



Dr. Muhammad Faraz Hyder

Assistant Professor

Department of Software Engineering

HEC Approved PhD Supervisor

NED University of Engineering & Technology

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ACADEMIC QUALIFICATION

- **PhD Computer Systems Engineering** from *NED University of Engineering & Technology*, Karachi, (Cyber Security & Privacy) in 2021.
- **M.Engg. Computer Systems Engineering** from *NED University of Engineering & Technology*, Karachi, (CGPA 3.56) (Cloud Security) in 2014.
- **M.Engg. Telecommunication Engineering** from *NED University of Engineering & Technology*, Karachi, 2010 (CGPA 3.5) in 2010
- **BE Computer & Information Systems Engineering** from *NED University of Engineering & Technology* Karachi, with 77% in 2006.
- HSC from **Adamjee Govt. Science College**, Karachi with A+ Grade (81%) in 2001.
- SSC from **Karachi Academy GBSS**, Karachi with A+ Grade (88%) in 1999.

PROFESSIONAL EXPERIENCE

1. **Assistant Professor (March 2018 till date)**
Department of Software Engineering, NED University of Engineering & Technology
2. **IT Manager, High Performance Computing Centre (July 2012 to March 2018)**
Department of Computer & Information Systems Engineering, NED University of Engineering & Technology
3. **IT Manager, Network Operation Center, (December 2008 to 30th June 2012)**
I.T. Department, NED University of Engineering & Technology
4. **Network Engineer LINKdotNET Pakistan (June 2007 to June 2008)**
5. **Network Engineer WOL Telecom (February 2006 to May 2007)**

RESEARCH PUBLICATIONS

21 Journal publications and 07 Conferences publications.

ORCID : <https://orcid.org/0000-0001-8904-1615>

Google Scholar: <https://scholar.google.com/citations?user=gfDdxPoAAAAJ&hl=en&oi=ao>

Research Gate: <https://www.researchgate.net/profile/Muhammad-Faraz-Hyder/research>

SCOPUS: <https://www.scopus.com/authid/detail.uri?authorId=56524220700>

Journal Publications

- | | |
|----|---|
| 1. | Muhammad Faraz Hyder , Saadia Arshad, and Tasbiha Fatima. "Toward social media forensics through development of iOS analyzers for evidence collection and analysis." <i>Concurrency and Computation: Practice and Experience</i> 36, no. 13 (2024): e8074.
Date of publication: 06th March 2024
doi: https://doi.org/10.1002/cpe.8074
ISSN no:1532-0634/1532-0626
Journal Ranking
IF: 1.5
Scientific Journal Ranking (SJR): Q2 |
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	HJRS Category: X
2.	<p>Zehra, Farzeen, Maha Javed, Muhammad Faraz Hyder, Darakhshan, and Sheikh Muhammad Ahsan Tariq. "Towards Forensics Investigation of Blockchain-based Healthcare Applications." IETE Journal of Research 70, no. 5 (2024): 5053-5065. Date of publication: 04th September 2024 doi: https://doi.org/10.1080/03772063.2023.2226106 ISSN no:0377-2063 / 0974-780X Journal Ranking IF: 1.3 Scientific Journal Ranking (SJR): Q3 HJRS Category: X</p>
3.	<p>Muhammad Faraz Hyder, Syeda Hafsa Ahmed, Mustafa Latif, Kehkashan Aslam, Ata U. Rab, and Mussab T. Siddiqui. "Towards digital forensics investigation of wordpress applications running over Kubernetes." IETE Journal of Research 70, no. 4 (2024): 3856-3871. Date of publication: 23rd August 2024 doi: https://doi.org/10.1080/03772063.2023.2195837 ISSN no: 0377-2063 / 0974-780X Journal Ranking IF: 1.3 Scientific Journal Ranking (SJR): Q3 HJRS Category: X</p>
4.	<p>Ahmed, Hameeza, Muhammad Faraz Hyder, Muhammad Fahim ul Haque, and Paulo Cesar Santos. "Exploring compiler optimization space for control flow obfuscation." Computers & Security 139 (2024): 103704. Date of publication: 9th January 2024 doi: https://doi.org/10.1016/j.cose.2024.103704 ISSN no: 0167-4048 Journal Ranking IF: 4.8 Scientific Journal Ranking (SJR): Q1 HJRS Category: W</p>
5.	<p>Muhammad Faraz Hyder, Tasbiha Fatima, and Saadia Arshad. "Towards adding digital forensics capabilities in software defined networking based moving target defense." Cluster Computing 27, no. 1 (2024): 893-912. Date of publication: 24th March 2023 doi: https://doi.org/10.1007/s10586-023-03990-3 ISSN no: 1573-7543/ 1386-7857 Journal Ranking IF: 3.6 Scientific Journal Ranking (SJR): Q1 HJRS Category: W</p>
6.	<p>Muhammad Faraz Hyder, Tasbiha Fatima, and Saadia Arshad. "Digital forensics framework for intent-based networking over software-defined networks." Telecommunication Systems 85, no. 1 (2024): 11-27. Date of publication: 31st October 2023 doi: https://doi.org/10.1007/s11235-023-01064-8 ISSN no: 1572-9451/ 1018-4864 Journal Ranking IF: 1.7 Scientific Journal Ranking (SJR): Q2 HJRS Category: W</p>
7.	<p>Muhammad Faraz Hyder, Waqas Ahmed, and Maaz Ahmed. "Toward deceiving the intrusion attacks in containerized cloud environment using virtual private cloud-based moving target defense." Concurrency and Computation: Practice and Experience 35, no. 5 (2023): e7549. Date of publication: 28th February 2023</p>

