



# COMSATS Institute of Information Technology

## Department of Electrical and Computer Engineering

M. A. Jinnah Building Defence Road, Off Raiwind, Lahore.

Tel: +92 (42) 111-001-007 Fax: +92 (42) 99203100

### Funded Positions for MS Electrical / Electronics / Computer / Communication Engineering

Communication Systems and Networks (CSN) research group at the Department of Electrical and Computer Engineering, COMSATS University Islamabad, Lahore Campus and University of Azad Jammu and Kashmir are working on a joint research project for the investigation and early warning of high risk landslides in Azad Jammu and Kashmir area. The research project has obtained a funding of Rs. 11.787 Million from National Center of GIS and Space Applications (NCGSA). Total duration of the research project is two years. Dr. Muhammad Basharat at the University of Azad Jammu and Kashmir is the Principle Investigator while Dr. Muhammad Farooq-i-Azam at COMSATS University Islamabad, Lahore Campus is the CoPI of the project.

One component of the research project aims to design, develop and deploy a landslide monitoring system based upon wireless sensor node and internet of things (IoT). To achieve this end, we plan to develop wireless sensor nodes equipped with two sets of sensors. One node will comprise of a set of inexpensive sensors embedded in the ground and will provide real time land monitoring by collecting geotechnical data whereas another sensor node comprising of meteorological sensors will provide real time meteorological details of the landslide site. The entire sensor network (the things) will be connected to the Internet through a gateway node thereby resulting in an Internet of things (IoT) network. The real time data will be transmitted to a central computer for processing and storage in a database. For landslide prediction based upon the real time data, we also plan to design and develop a slope failure and landslide prediction model. Depending upon the data and assessed condition of the landslide, the model will be able to assign a level of risk to the landslide.

The research project has funded positions of two MS Electrical / Electronics / Computer / Communication Engineering students. The duration of the funding is one year @ Rs. 20000 per month per student. One student will be funded for the first year of the project while the second student will be funded in the second year of the project. The students will complete their MS thesis in the project domain and will be supervised by Dr. Muhammad Farooq-i-Azam who is the CoPI of the project. The students should have completed B.Sc. Electrical / Electronics / Computer / Communication Engineering degree with a CGPA 3.0 or higher. The first MS student who will work in the first year of the project should have good skills of embedded system development, Arduino, XBee, Raspberry Pi and related programming and development skills. The second MS student must possess strong programming skills in database development, C/C++, Java and PHP. In addition, the candidates must possess excellent organizational, written and verbal communication skills to disseminate research results in the form of presentations and reports. Students who are enrolled in the MS Electrical or Computer Engineering at COMSATS University Islamabad, Lahore Campus and have completed or near to complete course work will be given preference. Interested students should email resume to [fazam@cuilahore.edu.pk](mailto:fazam@cuilahore.edu.pk) latest by **23 June 2022**. Interested candidates can also meet him in person in his office Room B-11, B-Block, ECE Department, COMSATS University, Lahore Campus. Send a message at +923004524903 to schedule a meeting.

Dr. Muhammad Farooq-i-Azam  
Communications and Networks Research Group  
Room B-11, B Block  
Department of Electrical and Computer Engineering  
COMSATS University Islamabad, Lahore Campus  
Email: [fazam@cuilahore.edu.pk](mailto:fazam@cuilahore.edu.pk)  
Tel: +92 300 452 4903



# COMSATS Institute of Information Technology

## Department of Electrical and Computer Engineering

M. A. Jinnah Building Defence Road, Off Raiwind, Lahore.

Tel: +92 (42) 111-001-007 Fax: +92 (42) 99203100

---

### Benefits

- Rs. 20000/- per month
- Thesis will be part of the project funding
- All equipment will be provided by the project fund
- Funded Thesis

### First MS Student

#### Eligibility

- B.Sc. Electrical / Electronics / Computer / Communication Engineering
- CGPA 3.0 or higher in B.Sc. Engineering
- Embedded systems development
- Arduino
- Raspberry Pi
- XBee
- C/C++

### Second MS Student

#### Eligibility

- B.Sc. Electrical / Electronics / Computer / Communication Engineering
- CGPA 3.0 or higher in B.Sc. Engineering
- Database design and development
- C/C++
- Java
- HTML, CSS, JavaScript
- Database development using MySQL or current technologies

The following skills are desirable for the second MS student

- PHP
- Linux

