CURRICULUM VITAE

Malik Mohammad Saad

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ACADEMIC BACKGROUND

DEGREE	INSTITUTION	YEAR	CGPA/Div
BS Electrical Engineering	Institute of Space Technology, Islamabad Pakistan	2014-2018	3.02/4.00
FSc. Pre-Engineering	FBISE Islamabad, Pakistan	2012-2014	83%
Matriculation	FBISE Islamabad, Pakistan	2010-2012	88%

RESEARCH INTEREST

Communication Systems, Satellite Communication, Control System, Instrumentation Engineering, Embedded sytesm, Mashine Learning, Communication via UAVs, V2X communication, Internet of things, 5G, Massive MIMO, Multimedia Wireless Sensor Networks, Energy Harvesting.

PEER-REVIEWED PUBLICATIONS

1) **Malik Saad**, Muddasir Hussain. **"Vehicular AD-HOC Network using Software Defined for Collison Avoidance"**, Proceedings of IEEE International Conference on Advance Communications Technology 2018.

ON GOING RESEARCH

1) 5G Cognitive Cells Deployment and Experimenation evaluation using USRP Ettus X310 and N210 over the 5G Hz Band.
2) Experimental Evaluation of Channel Estimation in Vehicle to Vehicle Communication using Software Defined Radio.
3) Virtulaization of Software Defined Radio.

ON-GOING RESEARCH PROJECTS

Experimental Evaaluation of 5G Cognitive Cells Deployment using SDR: The objective of this research is to study, investigate and provide solutions for some of the key challenges that will face the deployment of the 5G cellular networks. The focus of this research is to provide high reliability low latency and high bandwidth. Key objective of this research project is described as follows:

- To access the spectrum of Wifi 5GHz unlisenced band by fair means.
- To access the lisenced band to utilize the spectrum in 5G Technology.
- Creation of virtual block in GNR
- Control Program that can vary center frequency, tranmsit power of the Virtual Block.
- Experimenation with virtual radio in presence of interference.

PROGRAMMING AND TECHINCAL SKILLS

C++, MATLAB, Hand on Experience on SDRs, GNU Radio, Labview, Python, MP Lab, Multisim, Auto CAD, Proteus, MS Office.

FULL TIME EMPLOYMENT EXPERIENCE

1. Research Associate at IST, Pakistan

Organization : Institute of Space Technology Pakistan.
Duration : 2nd July 2018- to date

Currently working as a **Research Associate** in **Institute of Space Technology Islamabad, Pakistan** on a funded experimental research project of **5G Cognitive Cells Deployment** by Ministry of Science & Technology Pakistan (ICT R&D).

Internship

1. Intern at National Institute of Electronics (Ministry of Information Technology)

Duration : 01 July 2016- to 29 July 2016.

2.Intern at WAPDA Grid Station Chaklala, Rawalpindi

Duration : 01 Aug 2016- to 29 Aug 2016.

3. Intern at Institute of Space Technology, Islamabad

Duration : 18 July 2017- to 18 Aug 2017.

BACHELOR DEGREE THESIS

Title: Vehicle to Vehicle Communication Using Software Defined Radio

In this project we developed a V2V communication test bed which will transmit the safety messages to different vehicular moving units. By making the use of Software defined Radios, we are make an autonomous transmitter and receiver for the exchange of traffic safety messages. We have use Dedicated Short Range Communication protocols for the communication between different vehicular units. Our

test bed consists of vehicular units, laptops and Software Defined Radios. We have program the Software Defined Radios as per our requirement to make them autonomous transmitter and receiver for vehicular units. According to research there were millions of accidents in the world. Such accidents could be avoided by creating a VANET Vehicular Ad-Hoc Network Environment using Dedicated Short Range Communication (DSRC) which assists in reducing the number of deadly hardly crashes and avoiding the deaths in accidents. In this project we aim to develop a test-bed using USRPs Software defined radio and Lab-View as software platform and discusses the strength of signal varies with respect to distance and speed. Applications: Traffic collision avoidance Speed warnings To provide the data related to traffic congestion ahead so that the drivers can change their route to reach the destination on time.

Semester Projects

- GUI based Arithmetic Calculator in Visual Studio (Programming Language Project)
- LCA based Circuit Solver in Visual Studio (C++ Project)
- Home Automation using GSM (Hobby Project)
- Gas Leak Indicator (Electronic Devices Project)
- Audio transmitting and receiving using optical fiber cable (Opto Electronics Project)
- LCA based Circuit Solver in Visual Studio (C++ Project)
- Digital Speedometer (Digital Logic Design Project)
- Alphanumeric Display using Dot matrix Display (Embedded System Project)
- Designing of Yagi Antenna (Antenna Project)
- Modulation and Demodulation of Data Performed in Matlab (Digital Communication Project)

RELEVANT COURSES

Major Courses:

- Communication Systems
- Digital Communications
- Antenna
- Embedded Systems
- Signal and Processing
- Electromagnetic Fundamentals
- Networks
- Digital Logic Design

- Probability
- Circuit Analysis
- Numerical Analysis
- Electrical Network Analysis

REFERENCE

❖ **Dr. Farrukh Aziz Bhatti (PhD from University of Surrey, Guildford)**
Assistant Professor, Electrical Engineering Department, Institute of Space Technology, Islamabad Pakistan
Email: farrukh.aziz@ist.edu.pk

❖ **Dr. Sobia Jangsher (PhD from Vienna University of Technology)**
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