	<p>doi: https://doi.org/10.1002/cpe.7549 ISSN no:1532-0634/1532-0626 Journal Ranking IF: 1.5 Scientific Journal Ranking (SJR): Q2 HJRS Category: X</p>
8.	<p>Khan, Muhammad Mubashir, Muhammad Faraz Hyder, Shariq Mahmood Khan, Junaid Arshad, and Muhammad M. Khan. "Ransomware prevention using moving target defense based approach." Concurrency and Computation: Practice and Experience 35, no. 7 (2023): e7592. Date of publication: 25th March 2023 doi: https://doi.org/10.1002/cpe.7592 ISSN no:1532-0634/1532-0626 Journal Ranking IF: 1.5 Scientific Journal Ranking (SJR): Q2 HJRS Category: X</p>
9.	<p>Muhammad Faraz Hyder, Tasbiha Fatima, Shariq Mahmood Khan, and Saadia Arshad. "Countering crossfire DDoS attacks through moving target defense in SDN networks using OpenFlow traffic modification." Transactions on Emerging Telecommunications Technologies 34, no. 12 (2023): e4853. Date of publication: 10th December 2023 doi: https://doi.org/10.1002/ett.4853 ISSN no: 2161-3915/ 2161-3915 Journal Ranking IF: 2.5 Scientific Journal Ranking (SJR): Q2 HJRS Category: X</p>
10.	<p>Muhammad Faraz Hyder, Saadia Arshad, Asad Arfeen, and Tasbiha Fatima. "Privacy preserving mobile forensic framework using role-based access control and cryptography." Concurrency and Computation: Practice and Experience 34, no. 23 (2022): e7178. Date of publication: 25th October 2022 doi: https://doi.org/10.1002/cpe.7178 ISSN no:1532-0634/1532-0626 Journal Ranking IF: 1.5 Scientific Journal Ranking (SJR): Q2 HJRS Category: X</p>
11.	<p>Muhammad Faraz Hyder, and Tasbiha Fatima. "Towards crossfire distributed denial of service attack protection using intent-based moving target defense over software-defined networking." IEEE Access 9 (2021): 112792-112804. Date of publication: 09th August 2021 doi: https://doi.org/10.1109/ACCESS.2021.3103845 ISSN no: 2169-3536 Journal Ranking IF: 3.4 Scientific Journal Ranking (SJR): Q1 HJRS Category: W</p>
12.	<p>Muhammad Faraz Hyder, and Muhammad Ali Ismail. "Toward domain name system privacy enhancement using intent-based moving target defense framework over software defined networks." Transactions on Emerging Telecommunications Technologies 32, no. 10 (2021): e4318. Date of publication: 07th October 2021 doi: https://doi.org/10.1002/ett.4318 ISSN no: 2161-3915/ 2161-3915 Journal Ranking IF: 2.5</p>

	Scientific Journal Ranking (SJR): Q2 HJRS Category: X
13.	Muhammad Faraz Hyder , and Muhammad Ali Ismail. "Securing control and data planes from reconnaissance attacks using distributed shadow controllers, reactive and proactive approaches." IEEE Access 9 (2021): 21881-21894. Date of publication: 29th January 2021 doi: https://doi.org/10.1109/ACCESS.2021.3055577 ISSN no: 2169-3536 Journal Ranking IF: 3.4 Scientific Journal Ranking (SJR): Q1 HJRS Category: W
14.	Muhammad Faraz Hyder , Muhammad Umer Farooq, Mustafa Latif, Faizan Razi Khan, Abdul Hameed, Noor Qayyum Khan, and M. Ahsan Siddiqui. "Implementing Firewall to Mitigate YOYO Attack on Multi Master Cluster Nodes Using Fail2Ban." International Journal of Computer Science & Network Security 23, no. 2 (2023): 126-132. Date of publication: 20th February, 2023 doi: https://doi.org/10.22937/IJCSNS.2023.23.2.13 ISSN no: 1738-7906 Journal Ranking Emerging Sources Citation Index (ESCI) HJRS Category: Y [HEC Recognized list 2022-2023 [S.No 27329]
15.	Waseemullah, Abdul Karim Kazi, Muhammad Faraz Hyder , and Faraz Abdul Basit. "Animated Game-Based Learning of Data Structures In Professional Education." International Journal of Computer Science & Network Security 22, no. 9 (2022): 1-6. Date of publication: 20th September, 2022 doi: https://doi.org/10.22937/IJCSNS.2022.22.9.1 ISSN no: 1738-7906 Journal Ranking Emerging Sources Citation Index (ESCI) HJRS Category: Y [HEC Recognized list 2022-2023 [S.No 27329]
16.	Muhammad Faraz Hyder , and Muhammad Umer Farooq. "Towards Countering the Insider Reconnaissance Using a Combination of Shuffling and Diversity Moving Target Defense Techniques." Engineering, Technology & Applied Science Research 11, no. 6 (2021): 7745-7749. Date of publication: 1st December, 2021 doi: https://doi.org/10.48084/etasr.4417 ISSN no: 1792-8036/2241-4487 Journal Ranking Emerging Sources Citation Index (ESCI) HJRS Category: Y [HEC Recognized list 2021-2022 [S.No 26894]
17.	Waseemullah, Muhammad Faraz Hyder , M. Andleeb Siddiqui, and Muhammad Mukarram. "TV ad detection using the Base64 encoding technique." Engineering, Technology & Applied Science Research 11, no. 5 (2021): 7605-7609. Date of publication: 1st October, 2021 doi: https://doi.org/10.48084/etasr.4337 ISSN no: 1792-8036/2241-4487 Journal Ranking Emerging Sources Citation Index (ESCI) HJRS Category: Y [HEC Recognized list 2021-2022 [S.No 26894]
18.	Muhammad Faraz Hyder , Muhammad Umer Farooq, Usama Ahmed, and Wajahat Raza. "Towards Enhancing the Endpoint Security using Moving Target Defense (Shuffle-based Approach) in Software Defined Networking." Engineering, Technology & Applied Science Research 11, no. 4 (2021): 7483-7488. Date of publication: 1st August, 2021 doi: https://doi.org/10.48084/etasr.4316

