

DUAL DEGREE PROJECT

Implementation of cognitive radio on the USRP kit

June 2013 - till date

Guide: Prof S N Merchant, Dept. of Electrical Engineering, IIT Bombay

- Carried out energy detection spectrum sensing to find the lowest energy frequency band using Python
- Working on a cognitive OpenBTS system

PROGRAMMING SKILLS

Languages: C, Matlab, Python, bash scripting, Assembly for the Intel 8085 microprocessor, Octave, Verilog, Ruby, SQL, XML, PHP, Javascript

Operating systems: Unix, Linux and Mac OS X

ACADEMIC PROJECTS

Scalable video coding using wavelets

Feb-Apr 2013

Guide: Prof V M Gadre, Dept. of Electrical Engineering, IIT Bombay

- Compressed three different spatial resolutions of a video together into a single bitstream
- At the receiving end, uncompressed the best resolution for the bit rate available

Principal Component Analysis in face recognition

Oct-Nov 2012

Guide: Prof V Rajbabu, Dept. of Electrical Engineering, IIT Bombay

- Implemented an iterative algorithm of using PCA in face recognition

Reconstruction of a brain image

Sep-Nov 2012

Guide: Prof Arjun Arunachalam, Dept. of Electrical Engineering, IIT Bombay

- Designed and tested an algorithm to remove noise artifacts from a brain image

KEY ACADEMIC ASSIGNMENTS

Course: Advanced computing for electrical engineers

Sep 2012

Guide: Prof Virendra Singh, Dept. of Electrical Engineering, IIT Bombay

- Implemented stack, queue, dequeue, linked list, doubly linked list, self-adjusting list in C
- Implemented 2-3 tree, splay tree, huffman tree and AVL tree in C

Course: Speech Processing

Autumn 2012

Guide: Prof Preeti Rao, Dept. of Electrical Engineering, IIT Bombay

- Analyzed speech signals using Linear Prediction and also re-synthesized them
- Estimated the pitch of a speech signal using Cepstrum estimation

SEMINARS

Measurement of interference temperature

Jan-Apr 2013

Guide: Prof S N Merchant, Dept. of Electrical Engineering, IIT Bombay

- Surveyed various ways of measuring interference temperature efficiently

LED's for high speed applications (over 100 Mbps)

Mar-Apr 2013

Guide: Prof Joseph John, Dept. of Electrical Engineering, IIT Bombay

- Presented a seminar on how LED's could be used for high speed short range fiber optic communications

EXTRA CURRICULARS

- Won a silver medal in the All India Computer Knowledge Competition 2006
- '9/10' in the course EE 717: Advanced Computing for Electrical Engineers
- **Organizer, Infrastructure Team**, Techfest 2010
- **Social Service:** surveyed water and electrical resources of remote villages in Maharashtra
- **Interests:** Computer programming for technical problems, communications, problem solving, functional programming