Stupros.com
Cultivating qualities

SPIRO
Solutions Pvt. Ltd

- Research & Development Program (RDP)
- Final Year Academic Project (FAP) in software and Embedded Technologies
- Application Development Program (ADP)

PROJECT TITLES GUIDE
2010-2011

AN ISO 9001:2008 CERTIFIED R&D COMPANY

TABLE OF CONTENTS

About Spiro

Spiro Solutions South India's leading Research & Development Organization. Over a decade, we are furnishing individuals in all technologies and domains by fulfilling their desires in Research & Development sector through efficient training methodologies. All our efforts are focused on students to meet industry requirements.

The global presence and reach attained by Spiro is not only substantiated by its presence, but also by the environment provided for the students. Since our environment is encapsulated with doctorates, professionals and other experts. Accordingly, we created a setting which enables student to recover from the existing learning processes and making them to be an intellect.

In our increasing globalization, Spiro moves forward to unite the desires of students and challenges of the future in R & D sector by improving the agility and enabling students to achieve sustainable growth over their rivalry. For future enhancement, industry based knowledge's are provided for students in various levels. To sum up, we are filling student necessities in all possible ways to make career brighter in their desired field.

SPIRO-Professional Student Process Academy is Subsidiary of Spiro solutions Pvt. Ltd . Over a decade, we are furnishing individuals in all technologies and domains by fulfilling their desires in Research & Development and IT Training sector through efficient training methodologies. All our efforts are focused on students to meet industry requirements. SPIRO-Professional Student Process Academy is a premier provider of IT Training, Research and Development ,Project Training skills across The India ,Singapore and the Malaysia We offer true competency-based programs, we guarantee quality, and we guarantee to lower your costs, all at the same time. SPIRO offers on-site training at your college location as well as a regular schedule of open-enrollment classes at frequent intervals in more than 25 cities Across India. Our courses cover over 60 different subject areas, including programming, Domain Training, Project Training and system administration skills. We offer stand-alone classes in addition to all-inclusive certification training tracks.

We believe that when it comes to training, you need to develop true competence in new skills, not just receive an overview of syntax and techniques.

The best way to assure competence is through facilitated hands on practice. Our students spend at least 50% of their time in class performing structured hands on lab exercises that build competence, confidence, and clarity.

Founded in 2005 by experienced professionals, SPIRO has served thousands of Institutes and Lakhs of individuals over the six years.