	ISSN no: 1792-8036/2241-4487 Journal Ranking Emerging Sources Citation Index (ESCI) HJRS Category: Y [HEC Recognized list 2021-2022 [S.No 26894]
19.	Muhammad Faraz Hyder , and Syeda Tooba. "Performance Evaluation of RSA-based Secure Cloud Storage Protocol using OpenStack." Engineering, Technology & Applied Science Research 11, no. 4 (2021): 7321-7325. Date of publication: 1st August, 2021 doi: https://doi.org/10.48084/etasr.4220 ISSN no: 1792-8036/2241-4487 Journal Ranking Emerging Sources Citation Index (ESCI) HJRS Category: Y [HEC Recognized list 2021-2022 [S.No 26894]
20.	Muhammad Faraz Hyder , and Muhammad Ali Ismail. "INMTD: Intent-based Moving Target Defense Framework using Software Defined Networks." Engineering, Technology & Applied Science Research 10, no. 1 (2020). Date of publication: 1st February, 2020 doi: https://doi.org/10.48084/etasr.3266 ISSN no: 1792-8036/2241-4487 Journal Ranking Emerging Sources Citation Index (ESCI) HJRS Category: Y [HEC Recognized list 2020-2021 [S.No 26188]
21.	Muhammad Faraz Hyder , and Muhammad Ali Ismail. "Distributed shadow controllers based moving target defense framework for control plane security." International Journal of Advanced Computer Science and Applications 10, no. 12 (2019). Date of publication: 12th December, 2019 doi: https://dx.doi.org/10.14569/IJACSA.2019.0101221 ISSN no: 2158-107X / 2156-5570 Journal Ranking Emerging Sources Citation Index (ESCI) HJRS Category: Y

	Conference Publications
22.	Abrar, Nazia, Muhammad Faraz Hyder , Muhammad Kamran, and Muhammad Mubashir Khan. "Privacy Breaches in Smart Contract due to Solidity Language and its Protection." In Proceedings of the 5th International Conference on Future Networks and Distributed Systems, pp. 803-807. 2021 . doi: https://doi.org/10.1145/3508072.3508225 Date of publication: 13th April 2022
23.	Ahmed, Hameeza, Muhammad Ali Ismail, Muhammad Faraz Hyder , Syed Muhammad Sheraz, and Nida Fouq. "Performance comparison of spark clusters configured conventionally and a cloud service." Procedia Computer Science 82 (2016): 99-106. doi: https://doi.org/10.1016/j.procs.2016.04.014 Date of publication: 30th March 2016
24.	Muhammad Faraz Hyder , M. A. Ismail "Hybrid Trust Model for Enhancing Operational Trust in Cloud Computing", 2016 International Electrical Engineering Congress (IEEC), Karachi, 2016 . doi: Date of publication: 14th May, 2016
25.	Muhammad Faraz Hyder , and Muhammad Ali Ismail. "Application level trust mechanisms for enhancing the operational trust in a cloud." In 2015 International Conference on Cloud Computing (ICCC), pp. 1-6. IEEE, 2015. doi: https://doi.org/10.1109/CLOUDCOMP.2015.7149631

