AREAS OF INTEREST

○ Communication Systems	○ Digital Signal Processing
○ Information Theory	○ Wireless Communication
○ Error Correcting Codes	○ Software Defined Radio

TECHNICAL SKILLS

- **Operating Systems:** Linux, Windows.

- **Softwares Skills:** GNU Radio, Scipy, Scilab and LaTeX

- **Programming Skills:** C, C++ and Python

- **Hardware Platforms:** USRP, RTL SDR

WORK EXPERIENCE

- **Graduate Engineering Trainee (C & I), Adani Power Limited** (July 2010-January 2011)
  - ○ Training on various functional units like boiler, turbain, water-treatment etc in a powerplant obtained.
  - ○ Exposure to supercritical thermal powerplant.

- **Senior Engineer (C & I), Adani Power Limited** (January 2011-July 2011)
  - ○ Working experience on DCS, PLC and SCADA systems
  - ○ Responsible for maintaining working and maintenance of C & I equipments in the powerplant

PROJECTS AND SEMINARS

- **Google Summer of Code, 2013: LDPC codes and more FEC in GNU Radio** (June 2013-Present) **Mentor** - Dr.-Ing. Jens Elsner, CEL, KIT.
  - ○ Aim is to develop generic encoders and decoders for LDPC Codes in GNU Radio.
  - ○ Aims to improve encoders and decoders for BCH and RS codes.
  - ○ GNU Radio is an open-source software defined radio platform.
  - ○ Algorithms for obtaining LDPC Codes are also implemented.
  - ○ Block for belief propogation decoder is implemented.
  - ○ Block for encoding (back-substitution) is also implemented.
  - ○ Project is open-source and is available at https://github.com/manuts/ldpc

- **M.Tech. Project: Application of LDPC codes to Multiuser Communications** (July 2013-Present) **Guide** - Prof. Sibiraj B Pillai, IIT Bombay.
  - ○ LDPC codes are characterized by sparse parity check matrices
  - ○ Aim is to study LDPC encoding and decoding algorithms and extend them to multiuser scenario.
  - ○ GNU Radio used for development of blocks

- **DARPA Spectrum Challenge: Developing Communication system in competing and cooperating scenario** (March. 2013)
  - ○ Challenge is to develop a transmitter and receiver, for two scenarios.
  - ○ A pair of nodes competing against another to communicate a file in shortest time.
  - ○ A pair of nodes cooperating with two other pairs so that all the pairs communicate the file in shortest time.
  - ○ USRPs are used for radio front ends.

- **M.Tech. Seminar: Resource allocation in Wireless Networks** (Nov. 2011)
  Guide - Prof. Sibiraj B Pillai, IIT Bombay.

  ◦ We studied various power allocation schemes in a wireless multiple access channel.
  ◦ Optimal power allocation under information theoretic setup was studied.

- **DSP Course Project: Design of Digital Filters** Nov. 2011
  Instructor - Prof. Vikram M Gadre, IIT Bombay.   The project involved designing bandpass and bandstop digial filters in python.

- **DSP Course Project: Localization of audio source** Nov. 2011
  Instructor - Prof. Vikram M Gadre, IIT Bombay.   The project involved developing codes for locating an audio source from the delay between signal captured from mics kept at a distance.

- **B. Tech. Main Project: Study of Orthogonal Frequency Division Multiplexing** (Jan. - June 2010)
  Guide - Prof. P Harikrishna Prasad, NIT, Warangal.

  This goal of the project was to study OFDM systems and implement the same in matlab.

- **Industrial Training: BSNL Kerala Circle** (May 2008 - June 2008)

  Various aspects of GSM Architecture were studied. Specifically, training on OMC Radio, OMC Switch, Radio Planning and BSS were obtained

COURSE WORK

◦ Communication Systems
◦ Information Theory
◦ Digital Signal Processing
◦ Statistical Signal Analysis
◦ Markov chains and Queuing Systems

◦ Error Correcting Codes
◦ Digital Message Transmission
◦ Wireless Communication
◦ Applications of Linear Algebra
◦ Optimization Techniques

ACHIEVEMENTS

- Our team secured a spot in the finals of **DARPA Spectrum Challenge**.

- Best outgoing student of the year 2004 in JNV Malampuzha.

POSITION OF RESPONSIBILITY

- **System Administrator in WEL** (July 2011-Present)
  Wadhwani Electronics Lab is one of the largest lab in IIT Bombay, with more than a hundred computers and about four server grade machines. The duties of the system administrator involves configuring and maintaining the computers and the servers.

- **School Captain, JNV Malampuzha** (May 2003 - March 2004)
  The school captain is responsible for maintaining the discipline and decorum in the school.

HOBBIES

- Reading, music and movies.