Technology : MATLAB
Domain : IEEE Transactions on Image Processing

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
1.	ITIMP01	An Affine Symmetric Image Model and Its Applications	This project reveals the self-similarity relation for affine symmetric images thereby providing a flexible scheme to exploit geometric redundancy.	2010
2.	ITIMP02	Constrained and Dimensionality-Independent Path Openings	This project proposes the method of path openings and closings which are morphological operations with flexible line segments as structuring elements which is essential for image analysis in computer vision.	2010
3.	ITIMP03	High Resolution Cerebral Blood Flow Imaging by Registered Laser Speckle Contrast Analysis	This project enhances and analyses the Laser speckle images (LSI) which has been widely used for detecting cerebral blood flow (CBF) under various physiological and pathological conditions.	2010
4.	ITIMP04	Multivariate Image Segmentation Using Semantic Region Growing with Adaptive Edge Penalty	This project proposes a Multivariate image segmentation which is a challenging task, influenced by large intra-class variation that reduces class distinguishability as well as increased feature space sparseness and solution space complexity that impose computational cost and degrade algorithmic robustness.	2010
5.	ITIMP05	Scanned Compound Document Encoding Using Multiscale Recurrent Patterns	This project proposes a new encoder for scanned compound documents, based on a recently introduced coding paradigm called MMP (Multidimensional Multiscale Parser).	2010
6.	ITIMP06	Green Noise Digital Halftoning With Multiscale Error Diffusion	This project proposes a Multiscale error diffusion (MED) algorithm to produce halftones which is a technique used to turn a gray-level image into a bi-level image and has been widely used in printing applications.	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
7.	ITIMP07	Tracking and Activity Recognition Through Consensus in Distributed Camera Networks	This project investigates the distributed scene analysis algorithms for multi-target tracking in a distributed camera network for various applications like security and surveillance, disaster response and environmental modeling.	2010
8.	ITIMP08	TurboPixel Segmentation Using Eigen-Image	This project presents a method to learn eigen-images from the image to be segmented. This is a powerful tool for image over-segmentation which is fast and can yield a lattice-like structure of superpixel regions with uniform size.	2010
9.	ITIMP09	Fast cartoon + texture image filters	This project decomposes the geometric part and a textural part thereby modifies the image into segmented cartoon like form.	2010
10.	ITIMP10	Automatic Parameter Selection for Denoising Algorithms Using a No-Reference Measure of Image Content	This paper, proposes a no-reference metric Q which is based on singular value decomposition of local image gradient matrix, and provides a quantitative measure of true image content in the presence of noise.	2010
11.	ITIMP11	Generalized Probabilistic Scale Space for Image Restoration	This project proposes a novel generalized sampling-based probabilistic scale space theory for image restoration even in the conditions of low signal-to-noise ratios and image degradation.	2010
12.	ITIMP12	Image Segmentation by MAP-ML Estimations	This project proposes a new image segmentation which is formulated as a labeling problem under a probability maximization framework which can be applied in computer vision and image analysis.	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
13.	ITIMP13	A Statistical Pixel Intensity Model for Segmentation of Confocal Laser Scanning Microscopy Images	This project proposes a model to be used for statistical unsupervised Confocal Laser Scanning Microscopy (CLSM) images which solves the complexity of recorded cellular structures.	2010
14.	ITIMP14	Fast Query for Exemplar-Based Image Completion	This project presents a fast algorithm for filling unknown regions in an image using the strategy of exemplar-matching. It also extends to fill the unknown pixels in a query image block.	2010
15.	ITIMP15	Multiscale AM-FM Demodulation and Image Reconstruction Methods With Improved Accuracy	This project develops a new multiscale amplitude-modulation frequency-modulation (AM-FM) demodulation methods for image processing by designing a new multiscale filter bank.	2010
16.	ITIMP16	Sparse Image Reconstruction For Molecular Imaging	In this project Estimates of the hyper parameters for the lasso and hybrid estimator are obtained via Stein's unbiased risk estimate (SURE). A numerical study with a Gaussian PSF and two sparse images shows that the hybrid estimator outperforms the lasso.	2009
17.	ITIMP17	Phase Adaptive Super Resolution Of Mammography Images Using Complex Wavelets	The proposed method exploits the structural characteristics of breast tissues being imaged and produces higher resolution mammography images with sufficient visual Fidelity that fine image details can be discriminated more easily.	2009
18.	ITIMP18	A hybrid geometric–statistical deformable model for automated 3-d segmentation in brain MRI	The project is a novel 3-D deformable model-based approach for accurate, robust, and automated tissue segmentation of brain MRI data of single as well as multiple magnetic resonance sequences. The main contribution of this study is that we employ an edge-based geodesic active contour for the segmentation task	2009

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
19.	ITIMP19	Cost-Effective Hidden Markov Model-Based Image Segmentation	In this project we introduce a procedure to minimize the misclassification cost with class-dependent cost. The procedure assumes the hidden Markov model (HMM) which has been popularly used for image segmentation in recent years. We represent all feasible HMM-based segmenters (or classifiers) as a set of points in the receiver operating characteristic (ROC) space.	2009
20.	ITIMP20	A Fast Multilevel Algorithm For Wavelet-Regularized Image Restoration	This project is a multilevel extension of the popular "Thresholded Landweber" algorithm for wavelet-regularized Image restoration that yields an order of magnitude speed improvement over the standard fixed-scale implementation. The Method is generic and targeted towards large-scale linear inverse problems, such as 3-D de-convolution microscopy.	2009
21.	ITIMP21	Morphological Background Detection And Enhancement Of Images With Poor Lighting	In this project, morphological transformations are used to detect the background in images characterized by poor lighting. The performance of the proposed operators is illustrated through the processing of images with different backgrounds, the majority of them with poor lighting conditions.	2009
22.	ITIMP22	High-Fidelity Data Embedding For Image Annotation	To achieve the high fidelity of the embedded image, we introduce a visual perception model that aims at quantifying the local tolerance to noise for arbitrary imagery.	2009
23.	ITIMP23	Fingerprint enhancement and recognition using Back Propagation Algorithm.	Using Back Propagation Technique the Enhancement and Recognition of a Fingerprint is implemented in MATLAB	2008
24.	ITIMP24	Digital Image Steganography in Spatial & Frequency Domain	We use human skin tone detection in color images to form an adaptive context for an edge operator which will provide an excellent secure location for data hiding.	2008