26.	<p><u>Date of publication: 09th July 2015</u></p> <p>Ismail, Muhammad Ali, Muhammad Faraz Hyder, and Hameeza Ahmed. "Openstack cloud performance optimization using linux services." In 2015 International conference on cloud computing (ICCC), pp. 1-4. IEEE, 2015. doi: https://doi.org/10.1109/CLOUDCOMP.2015.7149648 <u>Date of publication: 09th July 2015</u></p>
27.	<p>Ahmed, Hameeza, Muhammad Ali Ismail, and Muhammad Faraz Hyder. "Performance optimization of hadoop cluster using linux services." In 17th IEEE International Multi Topic Conference 2014, pp. 167-172. IEEE, 2014. doi: https://doi.org/10.1109/INMIC.2014.7097331 <u>Date of publication: 30th April 2015</u></p>
28.	<p>Muhammad Faraz Hyder, Muhammad Ali Ismail, and Hameeza Ahmed. "Performance comparison of Hadoop Clusters configured on virtual machines and as a cloud service." In 2014 International Conference on Emerging Technologies (ICET), pp. 60-64. IEEE, 2014. doi: https://doi.org/10.1109/ICET.2014.7021017 <u>Date of publication: 26th January 2015</u></p>

FUNDING RECEIVED

1. Monitoring and Prediction of Cows' Health in Dairy Farms, 5.34 million PKR (Technical collaborator in NRPU approved with FAST University, 2022-2025).
2. Digital Forensics Framework for Software Defined Networks, 1 million PKR, (PI, Awarded by MoST and NED UET, 2022-2024)
3. Moving Target Defense based Security Framework using Software Defined Networks, 3 million PKR (Awarded for PhD by MoST and NED UET, 2018-2020)

AWARDS AND ACHIEVEMENTS

1. Received Best Researcher Award by NED University in 2023.
2. Awarded NEDAASC 2021(NED Alumni Association of Southern California), Best Published Research Award (BPRA) on 6th December 2022 with financial reward of US\$500.
3. Received Best Researcher Award by NED University in 2021 with a financial reward of Rs. 100000/.
4. Award for Publication of high-quality research papers by NED University worth approximately Rs. 600000/.

Co-PI, Digital Forensics Lab, National Center of Cyber Security (June 2021 to June 2022), NED University of Engineering & Technology

- Development of indigenous digital forensics tool.
- Opensource and Commercial tools analysis.
- Research activities in numerous domains of Digital forensics.
- Industry and academia collaboration.
- Mobile Forensics
- Privacy preserving digital forensics.

Vice President, Cloud Security Alliance Pakistan Chapter (August 2021 till date)

- Organization of CSA PAKISTAN SUMMIT 2021

- Cloud Adoption in Pakistan
- Cloud Security Awareness and trainings

JOURNAL REVIEWER/CONFERENCES ORGANIZATION

Served as reviewer for the following journals.:

1. IEEE Access (JCR Impact Factor 4.640).
2. Wiley Transactions on Emerging Telecommunications Technologies (JCR Impact Factor 1.594)
3. Oxford, The Computer Journal (JCR Impact Factor 1.762)
4. Springer Journal of Network and Systems Management (JCR Impact Factor 2.198)
5. Elsevier Computer Standards and Interfaces (JCR Impact Factor 3.72)
6. Springer Cluster Computing (JCR Impact Factor 2.3)
7. Wiley Journal of Systems & Software (JCR Impact Factor 3.5)
8. Springer Signal, Image and Video Processing (JCR Impact Factor 2.3)
9. Science Progress (JCR Impact Factor 2.6)
10. Member Organizing Committee for 2nd International Conference on Innovation in Computer Science and Software Engineering (ICONICS) 2018
11. Member Organizing Committee for (ICONICS) 2022
12. Member Technical Committee (ICONICS) 2024

PROFESSIONAL CERTIFICATIONS

1. **AWS Certified Solutions Architect – Associate** (June 9, 2021-June 09, 2024), (Validation Number 721WXBYDD2Q41XG7)
2. **EC-Council Ethical Hacking Essentials (EHE)**
<https://www.coursera.org/account/accomplishments/verify/ETRHD4WGXJZ7>
3. **EC-Council Digital Forensics Essentials (DFE)**
<https://www.coursera.org/account/accomplishments/verify/HLS43AGZJUVU>
4. **IBM Penetration Testing, Incident Response and Forensics**
<https://www.coursera.org/account/accomplishments/verify/ZG7XHPDJVUUA>
5. **(ISC)² Certified in Cybersecurity**
<https://www.coursera.org/account/accomplishments/specialization/QZ4VJN5ABZ6W>
6. **Ethics of Artificial Intelligence by Politecnico di Milano**
<https://www.coursera.org/account/accomplishments/verify/FSWDPU7T9MYH>
7. **Privacy Law and Data Protection by University of Pennsylvania**
<https://www.coursera.org/account/accomplishments/verify/KM7QHF68Q6Q7>

ACADEMIC PROFILE

Assistant Professor (March 2018 till date)

