

ABDUL SAMIM

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EDUCATION

Master of Engineering (IT Convergence Engineering)

Sept. 2025 – Ongoing

Kumoh National Institute of Technology Gumi, Republic of Korea

Bachelor of Engineering (Electronics Engineering)

Fall. 2018 - Fall. 2022

Quaid-e-Awam University of Engineering Science & Technology, Sindh, Pakistan.

RESEARCH INTEREST

- Integration of AI/ML and Blockchain/PureChain in Communication Networks
- Non-Terrestrial Networks (NTN) & Multi-Orbit LEO Satellite Communication
- Next-Generation Wireless Communication Systems (5G/6G)
- AI-Driven Mobility, Handover Management, and Load Balancing
- Real-Time Signal Processing and Edge Intelligence

RESEARCH EXPERIENCE

Graduate Assistant

Sept. 2025 – Ongoing

Kumoh National Institute of Technology

Gumi, Republic of Korea

- Conducting research on AI/ML–Blockchain integration for secure and intelligent multi-orbit LEO satellite communication in NTN–6G systems.
- Design and implement blockchain-enabled consensus mechanisms for trust management and resource allocation in dynamic satellite constellations and TN-6G integration.
- Developing AI-driven mobility, handover, and load balancing schemes with blockchain-supported coordination for seamless multi-layer satellite networks.
- Evaluate hybrid AI–Blockchain architectures for secure data offloading, consensus-aware routing, and scalable satellite network management.

Research Assistant

Sept. 2024 – Aug.2025

Inha University

Incheon, Republic of Korea

- Investigated mobility management, seamless handover, and load balancing in dynamic satellite constellations using reinforcement learning (PMA-PPO, Q-Learning).
- Conducted advanced research on AI-driven Non-Terrestrial Networks (NTN) with a focus on multi-orbit LEO satellite integration with 6G terrestrial systems.
- Developed and evaluated CNN-LSTM based adaptive user association architecture for real-time communication in LEO networks.
- Published and presented at leading conferences including KICS 2025 and contributed to journal publications on AI-based NTN routing and resource allocation.

Undergraduate Research Assistant

2018. 2022

Quaid-e-Awam University of Engineering Science & Technology

Nawabshah Sindh, Pakistan

- **Automatic Solar Based Water Heating System through Convex Lenses (FYP)**
 - This project developed a solar water heating system using convex lens arrays to focus sunlight onto a water tank, enhancing heat absorption efficiency. The design eliminates reliance on electricity or gas by leveraging concentrated solar radiation as the sole energy source for water heating.

- **Dipole Antenna:** Designed a multi-element dipole to enhance directional gain.
- **E-Class Amplifier Loudspeaker:** Built a high-efficiency loudspeaker using Class-E amplifier circuitry.
- **Robotic Arm:** Developed a programmable robotic arm for precise pick-and-place operations.
- **Fast Mobile Charger:** Created a portable charger optimized for rapid mobile device charging.
- **Transistor Switch Circuit:** Implemented ON/OFF control using transistors in logic-level circuits.
- **AM/FM Transmitter (555 Timer):** Built analog transmitter circuits leveraging the 555 timer IC.

PUBLICATIONS

1. **Abdul Samim**, Attiq Ur Rehman, and KyungHi Chang, "PMA-PPO Enabled SNR-Aware Load-Balanced Handover Management for Dual-Layer LEO Satellite in 6G Networks," *IEEE Transactions on Network and Service Management*, Submitted, 2025.
2. Sara Sualiheen, Attiq Ur Rehman, **Abdul Samim**, and KyungHi Chang, "AI 기반 6G 비지상 네트워크의 기술 발전 동향," *정보와 통신, 한국통신학회지*, vol. –, no. –, June 2025, pp. 1–12.
3. **Abdul Samim**, Attiq Ur Rehman, Sara Sualiheen, and KyungHi Chang, "AI at the Core of 6G: Integrating Multi-Orbit LEO Satellites and Terrestrial Networks," 2025 Winter Conference of the Korean Institute of Communications and Information Sciences (KICS), Seoul, South Korea, 2025, pp. 1–6.
4. **Abdul Samim**, Narjis and A. R. Khatri, "Automatic Solar Based Water Heating System Through Convex Lenses" 2023^{4th} *International Conference on Computing, Mathematics and Engineering Technologies (iCoMET)*, Sukkur, Pakistan, 2023, pp. 1-6, doi: 10.1109/iCoMET57998.2023.10099173.