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
25.	ITIMP25	Upper surface of the diaphragm estimate using 3D CT Images	We describe a fully automated method by which the position of the diaphragm surface can be estimated by deforming a thin-plate model to match the bottom surface of the lung in CT images.	2008
26.	ITIMP26	Digital Image Watermarking and recovery of the secret image	Using DWT we hide and recover a secret data in the low frequency Domain of the Image.	2008
27.	ITIMP27	Automatic Exudates Detection from the eyes of Diabetic Patients	We propose a novel approach that combines brightness adjustment procedure with statistical classification method and local-window-based verification strategy to detect exudates.	2008
28.	ITIMP28	Image retrieval using Color, Texture and Shape	The uniqueness of an image is checked and retrieved using Color, Texture and Shape using MATLAB	2008
29.	ITIMP29	Face Detection Using Adaboost algorithm	The face region of 'n' number of persons in an image is detected which will be useful in forensic department.	2008
30.	ITIMP30	Color Image Segmentation	The original Color shade of any given input image is obtained on the basis of VIBGYOR	2008

Technology : MATLAB
Domain : IEEE –Digital Signal Processing

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
31.	ITDSP01	Energy Efficient Multi-Object Tracking in Sensor Networks	This project studies the problem of tracking multiple objects moving through a network of wireless sensors.	2010
32.	ITDSP02	Cooperative Diversity of Spectrum Sensing for Cognitive Radio Systems	This project quantifies the diversity order for various cooperative spectrum sensing strategies. To improve the sensing performance of spectrum sensing, cooperation among the secondary users is utilized to collect space diversity.	2010
33.	ITDSP03	Differential Modulation for Bidirectional Relaying With Analog Network Coding	This project proposes an analog network coding scheme with differential modulation (ANC-DM) using amplify-and-forward protocol for bidirectional relay networks when neither the source nodes nor the relay knows the channel state information (CSI).	2010
34.	ITDSP04	Greedy Gossip with Eavesdropping	This paper presents greedy gossip with eavesdropping (GGE), a novel randomized gossip algorithm for distributed computation of the average consensus problem.	2010
35.	ITDSP05	Two-channel Linear Phase FIR QMF Bank Minimax Design via Global Nonconvex Optimization Programming	This project formulates a two-channel linear phase finite impulse response (FIR) quadrature mirror filter (QMF) bank minimax design problem as a nonconvex optimization problem.	2010
36.	ITDSP06	Bounds on the Number of Identifiable Outliers in Source Localization by Linear Programming	The main contribution of this project is an exploitation of recent results in the field of sparse representation to obtain bounds on the number of detectable outliers. It uses linear equations to describe the localization problem.	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
37.	ITDSP07	Phased-MIMO Radar: A Tradeoff Between Phased-Array and MIMO Radars	This project proposes a new technique for multiple-input multiple- output (MIMO) radar with collocated antennas which is called phased-MIMO *radar* which has the advantage of coherent processing gain at the transmitting side.	2010
38.	ITDSP08	Localization in underwater dispersive channels using the time-frequency-phase continuity of signals	This project introduces a new time-frequency analysis tool that aims to extract the time-frequency components of the channel impulse response. The main feature of this technique is the joint use of time-amplitude, time-frequency and time-phase information.	2010
39.	ITDSP09	Power Allocation for a MIMO Relay System With Multiple-Antenna Users	The purpose of this project is to develop fast algorithms to compute the source covariance matrix (or matrices) and the relay transformation matrix to optimize a system performance of MIMO relays.	2010
40.	ITDSP10	Allpass VFD Filter Design	This project proposes a general design for allpass variable fractional delay (VFD) digital filters with minimum weighted integral squared error subject to constraints on maximum error deviation from the desired response.	2010
41.	ITDSP11	Beam forming With a Maximum Negentropy Criterion	In this paper, we address a beam forming application based on the capture of far-field speech data from a single speaker in a real meeting room. After the position of the speaker is estimated by a speaker tracking system, we construct a sub-band domain beam-former in generalized side-lobe canceller (GSC) configuration.	2009

