuard, NIST Cybersecurity Framework.
- **Development / Database**: Java, Python, C#, Flutter, React Native, MySQL, PostgreSQL, MongoDB, Git/GitHub, Docker, Kubernetes, ONOS, Agile & Scrum methodologies.
- **Designing Tools:** Adobe illustrator, Adobe Photoshop, Canva, Sketch Up, Just in Mind.
- **MS Office:** MS Access, MS Excel, MS PowerPoint, MS Word, MS Project, MS Visio.
- **Others:** Oracle ERP, SAP, Latex, Technical Report writing (TRW) skills, Software Requirement Specification (SRS) report designing, Effective prototyping skills, UML Diagrams.

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## Awards & Recognitions

- High Impact Award from Dean ECE (2025), NED University of Engineering and Technology.
- Won Project Grant from US Embassy and Shaoor Foundation at National Incubation Center, Islamabad.
- Won Technology Award in Sindh Summit 2017.