Muhammad Tilal

Romm # 25, Department of Electrical Engineering, CIIT Attock, Pakistan.
Phone: +92–57- 931 63 30 **Email:** muhammadtilal@ciit-attock.edu.pk

OBJECTIVE

Attain a challenging and rewarding position where I can best utilize my experience, intellect, aptitude and abilities to make a significant contribution for my organization's success along with personal development.

PROFESSIONAL EXPERIENCE

Lecturer - Department of Electrical Engineering Dec' 2011 – Present
COMSATS Institute of Information Technology, Attock, Pakistan.

- Pedagogical engagements for undergraduate courses
  http://electronics-1.weebly.com/
  http://electronics-2.weebly.com/
- Supervision of labs and exams
- Program advisor to the freshmen

Internee - Quality of Service Department Jan' 2006
PMCL Mobilink, Islamabad, Pakistan

- Drive and network performance tests and detailed study on GSM network

EDUCATION

MS- Communication Engineering Sep' 2008 – Dec' 2010
(Specialization: Wireless Communication Systems)
Chalmers University of Technology, Sweden

BE- Electrical July' 2003 – Dec' 2006
National University of Sciences & Technology (NUST), Pakistan

MS- THESIS

Effects of jamming on IEEE 802.11p systems
http://publications.lib.chalmers.se/records/fulltext/133747.pdf

- Investigation of the susceptibility of 802.11p transceivers (physical layer) to jamming signals using tapped delay line vehicular channel models
- Major jamming techniques included noise, tone and follower jamming
- Simulations performed in a PHY layer simulator developed in IT++ (C++) using cluster computing

PROJECTS

01. Simulation of Rayleigh Fading Channel using Clarke's Doppler Spectrum
    - Rayleigh fading channel simulation and comparison using filter and spectrum methods
    - Quality assessment of fading channel in terms of Autocorrelation, Power Spectral Density and Average Fade Duration

02. Design and simulation of an OFDM communication system over fading wireless channel
- Frequency selective channel simulated to quantify time and frequency variations in terms of coherence time and coherence bandwidth
- An OFDM system designed and simulated based on the channel properties and system requirements to achieve a target bit error rate (BER)

03. Adaptive filtering using LMS Algorithm for noise cancellation in real time systems
- Least Mean Squares (LMS) algorithm implemented for real time noise cancellation in an acoustic channel based system

04. Baseband equalization in an acoustic communication system
- OFDM based communication system developed to communicate the acoustic signal between two PC's
- Equalization, synchronization, signal interpolation and decimation incorporated

05. Channel Coding – Simulation of Block, Convolutional and Turbo Codes
- Simulation and evaluation to select the optimal code for given system requirements
- Effects of soft and hard decision decoding for convolutional and turbo codes

06. Flexible bandwidth in LTE systems (Case Study)
- A detailed study project on basic architecture & implementation methodology of flexible bandwidth in LTE systems

07. Wireless calculator for digital transmission over noise limited link
- Wireless calculator development using an acoustic communication link between two PC's using Matched Filter and Frequency Shift Keying (FSK)

08. Design and fabrication of GSM based terminal for remote reading of electricity meters **(Undergraduate Final Year Project)**
- Programmed and interfaced an Atmel 89C51 microcontroller to GSM modem and consumer electricity meter
- Billing data collected through an IR sensor mounted on the electricity meter

09. Design and development of control modules for accurate speed and direction control using 8088 Microprocessor and AT89C51Microcontroller

10. Homomorphic filtering for image enhancement

11. Video compression using block matching motion compensation

---

PROGRAMMING & SOFTWARE SKILLS

- *Softwares*
  MATLAB, Simulink, LAB VIEW, Advanced Design Systems (ADS), KEIL, PROTEL, PCAD, Eclipse (Linux), Sun Virtual Box

- *Languages*
  C/C++ (IT++), Assembly Language (Intel 8086, AT89C51), HTML

TRAININGS & WORKSHOPS

- LAB VIEW training for real time Sensor Measurements, Data Acquisition & Signal processing
- Pedagogical skills development course at COMSATS Faculty Development Academy (FDA)
- Project wrap up workshops at Ericsson**,** Gothenburg
- RF & Microwave system level design course spanning one month at NUST
- In house training on "Advanced Design Systems (ADS)" at NUST

ORGANIZATIONAL SKILLS

- Advanced communication, interpersonal skills and a flexible edge to cope with new environment and challenges
- Capable of decision making, time management, creative problem solving and working under pressure with a systemic approach

HONORS & AWARDS

- Rector's Gold Medal for best undergraduate Final Year Project
- Scholarship in the B.E. final semester for scoring GPA 3.5/ 4.0
- Scholarship for scoring 3rd position in B.E. entrance examination at NUST
- Appointment as Section Commander (2002-03) at Cadet College Hasan Abdal