WORK EXPERIENCE

- **Graduate Engineering Trainee (C & I), Adani Power Limited** (July 2010-January 2011)
  - Obtained training on various functional units like boiler, turbine, water-treatment etc in a power plant.
  - Exposure to super-critical thermal power plant.
  - Obtained two weeks of training on soft-skills during this period.
- **Industrial Training: BSNL Kerala Circle** (May 2008 - June 2008)
  - Various aspects of GSM Architecture were studied.
  - Training on OMC Radio, OMC Switch, Radio Planning and BSS were obtained.
  - RAN drive tests were done.
  - Realtime traffic analysis of telecom networks were conducted.

ACHIEVEMENTS

- Our team secured a spot in the finals of **DARPA Spectrum Challenge**.
- Our team won first prize in Junk-Yard wars in Technozion 2010.
- Best outgoing student of the year 2004 in JNV Malampuzha.

POSITIONS OF RESPONSIBILITY

- **Teaching Assistant**
  I was assigned the duty of System Administrator in the following lab courses.
  - EE-318, Electronics Design Lab - I, Spring 2012.
  - EE-712, Embedded System Design Lab, Spring 2012 .
  - EE-389, Electronics Design Lab - II, Autumn 2012.
  - EE-616, Electronics System Design Lab, Autumn 2012.

  As the System Administrator I did the following things.
  - Configure and maintain all the computers in used in the labs.
  - Configure and maintain four server grade machines in the labs.
  - Configured Apache server, FTP server, Samba server and DHCP server.
  - Wrote a bash script to automate user maintenance.

HOBBIES

- Reading, coding, music and movies.

TECHNICAL SKILLS

- **Operating Systems:** Linux, Windows.
- **Softwares Skills:** GNU Radio, Scipy, Scilab and LaTeX
- **Programming Skills:** C, C++ and Python
- **Software Defined Radio Platforms:** USRP, RTL SDR

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.
  - The project is to develop generic encoders and decoders for LDPC Codes in GNU Radio.
  - As a part of this project we also improve encoders and decoders for BCH and RS codes.
  - Algorithms for obtaining LDPC Codes are also implemented.
  - Block for belief-propagation decoder is implemented.
  - Block for back-substitution encoding is 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
  - The project is to study LDPC encoding and decoding algorithms and extend them to multiuser scenario.
  - Belief-propagation decoder and back-substitution encoder blocks are developed.
- **DARPA Spectrum Challenge:** (March. 2013-Present)
  - During the hurdles and wild-card tournament we designed a transmitter-receiver pair, for two scenarios.
  - A pair of nodes competing against another to communicate a file in shortest time is designed.
  - A pair of nodes cooperating with two other pairs is designed.
  - All the pairs use same the same 5MHz frequency band.
  - Single-handedly pushed the team through wild-card tournament.
  - In the wild-card tournament our team surpassed teams from top universities and industries.
- **M.Tech. Seminar: Resource allocation in Wireless Networks** (Nov. 2011)
  Guide - Prof. Sibiraj B Pillai, IIT Bombay.
  - We studied optimal power allocation in flat-fading multiple access channels.
  - Schemes achieving rate tuples under information theoretic setup were studied.
- **DSP Course Project: Design of Digital Filters** (Nov. 2011)
  Instructor - Prof. Vikram M Gadre, IIT Bombay.
  - Designed FIR and IIR filters.
  - Designed filters under band-stop, band-pass and low-pass responses.
  - Filters were designed under chebyschev and buttorworth approximations.
- **DSP Course Project: Localization of audio source** (Nov. 2011)
  Instructor - Prof. Vikram M Gadre, IIT Bombay.
  - In this project we designed a system to locate an audio source.
  - The delay between audio signals captured from two mics is used to locate audio source.
- **B. Tech. Main Project: Study of Orthogonal Frequency Division Multiplexing** (Jan. - June 2010)
  Guide - Prof. P Harikrishna Prasad, NIT, Warangal.
  - The goal of the project was to study OFDM systems.
  - Matlab simulation of an OFDM system was done as part of this project.

COURSE WORK

- Communication Systems
- Error Correcting Codes
- Information Theory
- Digital Message Transmission
- Digital Signal Processing
- Wireless Communication
- Statistical Signal Analysis
- Applications of Linear Algebra
- Markov chains and Queuing System
- Optimization Techniques