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
42.	ITDSP12	An ensemble speaker and speaking environment modeling approach to robust speech recognition	In this project we propose an ensemble speaker and speaking environment modeling (ESSEM) approach to characterizing environments in order to enhance performance robustness of automatic speech recognition systems under adverse conditions.	2009
43.	ITDSP13	Observer-controller based digital PLL	In this project, we propose to design the feedback loop in the time-domain by first modeling the DCO and TDC as a noisy plant in state-space form. Based on a Kalman observer of the plant, the proposed approach then generates optimal control signals that accurately account for the additive noise as well as the transport delay in the digital feedback system.	2009
44.	ITDSP14	Illumination sensing in led lighting systems based on frequency division multiplexing	This paper presents a novel gain and phase imbalances *I/Q* imbalance extraction technique that uses a Cholesky decomposition of the received signal's covariance matrix to extract the exact imbalances of the front-end.	2009
45.	ITDSP15	Reversible Re-sampling of integer signals	In this project, we prove that signal re sampling based on polynomial interpolation can be reversible even for integer signals, i.e., the original signal can be reconstructed lossless from the re-sampled data. By using matrix factorization, we also propose a reversible method for uniform shifted re-sampling and uniform scaled and shifted re-sampling.	2009

Technology : MATLAB
Domain : IEEE Transactions on Communication

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
46.	ITCM01	Novel Overlay/Underlay Cognitive Radio Waveforms Using SD-SMSE Framework to Enhance Spectrum Efficiency–Part II: Analysis in Fading Channels	ThisprojectextendstheoriginalSpectrally Modulated Spectrally Encoded (SMSE) framework to enable soft decision CR (Cognitive Radio) implementations that exploit both unused (white) and underused (gray) spectral areas.	2010
47.	ITCM02	On the Relationship Between the Multi-Antenna Secrecy Communications and Cognitive Radio Communications	This project introduces an innovative idea for MIMO (multiple-input multiple-output).It explores a new relationship between the secrecy channel and the recently developed cognitive radio (CR) channel, in which the secondary user transmits over the same spectrum simultaneouslywithmultipleprimaryusers.	2010
48.	ITCM03	Analysis and Compensation for Nonlinear Interference of Two High-Order Modulation Carriers over Satellite Link	This project analyses the characterization of nonlinear interference over multiple signals in satellite link of transponder high-power amplifier (HPA). The effectiveness of the proposed analysis and techniques is demonstrated via extensive simulations for high-order QAM and APSK modulations	2010
49.	ITCM04	Variable-Rate *M*-PSK Communications without Channel Amplitude Estimation	This project proposes new low complexity transceivers which can use Variable Rate transmissions in order to increase their spectral efficiency and it can be implemented in equal gain combining (EGC) diversity receivers.	2010
50.	ITCM05	Information Theoretic Capacity of Cellular Multiple Access Channel with Shadow Fading	This paper extends the original well-known model for the Gaussian Cellular Multiple Access Channel. It overcomes the problem of distance-dependent path loss and the log-normal shadow fading variations.	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
51.	ITCM06	Joint Estimation of I/Q Imbalance, CFO and Channel Response for MIMO OFDM Systems	This project studies the joint estimation of inphase and quadrature-phase (I/Q) imbalance, carrier frequency offset (CFO), and channel response for multiple-input multiple output (MIMO) orthogonal frequency division multiplexing (OFDM) systems using training sequences.	2010
52.	ITCM07	Asymptotic Error Analysis of Diversity Schemes on Arbitrarily Correlated Rayleigh Channels	This project derives the asymptotic error rate expressions for multi-branch equal gain combining and selection combining operating on arbitrarily correlated Rayleigh fading channels. It is valid for both coherent and noncoherent signalings.	2010
53.	ITCM08	Bandwidth Allocation for Fluid Input Generalized Processor Sharing Servers	Thisprojectimplementsanewscheduling algorithm which is Generalized processor sharing (GPS) to allocate the bandwidth of a queueing system for multi-class input traffic channel.	2010
54.	ITCM09	Noncoherent Frame Synchronization	This project focuses on frame synchronization for binary PSK signals in the presence of additive white Gaussian noise and phase offset due to imperfect carrier phase estimation.	2010
55.	ITCM10	A Dynamic System Approach for Radio Location Fingerprinting in Wireless Local Area Networks	This project focuses on the localization of any radio signal using Received Signal Strength (RSS) in dense multipath indoor environments.	2010
56.	ITCM11	Communication Coverage In Wireless Passive Sensor Networks	In this project, RF communication coverage in wireless passive sensor networks WPSN is analytically investigated. The required number of RF sources to obtain interference-free communication connectivity with the WPSN nodes is determined and analyzed in terms of output power and the transmission frequency of RF sources, network size, RF source and WPSN node characteristics.	2009

