

Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY

Munshi Nagar, Andheri (West), Mumbai 400058.

LIST OF PROJECTS

Academic Year 2011-12

SR NO.	NAME OF STUDENT	TITLE OF PROJECT	ABSTRACT
1	Mirchandani Bhisham Shah Cinjal Nagarsheth Kaushal	Stock Market Trend Prediction Using Soft Computing	We have created a java based computer application which automatically imports price data (from the internet) of stocks listed on the BSE(Bombay Stock Exchange) and displays the prediction for the future trend of each stock. For processing this data we have used concepts of stock market technical analysis for feature extraction and a Levenberg Marquardt neural network for training and prediction. This network has also been optimized by a genetic algorithm to help provide better accuracy and reliability to the system. Accuracy in the range 60 to 80 percent was achieved.
2	Dangi Vikramaditya Parab Amol Pawar Kshitij	Image Processing Based Intelligent Traffic Controller	The project proposes to implement an intelligent traffic controller and an emergency vehicle detection system using real time image processing. The image sequences from a camera are analyzed using various edge detection and object counting methods to obtain the most efficient technique.
3	Kamdar Bhavin Shah Dhaval Sorathia Shahid	FPGA Based MIMO OFDM System	In this project, a design and implementation of a baseband Orthogonal Frequency Division Multiplexing (OFDM) transceiver utilizing Multiple Input Multiple Output (MIMO) signal processing for increased data rate is done. The system is composed of a 2X2 MIMO utilizing Vertical-Bell Laboratories Layered Space-Time (V-BLAST) detection algorithm. Alternate designs for modulator-demodulator, convolutional encode - decoder and sync circuit are considered to get optimum resource utilization and low complexity. The design is implemented on a Spartan 6 FPGA and resource utilization with various combinations is compared to get an optimum design in terms of hardware footprint.
4	Rawat Pratibha Joshi Pratik Thakur Meghna	Cluster-Forward-Fusion Based Distributed Spectrum Sensing for Cognitive radio Networks	We propose a cluster-forward-fusion (CFF) based distributed spectrum sensing model for a two-level hierarchical cognitive radio network to improve the sensing efficiency. By dynamically organizing all the secondary users into optimum number of clusters and then selecting the user with highest instantaneous channel gain and highest detection probability for cluster-based decision making, the proposed model exploits spatial diversity. Moreover, by selecting the most favorable user for forwarding of cluster-based results to the fusion centre, the proposed model exploits the user selection diversity to further enhance the sensing performance.
5	Dhawan Apeksha Dhumak Shruti	Real Time Non Detrimental Tea Testing	The traditional methods for fermentation in the tea industries used earlier prove to be invasive, inaccurate and inefficient hence we intend to develop a project which is a real time imaging technique processed on FPGA. It includes comparison of the ideal image of tea leaves with the real time image using a colour matching algorithm on Xilinx system generator FPGA which provides high optimality.

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6	Doshi Nimesh Kadam Pranav Kanekar Archana	Implementation of Digital Camera System Using VHDL	The proposed system presents the design and implementation of FPGA based system for face recognition by Eigen face technique using Xilinx System Generator (XSG). Eigen face technique uses the Principal component Analysis (PCA) to recognize the face. The Image captured by camera is compared with database images and the matched one will be displayed on PC.
7	Chaudhari Gaurav Bhoy Krunal Naik Bhushan	Indoor Positioning using Bluetooth	Indoor Positioning System locates and tracks people and assets inside a building. The solution provides real-time location information of mobile phones users using Bluetooth. In this work, a new method is proposed for reducing the effect of RSSI variations over time by dynamically calibrating the RSSI/distance model in a addition to a neural logic unit to further improve the accuracy of the bluetooth based indoor localization system. In this project position is track for Android platform.
8	Chaudhari Bhushan Gothankar Prathmesh Iyer Abhishek	Wireless Network Security using Dynamic Rule Generation of Firewall	Security in wireless networks like W-LANs is very important. Hence, a scheme can be implemented which detects intruders/hackers and blocks them automatically by dynamically generating appropriate firewall rules. A WIDS is used in conjunction with a firewall which forms the basis of this defense technique.
9	Borukar Swaroop Patel Kinjal	Fingerprint Security using Image Processing	Our Project aims at introducing biometric capable technology for use in automating the entire attendance system for the office staff/students pursuing courses at an office. The goal can be disintegrated into finer sub-targets; fingerprint capture & transfer, fingerprint image processing and retrieving of data in a server-client system.
10	Pisolkar Pranali Parmar Sneha Poojari Chitra	Satellite positioning simulation system	A bang–bang controller (on–off controller), also known as a hysteresis controller, is a feedback controller that switches abruptly between two states. They are often used to control a plant that accepts a binary input. With recent development of the space science and technology, higher requirements such as accuracy, robustness and disturbance rejection ability in satellite attitude control system have led to the more promising intelligent control methods. In order to implement this artificial neural networks are a growing trend. To this effect, a software model for satellite positioning system is proposed with a neuro-fuzzy controller, and the model being implemented via MATLAB.
11	Chandaliya Pritesh Dhakate Nitin Lokhande Udaykumar	Interference Analysis of IEEE 802.11n	Our main aim in this project is to analyze the interference pattern of IEEE 802.11n with other standards in same spectrum i.e ISM 2.4 GHz band. This type of interference is mainly due to co-channel and adjacent channel interference. The change in throughput is due to the change in transfer data rate from transmitting node to the receiving node in the presence of other wireless node. We have used NS2 software and TCL scripting language.