Department of Software Engineering, NED University of Engineering & Technology

- **PhD Supervision**
 1. Cloud Network Security Enhancement using Intent-based Networking, **2023-ongoing.**
 2. Improving Cloud Resilience Through Early Fault Prediction Using Log Analysis, **2022-ongoing.**
 3. Digital Forensics for Software Defined Networks using Machine Learning, **2022-ongoing.**
- **MS Thesis Supervision**
 1. Forensics investigation of container-based cloud environment, **2024-ongoing.**
 2. Secure DevOps system for IoT based Animal Health Monitoring System, **2024-ongoing.**
 3. Analysis of Control Plane Logs for Digital Forensics in Software Defined Networks, **2023.**

4. Forensic Investigation of Microservices, **2023.**
 5. Privacy aware digital forensics framework for IoT, **2023.**
 6. A Verifiable Digital solution for Supply chain network using Block chain technologies, **2022.**
 7. Blockchain-based Decentralized Auditing Infrastructure for external services, **2022.**
 8. Privacy-Preserving Scheme for Smart Contracts, **2022.**
 9. Application of Digital Forensic for Moving Target Defense in Containerized Environment. **2021.**
 10. Ransomware prevention using Moving Target Defense Based Framework, **2021.**
 11. Protection of Containerized Applications During Live Migration in a Multi-cloud Environment, **2021.**
 12. A framework for Crossfire DDoS Protection using SDN and NFV, **2020.**
 13. A Framework for the protection of Intrusion attacks in Cloud Environment., **2020.**
 14. Enhancement in Homomorphic Encryption Scheme for Cloud Data Security, **2019.**
- **Final Year Design Project Supervision**
 1. **ScholarSphere** – “Exploring International Research Opportunities”
 2. **X-Secure:** Ransomware Detection and Prevention
 3. **AVdroid**-Android Malware Detection
 4. **Meal Proof-** A blockchain based Application for Tracing Food Industry Supply chain
 5. **Try on the go** – Artificial Intelligence and Computer vision powered virtual try on for e-commerce.
 6. An AI Based Applicant Tracking System for HR
 7. Kernel Optimization For NFV.
 8. Botnet Detection in Cloud Using Artificial Immune System.
 9. Block Chain Architecture on Xeon Phi.
 10. Secured and Optimized Solution for Accessing Clouds.
 11. Optimized Big Data Processing Using SDN.
 12. Stream Processing for The Detection of Intrusions Using SDN.
 13. Docker Engine Services in Android Operating Systems.
 14. Firewall as a service (Soft Firewall).
 15. Deployment of Secure SDN for Cloud.
 16. **PlaniT:** Online Tour Planning Application.
 - **Teaching Experience**
 - **PhD level**
 - [CS-634] Advanced Network Management.
 - [CT-658] Cloud Computing
 - [CT-667] Advanced Intrusion Detection Technique
 - [CT-677] Cloud Forensics
 - [CT-678] Advanced Cloud Security
 - [CT-668] Internet of Things Security and Privacy
 - [CT-676] Cyber Intelligence
 - [CT-672] Advanced Topics in Network Security
 - **Masters level**
 - [CT-569] Virtualization and Cloud Computing.
 - [CT-555] Cloud Security
 - [CS-564] Cloud Computing.
 - [CT-509] Distributed Systems.
 - [CS-523] Routing and Switching.
 - **Bachelors level**
 - [SE-489] Cloud Computing
 - [SE-206] Web Engineering
 - [CT-460] Network & Information Security
 - [CS-426] Computer Systems Security

- [CS-413] Internet Computing
- [CS-318] Computer Communication Networks
- [CS-352] Digital Communication Systems
- [CS-303] Operating Systems

Administrative Responsibilities

Department of Software Engineering, NED University of Engineering & Technology

- OBE Coordinator (September 2024-till date)
- Member Curriculum Review Committee (February 2025-till date)
- Class Advisor (October 2022- August 2024)
- Member Departmental Board of Studies
- Member Departmental M.Engg Admission Committee.
- Member Departmental FYDP Committee.
- Team member for PhD Self-assessment Report (SAR).
- Final year design project coordinator.
- Curriculum designing and up-gradation.
- Lab Manuals designing and up-gradation.
- Teaching at undergraduate and postgraduate levels.

IT Manager, High Performance Computing Centre (HPCC) (July 2012 to March 2018)