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
57.	ITCM12	Rayleigh Fading Networks: A Cross-Layer Way	This paper addresses Rayleigh fading networks, and in particular, wireless ad-hoc and sensor networks over Rayleigh fading channels In particular, we will first study the energy-efficiency and introduce a new parameter, Energy Cost Factor, as the counterpart of Transport Capacity in wireless transmission.	2009
58.	ITCM13	Channel coding for high-speed links: a systematic Look at code performance and system simulation	This project provides a deeper insight into joint error behaviors in high-speed links, extends the range of statistical simulation for coded high-speed links, and provides a case against the use of biased Monte Carlo methods in this setting. Finally, based on a hardware test bed, the performance of standard binary forward error correction and error detection schemes is evaluated, from which recommendations on coding for high-speed links are derived.	2009
59.	ITCM14	Training design for repetitive-slot-based CFO estimation in OFDM	The proposed power loading schemes consist of allocating more power to activated carriers with higher signal-to-noise ratios. Simulation-based performance results of the maximum likelihood estimator support the Cram´er-Rao bound CRB-based theoretical results.	2009
60.	ITCM15	Efficient detection ordering scheme for MIMO Transmission using power control	In this project, an efficient ordering scheme for an ordered successive interference cancellation detector is determined under the bit error rate minimization criterion for multiple antenna systems using transmission power control.	2009

Technology : MATLAB–Power Electronics
Domain : AC-AC Converter

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
61.	ITPW01	Linear Stabilization of a DC Bus Supplying a Constant Power Load: A General Design Approach	In this project, an oscillation compensation technique is proposed to improve the stability margin and thus, permits to reduce the dc-link capacitance value of an electrical system constituted by a dc power supply, an LC filter, and a constant power load. This is realized here by an actuator (inverter–permanent magnet synchronous motor).	2010
62.	ITPW02	Efficiency Oriented Design of ZVS Half Bridge Series Resonant Inverter With Variable Frequency Duty Cycle Control	This project efficiency of ZVS half-bridge series resonant inverter can be decreased under certain load conditions due to the high switching frequencies required. The proposed Variable Frequency Duty Cycle (VFDC) control is intended to improve the efficiency in the medium and low output power levels because of the decreased switching frequencies.	2010

Technology : MATLAB–Power Electronics
Domain : AC-DC Converter

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
63.	ITPW03	Space Vector Modulation for Two-Level Unidirectional PWM Rectifiers	This project presents the concepts for application of space vector modulation to two level unidirectional pulse width modulation (PWM) rectifiers, and a methodology for the use of this modulation is proposed and applied in three different groups of rectifiers. One switching sequence is proposed for all rectifiers in order to minimize the number of switch commutations and reduce the switching losses.	2010
64.	ITPW04	An Efficient AC-DC Step-up Converter for Low Voltage Energy Harvesting	This project presents an efficient ac-to-dc power converter which avoids the bridge rectification and directly converts the low ac input voltage to the required high dc output voltage at a higher efficiency. The proposed converter consists of a boost converter in parallel with a buck-boost converter.	2010
65.	ITPW05	A Bridgeless PFC Boost Rectifier With Optimized Magnetic Utilization	This project is the implementation of a bridgeless power factor correction (PFC) boost rectifier with low common mode noise. It employs a unique multiple- winding, multi core inductor to increase the utilization of the magnetic material.	2009
66.	ITPW06	Analysis and Implementation of a Hybrid High Power Factor Three-Phase Unidirectional Rectifier	In this project the conception and analysis of a unidirectional hybrid three phase rectifier suitable for medium and High-power applications are described. The rectifier is composed of a single-switch diode bridge boost-type rectifier in parallel with a pulse-width modulation (PWM) three-phase unidirectional boost Rectifier.	2009