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12	Shah Priyanshu Tamboli Sagar Vora Rushabh	Modeling and Simulation of Dynamic Channel Allocation in Cellular Networks.	Recently, heavy traffic in the spectrum with interference being the most prohibiting factor has given rise to the need for efficient channel assignment techniques to increase the overall system capacity. In our project using MATLAB we provide a comparison between fixed channel allocation (FCA) and dynamic channel allocation (DCA) which attempts to allocate channels to users in such a way so that the average blocking probability and forced termination in the entire system is minimized. Further in contrast to traditional DCA schemes we have considered random user mobility and traffic variations to study forced termination probability.
13	Gala Vinit Nishar Harshal Dave Hardik	Adaptive Channel Coding System	This project details the implementation of an adaptive channel coding and modulation system using different Forward Error Correction (FEC) codes on DSP. Comparison of FEC codes with different error correction probability is evaluated over an Additive White Gaussian Noise (AWGN) channel. QoS based code switching algorithm is implemented based on data rate and channel conditions.
14	Sawant Sachit Samant Ashish Kothari Avdesh	Web Server For Wirelss Sensor Networks	This project involves implementation of a web server and its integration into a network of wireless sensor nodes. A network of sensor nodes detects parameters such as temperature and then conveys the information to a central node, which monitors battery life of the corresponding sensor nodes. The web server allows users to communicate with the network through the internet, and also allows an interface to help conserve battery life of the nodes.
15	Kirdat Akshay Mayakal Aniket Bandeekar Mayuresh	Smart Black Box For Cars	Smart Black Box for Cars is a device that records and stores informational data, such as: engine / vehicle speed, rpm etc, which is available from the vehicle to revolutionize the field of motor vehicle accident investigation. It also includes vehicle mapping and accident alert with the help of GPS and GSM technology. There is an additional feature for drunk driver detection and an SMS alert for the same.
16	Khetan Mukund Chokshi Soham Shah Rishabh Walinjkar Gauri	Fire Monitoring System using ZigBee Protocol with Temporal Control for Power conservation in Wireless Sensor Network.	The aim of the project is to study the power consumption considering the various node parameters. Combining with the WSN (wireless sensor network), a real-time wireless fire monitoring system is established. ZigBee protocol is adopted in the system to form reliable wireless communication helping to achieve power conservation. The sensor nodes are configured as detection nodes in the ZigBee network to achieve a real-time data collection of fire parameter signals.
17	Bhogawar Suyash Morankar Priyanka Singam Rajat	Cardiac Sound Analyzer & Monitor	In this project, a heart sound analyzer is presented for interpretation of heart sound signals and automated diagnosis of valvular heart disease. The heart sound analyzer includes data acquisition from multiple positions, signal analysis to extract auscultatory features and information, and acknowledge-based program to provide a likely diagnosis. Experiments using clinical data from real patients show good performance for the automatic analysis. Due to its simplicity and fast implementation, the method has potential for clinical deployment and eventually to be used in distributed diagnosis settings.

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18	Sheth Raj Thakur Niharika Patil Ketan	Recognition of Overlapping Handwritten Text	The paper aims at developing an efficient handwriting recognition system used for detecting overlapped handwritten characters between adjacent lines of text using fuzzy reasoning and Neural Network. It mainly focuses on detection of the overlapped region and separating the overlapped handwritten English alphabets using the knowledge of their structure.
19	Gandhi Pankti Bhavesh Mehta Udit Divyesh Shah Pankit Dhimant	Home Automation System for Reduction in Power and Energy Consumption using Power Line Communication	The Project aims at creating a Home Automation System with a 3 way switching control of home appliances in order to reduce energy and power consumption. The system is implemented using X10 protocol of powerline communication. The home appliances would be controlled in using 2 modes : manual mode and automatic mode. The manual mode involves control of appliances through existing switches or controlling the appliances over the internet through our web page. The automatic mode involves control of appliances through sensors (Motion sensors, fire alarms, temperature sensors, etc).
20	Kambli Sushant Vartak Kawal Mahadik Aniket	Real Time Image Sharpening System	The Project consists of an Image Sharpening system using FPGA. We have implemented Image Sharpening algorithm in Simulink using Xilinx Blockset. The Simulink code is burned on the FPGA board. The required sharpened Image is obtained via Hardware Co-simulation and displayed on the monitor.
21	Phulmali Satish Shendge Kiran Tandel Jayendra	Real Time Speacker Recognition	Speaker Recognition is the computing task of validating a user's claimed identity using characteristics extracted from their voices. The process of Speaker Recognition consists of two modules namely:-feature extraction and feature matching. Our proposed system consists of MFCC and VQ as feature extraction and codebook generation method respectively, distortion measure using Euclidean distance as feature matching method.
22	Shelke Dharmendra Rathod Milind Tangadpalle Sharad	Base Station Selection Strategy in Multihope Cellular Network.	In Multihop Cellular Network any mobile terminal (MT) can communicate with another MT directly; much importance should not be attached to the parent or associated base station. This approach distributes the traffic load almost uniformly over the entire region and overcomes the problem of localized congestion in an effective manner.
23	Nibban Swati Pandey Vikas Rungta Harshwardhan Shetye Snehal	Real Time Spectrum Analysis for Harmonic Loads	In present power systems Harmonic Distortion is one of the major problems. Harmonic currents and voltages are produced by non linear loads connected on the power distribution system. Harmonic Distortion is a form of pollution in an electric plant that can cause problems if it goes beyond a certain limit. Thus we propose a Real Time Harmonic Spectrum Analyzer which can measure the harmonics present in any power system and can calculate Total Harmonic Distortion in the signal. Using this system we can produce a Control System which will help in reducing the effects of Harmonic Distortions.