Department of Computer & Information Systems Engineering

NED University of Engineering & Technology

Technical Experience

- Managing the IT Infrastructure and services of the Department.
- Managing the Data Centre Operations of HPCC.
- Deployment and Management of Cloud services using Open Source solutions (OpenStack based cloud).
- Deployment of different SDN solutions like OpenVswitch, OpenDaylight, Ray Faucet Controllers.
- Deployment and Management of Linux from Scratch (LFS) systems.
- Deployment and Management of different Engineering Software like Matlab, Cadence, Fluent etc.
- Deployment and Management of Virtualization Solutions using VMware, Microsoft Hyper V, KVM etc.
- Deployment and Management of Docker/Container Technology
- Deployment and Management of Puppet and Chef tools for IT Automation.
- Deployment and management of Different Cluster Computing Solutions like Hadoop Clusters, Apache Spark Clusters etc
- Administration and deployment of MPI, OpenMPI, CUDA, GNU compilers, math libraries.
- Deployment and administration of GPGPU systems, CUDA upgrades.
- Amazon Web Services (AWS). Deployment of EC2 instances. Working with different services like RDS, Elastic Beanstalk, Cloud watch, SES and S3 etc.
- Deployment of Different Penetration testing tools for software penetration testing.
- Datacenter operations, WAN Connectivity, Network & Information Security, WiFi deployment.
- Providing level-II Network and System support.
- Deployment of NAGIOS NMS. Monitoring of different servers and service through it.
- Deployment of different software like Git repositories, SVN etc.
- Virtualization solutions implementation using HyperV, VMware.
- Managing the IT Infrastructure and services of the Department.
- Deployment of Cloud using OpenStack in the department. Deployment of Controller, Compute, Network, block nodes, proxy and storage nodes. Launching different instances. Monitoring of instances. Security hardening of the deployed cloud.
- Managing the High Performance Computing Center (HPCC) of NED University. Deployment of Cloud services using Open Source/Commercial solutions. Deployment of different Engineering related software.
- Deployment and Management of Hadoop Cluster for Big Data Processing.

- Implementation of SDN solutions using OpenVSwitch and OpenDaylight controller.
- Implementation of VMware virtualization solutions.
- Managing the HPC system in the research labs of Department of Computer Engineering
- Administration of different large scale Linux clusters, servers and workstations having different OS like Ubuntu, Debian, Redhat, Fedora etc.
- Deployment and administration of GPGPU systems, CUDA upgrades.
- IT/System Administration Automation through Puppet Labs.
- Network Deployment using Cisco, 3 COM devices like Routers, Switches, and Firewall etc.
- Administration and deployment of MPI, OpenMP, CUDA, GNU compilers, math libraries.
- Coordination with vendor regarding hardware problems, installs firmware or software patches as necessary.
- Deployment of critical OS patches across workstations and Linux clusters.
- Designing and deployment of network/information security policy for the department's network. Comprehensive knowledge of PKI, Security Algorithms, ISO/IEC 27001:2005.
- Guiding other departments about the security recommendation, proactive counter measures against security vulnerabilities.
- WiFi Deployment within the department.
- Monitoring of the network through different NMS like Cacti, SolarWinds, NAGIOS.
- Windows Server 2008 Administration, Deployment of Active Directory, Group Policy Management.
- OS hardening by applying security patches and other best OS level security policies.
- Deployment and support of the certification process.
- MS Exchange 2010 deployment and maintenance.
- Linux Server Administration for different services like Squid, Web, FTP, NTP, DHCP, VPN and Email etc.
- SUN Server Administration.
- Department's Website Management.
- Supporting the faculty and the students of the Department in their Research Activities especially in the areas of Operating Systems, Data Networks, Routing & Switching, IPv6, MPLS, Network Security, High Performance Computing and Cloud Computing.
- Deployment of Linux based Print Server (CUPS+PYKOTA)
- Managing a team of 15 members for ICT operations.
- Deployment of an SDN using OpenvSwitch. Security management, QoS, Monitoring.
- Amazon Cloud Computing. Deployment of EC2 instances. Working with different services like RDS, Elastic Beanstalk, Cloud watch and S3 etc.
- Deployment of Cloud On Microsoft Azure, RackSpace Cloud.
- Deployment of **Debian Linux**. Installation of software through Repository and implementing best security practices on the server.
- **OpenVPN Server deployment.** Generation of client and server's site certificates for securely connecting the clients to server.
- Installation and configuration of **Shorewall firewall**. Defining rules for securing the server
- **Apache, Nginx, Apache Tomcat** Server Deployment. Virtual hosting and PHP deployment. SSL installation and deployment of secure websites. **APC PHP** and **Memcached** deployment.
- **WordPress, Joomla, Magento, Drupal Server** installation and configuration. Up-gradation of versions and Multisite installation on these platforms. Plugin updates and Site Migrations.
- Installation and configuration of **MySQL server**. Optimizing its performance as per the requirement. Management of databases.
- **ZABBIX NMS** installation and configuration. Monitoring of services and network through it.
- **HAProxy Deployment.** Load balancing through it for high availability.
- **Moodle, MediaWiki**, Installation and configuration.
- Deployment of **Alfresco**.
- **Puppet Labs, Mcollective.** Basic idea about automations through these tools.

IT Manager Network Operation Center, I.T. Department NED University of Engg & Tech Karachi (December 2008 to 30th June 2012)