WORKING EXPERIENCE

1. **Pakistan Telecommunication Company Limited Quetta Pakistan** **Feb-2024 to July-2024**
 - Role at PTCL as an Intern Engineer in the Operations/Transportation Department.
 - Responsibilities included managing Network Management Systems (NMS), MPLS (Multi-Protocol Label Switching), and OTN (Optical Transmission Network). I gained hands-on experience with Fiber Home's MPLS-based NMS and explored OTN-based platforms from Nokia and Huawei. Also acquired practical exposure to ZTE's DWDM (Dense Wavelength Division Multiplexing) technology. This six-month paid Graduate Internship Trainee program was approved by the Pakistan Engineering Council (PEC).
2. **Micro Electronics International Islamabad Pakistan** **Jan-2023-Jan 2024**

Served as a Technical Wireless Engineer with the following responsibilities:

 - Conducting technical training sessions.
 - Offering wireless solutions, long-haul communication, and voice gateway solutions.
 - Installing CCTV cameras, microwave links, and connections.
 - Deploying HF/VHF/UHF & IP radios, repeaters, and configuring radios with routers.
 - Setting up Dispatcher Server and Client systems for radio location tracking.
 - Managing equipment inventory, segregation, and distribution.
3. **Quetta Electric Power Supply Company Limited Quetta Pakistan** **April 2021-June 2021**
 - I. **S.E Central Circle**
 - During my internship, I gained insights into the distribution mechanism of power to both local and commercial sectors. Additionally, I acquired skills in analyzing the load of both Low-Tension Voltage (LTV) and High-Tension Voltage (HTV) systems.
 - II. **Principal RTC (Regional Training Centre)**
 - Prior to my internship at Principal RTC, I acquired knowledge about controlling digital systems. Additionally, I conducted surveys of power plants and analyzed the process of power generation and its distribution to commercial and domestic areas.
 - III. **Project Director Construction**
 - Under this department, I conducted surveys alongside senior engineers in both urban and rural areas to facilitate the installation of distribution towers.
 - IV. **P.D GSC**

- During my tenure at QESCO, I served as an intern technical engineer. My responsibilities included surveying construction areas and addressing their technical requirements.

V. XEN SS&T Division GSO & Dy Manager PDC

- This is the administrative section of QESCO where I collaborated with the administration officer to manage official meetings and contracts.

4. Workshop of PLC Based Automation

Quest Nawabshah

- During my university studies, I participated in a Seminar Workshop where I gained knowledge and hands-on experience in PLC (Programmable Logic Controller) Based Automation. I learned about its functionalities and observed its role in industrial settings, including its operations and significance in various industries.

CO-CURRICULAR ACTIVITIES

- Organized sports and social events.
- Actively engaged in social activities with high motivation.
- Enthusiastic participant in seminars, lecture programs, and conferences.

ACHIEVEMENT'S

- Nominated in Pak Turk ISMO (Inter School Math Olympiads) and secured 3rd position.
- Attained 1st Position in HSSC at the District Level, received the Benazir Bhutto Scholarship Prize for academic excellence.
- Selected for a 4-year Merit Scholarship for Engineering Studies by the Directorate of Higher Education Commission.
- Secured First Position and received the First Prize in Final Year Project Research at both the National Incubation Centre and University Exhibition.
- Thesis selected for research publication in IEEE ICOMET IBA Sukkur International Conference held in March 2023.

REFERENCES

References Will be Provided on Demand.