



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 FYPs for BS 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 project intends to fund three final year projects (FYPs) of BS Electrical / Electronics / Computer / Communication Engineering students. The proposed project titles are as following:

1. Design and development of wireless sensor node for landslide monitoring
2. Software development for landslide risk modeling and assessment
3. Database and website development for landslide early warning system

The project will fund all the components and equipment required for the completion of the project. In addition, a lump sum stipend of Rs. 12000/- will be paid to each project group. The FYPs will be supervised by Dr. Muhammad Farooq-i-Azam. In addition, two MS students will also work on this project.

The students should be enrolled in the sixth semester and should have a CGPA of 3.0 or higher without any failure in any previous subject. The students who are interested should immediately contact Dr. Muhammad Farooq-i-Azam in Room B-11, B-Block, latest by **23 June 2022**. Send an email to fazam@cuilahore.edu.pk or message at +923004524903 to schedule a meeting.

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Benefits

- Components and equipment will be provided by the project fund
- Lump sum Rs. 12000/- will be provided to each FYP group
- Funded project report will ensure good job prospects or higher studies

Eligibility

- Sixth semester student
- CGPA 3.0 or higher
- No failure in any previous subject

Previous knowledge in the following areas will be an advantage:

- Embedded systems development
- Arduino
- Raspberry Pi
- XBee
- C/C++
- HTML, CSS, JavaScript
- Java
- PHP
- MySQL