- Configured and maintained Core devices like Cisco Routers and Switches, Cisco PIX firewall, Cisco ASA etc.
- Configured and maintained different servers like Web servers, DNS server, Squid cache, FTP, RRAS, DHCP, NTP, Samba, etc.
- Coordinating with vendors and service providers for technical support
- Configured and maintained MacAfee Email & Web security 3100 device.
- Maintaining network diagram with complete details of WAN, LAN and Data Center.
- Supporting team in troubleshooting network related problems that occur on daily basis.
- Configured and maintained TekRADIUS; RADIUS software for the WiFi network, Access points.
- Implementation of AAA (Authentication, Authorization & Accounting) services for WiFi Clients.
- Periodic Data Backups through HP storage solution (HP storage works).
- Video Conference Management.
- Ensuring network equipments configurations are uniform and standard.
- Implementing changes in network topology as per policy and through procedures.
- To perform capacity planning to ensure best utilization of network resources and to proactively identify future requirements.
- Configuration and implementation of Spanning Tree protocol
- Ensuring maximum uptime of NEDUET network
- High Performance Computing (HPC). Configuration & Implementation of Linux based Clusters. Running different Engineering Software like Cadence(Electronic Simulation Software), Matlab
- Budgeting and evaluating network infrastructure and new hardware at university level.
- Collaboration and technical support to all other IT sections and service of University like Information System Operations, Web development, High Performance Computing Center, Examination and Finance ERP.
- Managing team of seven members for the Network Operation Centre (NOC)

Network Engineer LINKdotNET Pakistan (June 2007 to June 2008)

Network Engineer WOL Telecom (February 2006 to May 2007)

- Configured and maintained Alteon Layer 4 Switches, Implementation of ISP's Network Security policies, controlling its traffic flow, by making rules/policies on this device and making appropriate routing.
- Configured and maintained ISP Core Routers. Controlling of Inbound and Outbound traffic with help of Route Maps and Acls. Basic implementation of BGP peering between ISP Router and their upstream provider.
- Provisioning of routers, switches, DSLAMs, BRAS and access servers.
- Network expansion/upgrade, opening of new POPs, replacement and upgrade of hardware.
- Configured and maintained MAX TNT Access Servers. Basic configuration of these devices like configuration for client authentication and accounting through Radius Servers, Syslog configuration for Monitoring of Access Servers Status.
- Configured and maintained ATM Switches, BRAS, DSLAM, MALC and DSL Modems. Configuration on these devices for clients DSL's configuration and their bandwidth management.
- Configured and maintained Packeteer, a device used for bandwidth management. Configuration of rules for bandwidth management of Wireless Internet and Data Clients.
- Configured and maintained Linux Email Servers. Configuration of SMTP, POP and VPOP, Webmail Servers. Configuration of Mail Scanner, software used of spam controlling and RBLs.
- Configured and maintained Squid Proxy Servers and DNS Servers.
- Configured and maintained Linux MRTG Servers, Apache Server. Configuration of httpd file, virtual hosting.
- Monitoring of ISP Internet and DSL Network and Devices through NMS (Host Monitor).
- Configured and maintained SQL based Billing Servers and Windows based RADIUS Servers.
- Implementing changes in network topology.

RESEARCH INTERESTS

- Cyber Security, Privacy Engineering, Software Defined Networking (SDN)
- Cloud Computing, High Performance computing, Big Data, and Cluster Computing.
- Network & Information Security, Cloud computing Security, Privacy and Trust in Cloud Computing, Big Data Security,
- Blockchain
- Semantic Web Security and Privacy
- Virtualizations, Hypervisor, Open Container
- Trusted Computing, Computer Networks, Data Centre Operations, MPLS, IPv6, VoIP, Operating Systems, Open Source solutions.
- Computer Communication Networks,

TECHNICAL SKILLS

Routers, Switches, Broadband Remote Access Servers, Remote Access Servers

- Cisco Boxes (3800, 7200, 7500 Series)
- Cisco Switches(6500,4500, 2960,)
- Lucent MAX TNT Remote Access Servers, Cisco Access servers.
- Cisco, 3COM switches for high speed Ethernet networks.
- Broadband RAS (UT Star and Redback)

Data Communication Infrastructures & Network/System Software

- Layer 4 switches (Alteon AD3)
- DSLAMs (Paradyne), DSL Modems, DSLAM Aggregators (MALC)
- ATM Switches (ASC), Packeteer
- Cisco PIX Firewall, Cisco ASA, Cisco VPN concentrator
- hp and ALCON Access Points
- hp, IBM Server machines
- Different NMS System like Cacti, SolarWinds,
- Asterisk, Soft phones.
- Wireshark(Ethereal)
- MRTG/PRTG, Syslog,
- Alcatel IP Phones
- XAMPP/LAMPP
- VMware Workstation, VMware vSphere
- Open Source Email and Calendar Groupware software like VMware Zimbra, Horde, AtMail.
- Webmail software like SquirrelMail, Roundcube.
- MPLS operation and troubleshooting. MPLS L2, L3 VPN, MPLS-TE, Quality of Services (QoS).
- Cloud Computing. IaaS, PaaS, SaaS.
- Windows 2008 Server Administration. Active Directory deployment.

PROJECTS

As IT Manager, High Performance Computing Centre, NED University

- Final year project supervision
- Deployment of WiFi in HPCC
- Deployment of Big Data Servers for research
- Deployment of different engineering software as cloud service

As IT Manager, Dept of Computer Engineering NED University

- Deployment of Cloud Computing Solutions.
- Supervised undergraduate level projects like SDN Deployment, MPLS, IPv6 Deployment, Asterisk Server Deployment etc.

- Up-gradation of Department Network Infrastructure.
- Deployment of different Open source solutions and thus saving substantial financial assets of the department.

