Aamina Binte Khurram

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Education

National University of Sciences and Technology, Islamabad June 2025
Bachelor of Engineering in Software Engineering *CGPA: 3.87/4.0, Class Rank:* 3/ $\sim$ 100

Research Experience

Information Processing and Transmission Lab, NUST, Islamabad | *Research Intern* May 2024 – Present

- Simulated various D2D and NOMA network scenarios to create open-source datasets mapping channel gains to optimal transmit powers
- Implemented multiple LLM adaptation techniques for transmit power optimization, including RAG, fine-tuning and few-shot learning (GitHub)
- Published findings on using LLMs for resource allocation in the IEEE International Conference on Communications, 2025

Communication Networks Lab, University of Victoria, Victoria | *Research Intern* June 2024 – September 2024

- Conducted extensive literature review on cellular vehicle-to-vehicle communication, focusing on 4G/5G technologies, semi-persistent scheduling, and related MAC layer protocols
- Simulated a basic vehicle-to-vehicle communication scenario to understand key concepts and validate foundational protocols
- Supported the research team by synthesizing findings and providing insights into potential areas for further investigation

Optical Networks and Technologies Lab, NUST Islamabad | *Research Intern* June 2023 – September 2023

- Coded a ground-up, real-world simulation of integrated satellite-terrestrial 6G networks with 100+ nodes and real-world traffic
- Implemented a custom virtual network embedding algorithm and analysed performance of network in offline and online traffic scenarios, demonstrating the efficacy of integrated networks(average embedding success rate improvement of 110.8% over non-integrated networks)
- Developed an auto-encoder-based signal reconstruction mechanism for free-space optical communication

High Performance Computing Lab, NUST Islamabad | *Research Intern* July 2022 – September 2022

- Developed an IoT-enabled smart parking management framework to test the proposed parking-management algorithm in urban areas(proposed algorithm resulted in 35% shorter parking-search times)
- Applied deep learning techniques for time-series forecasting of parking data

Industry Experience

Red Buffer, Islamabad | *Machine Learning Engineer* June 2025 – Present

- Developed an agentic AI system that acts as the first point of contact for patients, extracting their clinical history for physicians

Skills

- **Languages:** Python, C/C++, Java, MATLAB
- **Research skills:** data collection, data analysis, data visualisation, algorithm design, literature review, LaTeX, technical writing
- **Version control:** Git/GitHub/GitLab
- **Libraries/Tools/Frameworks:** NetworkX, AnyLogic, Pandas, NumPy, TensorFlow, PyTorch, Laravel, MERN, Livekit

Publications

- **"Fine-Tuning Large Language Models for Optimal Resource Management in D2D Wireless Networks"**
  Accepted for publication at the *2025 IEEE International Conference on Communications (ICC)*
- **"Resolving Community Parking Issues: An IoT-Enabled Statistical and Deep Learning Approach for Enhanced Urban Parking Management"**
  2024 IEEE International Conference on Frontiers of Information Technology (FIT)
- **"Enhancing Access to Proof of Registration (PoR) Cards for Afghan Refugees in Pakistan" (Abstract)**
  CHI 2025 HCI Across Borders: Building a Collective Vision for the Future Workshop

Awards and Honors

- Mitacs Globalink Research Internship (University of Victoria, Victoria - 2024)
- Dean's Honor List/GPA-based scholarship (NUST, Islamabad - 2022 to 2025)
- Rector's gold medal for best final year project in Software Engineering department (NUST, Islamabad - 2025)
- High achievers' gold medal for significant academic achievement (NUST, Islamabad - January, 2025)

Volunteer and Leadership Experience

IEEE PACRIM 2024 | *Volunteer(August, 2024)*
* Assisted the organisation committee of the IEEE Pacific Rim Conference on Communications, Computers and Signal Processing held at the University of Victoria, Victoria, Canada in procedural and logistical tasks, including registration and paper presentation and keynote sessions

Mahwari Justice | *Data and Resource Management Volunteer(2023 – 2024)*
* Responsible for organising data-management related activities for a non-profit working to assist menstruating women in disaster-stricken areas

NUST Archery Club | *Director Publications(2023 – 2024)*
* Tasked with overlooking and coordinating all activities of the Publications team, which is responsible for producing all written content of the club

NUST Community Service Club | *Project Head(2022 – 2023)*
* Carried out community engagement and outreach activities to help empower economically disadvantaged women

ACM NUST Chapter | *Editorial Board Member(2021 – 2022)*
* Responsible for covering club events