Abida Sultana

abidas@vt.edu | +1 (225) 802-8454 | linkedin.com/in/abida-sultana-7053891bb

Education

Master of Science , Electrical Engineering , *CGPA: 3.50/4.00* 01/2023- 05/2025
Virginia Polytechnic Institute and State University, VA, USA

Bachelor of Science
Chittagong University of Engineering and Technology, Bangladesh 02/2016- 04/2021
Electronics and Telecommunications Engineering, *CGPA: 3.50/4.00*

Research Experience

Graduate Research Assistant 01/ 2023 – 05/2025
Commonwealth Cyber Initiative xG Testbed, Arlington, VA

- Conducting research on Near-Real-Time RAN Intelligent Controllers, focusing on Software Defined Radio, radio access, and core networks.
- Deployed Near Real-Time RIC on the CCI xG testbed for multiple RAN nodes using the E2 interface.
- Implemented Software Radio Suite Radio Access Network (srsRAN) for end-to-end 4G LTE and Open5GS core with COTS UE integration and performed KPI analysis.
- Developed custom xapp for resource allocation and implemented conflict detection and mitigation mechanism on ORAN platform in SDR-based testbed.

Publications

- **"End-to-End O-RAN Control-Loop for Radio Resource Allocation in SDR-Based 5G Network"** *MILCOM 2023 - IEEE Military Communications Conference (MILCOM)* (Co-author) (Best Demo Award).
- **"Deep Learning-Based Uplink Power Allocation in Multi-Radio Dual Connectivity Heterogeneous Wireless Networks".** *IEEE International Symposium on Personal, Indoor, and Mobile Radio Communications, 2024, Valencia, Spain* (Co-author).
- **"A Software-Defined Radio-Based O-RAN Platform for xApp Conflict Detection and Mitigation"** *MILCOM 2024 - IEEE Military Communications Conference (MILCOM)* (First-author).
- **"Experimental evaluation of xApp Conflict Mitigation Framework in O-RAN: Insights from Testbed deployment in OTIC"** INFOCOM 2025 NG-OPERA (First-author).

Skills

- **Languages:** Python, C, HTML/CSS, LaTeX.
- **Cellular Technologies**: O-RAN, srsRAN, SDR, 4G LTE, 5G.
- **Simulation Tools:** MATLAB, NS3 Simulator, OMNET++, Tableau, CST Studio Suite.
- **Tools and Platforms:** Linux, Docker, Kubernetes, GitHub, Grafana, Visual Studio, OpenStack.

Academic Projects:

- Implemented Deep Learning-Based Power Allocation for Sum Rate Maximization in Parallel Multi-Radio Heterogeneous Wireless Network.
- Developed a custom xApp during the class to measure the Key Performance Indicator (KPI) of srsRan in both FlexRIC and ORAN-SC RIC Platform.
- Conducted a survey on Green and Sustainable 6G to highlight the need for unified targets and measurements in addressing sustainability challenges in wireless communications.

Academic Activities

- **CCI Symposium 2023, Richmond, VA**
  Engaged with researchers and collaborators from across Virginia.
- **Workshop on Agriculture and Rural Communities (ARA) Testbed, Iowa State University**
  September 5-7, 2023 – Participated in rural and agricultural wireless solutions workshops.
- **srsRAN Project Workshop, Arlington, VA**
  October 23-24, 2023 – Attended keynote presentations, panel sessions, demonstrations, and hands-on workshops on srsRAN projects.