As IT Manager Network Operation Centre, IT Department NED University

- Responsible for carrying out up gradations & new deployment in Core ISP Network.
- Maintained IP backbone of the network and intercampus and intra campus connectivity.
- Part of the team for the deployment of IT projects by Higher Education Commission of Pakistan in NED UET.
- Configured Policy based routing to use Satellite link in case of Fiber optic media problem.
- Configured and maintained WiFi network.
- Responsible for maintaining the computer network infrastructure and information network security for the university.
- Installing and Configuring VPN 3000 Concentrator, Remote Access VPN through Pre-Share and Digital Certificates as well as configuring Firewall features.
- Applied both in bound and outbound access-lists on PIX firewalls as well as static, conduit statements and created NAT pools for private IP addresses.
- Management and configuration of NEDUET Metro LAN Project.
- Implementation of AAA service for WiFi Clients. The Captive portal solution is implanted through pfSense
- Deployment of NPM node for the PingER (Ping end-to-end reporting) project.
- Security hardening of typical Linux servers for commercial operations
- Deployment of Open Source Email and Calendar Groupware software VMware Zimbra, VMware Zimbra Desktop.
- RAID Configuration and management on Servers.
- Maintenance of infrastructure equipment such as UPS, and KVM console Panel.
- Maintenance of ASHRAE standards for Datacom equipments.
- Configuration and deployment of KASPERSKY Antivirus Server solution.
- Configuration and deployment of LON-CAPA (the free open source Distributed Learning Content Management and Assessment System)
- Analyze and resolves technical problems for established network.
- Email Server Migration from sendmail and squiremail based server to **VMware Zimbra** Server. This includes user accounts, passwords, address books and email boxes migration

As Network Engineer WOL Telecom and LINKdotNET Pakistan

- Core member of the team for the Convergence of WOL Telecom & Dancom Core Network for LINKdotNET.
- Configuration and implementation of IP Routing in the network of WOL Telecom and LINKdotNET Pakistan.
- Responsible for carrying out up gradations & new deployment in Core ISP Network using Multi-vendor devices such as Cisco, Zhone/Paradyne, Redback & ASC.
- Configure & Test Multi-vendor devices using Protocols such as OSPF, BGP, Frame-relay, ATM.
- Provide level II support for troubleshooting of 100+ enterprise customers' issues.
- Provisioning of media which include E1, E3, and STM1 for interconnecting network devices for both IP and ATM networks.
- Act as a focal point for complex ISP's Core Network problem resolution.
- Connectivity of ATM links/branches of multinational companies, banks other large enterprises, using ATM Network.
- Deployment and configuration of DSLAM at different exchanges
- Actively follow the global issue of spam. Implemented Mail scanner solution in WOL Telecom and NED UET for spam control.

PROFESSIONAL MEMBERSHIPS

- PAKISTAN ENGINEERING COUNCIL (COMP/3699).

SUMMARY OF OPERATING SYSTEMS /PROGRAMMING LANGUAGES

- Project Development Experience in C/C++
- Project Development Experience in Visual Basic 6.0
- Microsoft Windows 98/2000/XP/2003/10/11, 2008, Red Hat Enterprise Linux 5, RHEL 6, Fedora, SUSE Linux, Ubuntu.
- Labview, Oracle 9i, Electronics Workbench, Multisim, Matlab , Microsoft Office, Visio.

ADDITIONAL COURSES ATTENDED

- Cisco Certified Network Professional (CCNP) Training, 2010.
- Cisco Certified Network Associate (CCNA) training from CTTC in 2004.
- Red Hat Linux administration course from OnWire in 2003.

COMMUNICATION SKILLS

- Excellent written and spoken skills in English and Urdu.

CONFERENCES

- **1st International Electrical Engineering Congress** on Innovation and Advances in Electrical Engineering, 2016.
- **IEEE 10th International Conference on Emerging Technologies 2014 (ICET 2014)**, (FAST-NU), Islamabad, Pakistan December 8-9, 2014.
- **2014 IEEE 17th International Multi Topic Conference (INMIC 2014)**, BAHRIA University Karachi, Pakistan December 8-10, 2014.
- **National Information Security Conference 2014 (NISC-14)**, 28th March, 2014, NUST Karachi Pakistan.
- **SANOG 20 (South Asian Network Operator Group)** held 10th July to 16th August 2012 Karachi Pakistan, MPLS Network Design and Deployment Workshop (**Fellowship awarded for the Event**).
- **TeleCON 2012**, April 19, 2012, Karachi, Pakistan.
- **First National Conference on Ubiquitous Computing**. April 04,2012, Karachi, Pakistan.
- **SANOG 8 (South Asian Network Operator Group)** held 27th July to 4th August, 2006.

HONOURS & ACTIVITIES

- Participated in Sindh HEC Research & Technology Showcase 2022.
- Development of SAR as per HEC Guidelines
- Workshop on Course Design
- Teaching Case Studies
- Training on AIS
- OBE System Framework
- Online Evaluation & Assessment of Students
- Management of Online Classes (Operation + Security)
- Importance of Feedback Analysis