Technology : MATLAB–Power Electronics
Domain : DC-AC Inverter

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
67.	ITPW07	Generalized Topologies of Multiple Single-Phase Motor Drives	This project investigates multiple single-phase converters for multiple single-phase motor drives from a dc-link voltage. The dc-link voltage is obtained from primary energy sources such as photovoltaic, battery, utility grid, or by a combination of these. This project points out the best configuration for different scenarios.	2010
68.	ITPW08	Design and Analysis of a Grid-Connected Photovoltaic Power System	This project deals with grid connected photovoltaic (PV) power system with high voltage gain is proposed. The proposed PV system employs a ZVT-interleaved boost converter with winding coupled inductors and active clamp circuits as the first power processing stage, which can boost a low voltage of the PV array up to a high dc-bus voltage.	2010

Technology : MATLAB–Power Electronics
Domain : DC-DC Converter

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
69.	ITPW09	A Modified SEPIC Converter for High Power Factor Rectifier and Universal Input Voltage Applications	This project presents high power factor rectifier suitable for universal line base on a modified version of the single-ended primary inductance converter (SEPIC). The voltage multiplier technique is applied to the classical SEPIC circuit, obtaining new operation characteristics as low switch voltage operation and high static gain at low line voltage. The new configuration allows the reduction of the losses associated to the diode reverse recovery current.	2010
70.	ITPW10	Soft Switched CCM Boost Converters With High Voltage Gain for High Power Applications	This project proposes a new soft-switched continuous conduction mode (CCM) boost converter suitable for high power applications such as power factor correction, hybrid electric vehicles, and fuel cell power conversion systems. The components voltage ratings and energy volumes of passive components of the proposed converter are greatly reduced compared to the conventional zero voltage transition converter.	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
71.	ITPW11	Design Oriented Analysis and Performance Evaluation of Buck PFC Front End	This project deals with universal-line ac/dc converters that require power factor correction (PFC), maintaining a high efficiency. Typically, a boost PFC front end exhibits 1%–3% lower efficiency at 100-V line compared to that at 230-V line. It is shown in this project that a buck PFC front end with an output voltage in the 80-V range can maintain a high efficiency.	2010
72.	ITPW12	Digital Combination of Buck and Boost Converters to Control a Positive Buck–Boost Converter and Improve the Output Transients	In this project a highly efficient and novel control strategy for improving the transients in the output voltage of a dc–dc positive Buck – boost converter, required for low-power portable electronic applications is implemented.	2009

Technology : MATLAB–Power Electronics
Domain : EMI FILTER

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
73.	ITPW13	EMI Noise Prediction for Electronic Ballasts	This project deals with the design of EMI-filters for converter systems is usually based on measurements with a prototype during the final stages of the design process. Predicting the conducted electromagnetic (EM) noise spectrum of a converter by simulation in an early stage has the potential to save time/cost and to investigate different noise reduction methods.	2010
74.	ITPW14	High-Density EMI Filter Design for DC-Fed Motor Drives	This project presents strategies to reduce both differential mode (DM) and common mode (CM) noise using a passive filter in a dc-fed motor drive. This project concentrates on the type of grounding and the components to optimize filter size and performance.	2010

VLSI

Technology : VLSI
Domain : CORE VLSI

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
1.	ITVL01	On Clustering of Undetectable Single Stuck-At Faults and Test Quality in Full-Scan Circuits	In this paper, We describe an extension to the set of target faults ,the extended set of target faults consists of double stuck-at faults that include an undetectable fault as one of their components.	2010
2.	ITVL02	Asynchronous Data-Driven Circuit Synthesis	This paper is described for synthesizing asynchronous circuits based on the Handshake Circuit paradigm but employing a data-driven, rather than a control-driven, style.	2010
3	ITVL03	A Multibank Memory-Based VLSI Architecture of DVB Symbol Deinterleaver	In this paper, an efficient symbol-deinterleaver architecture compliant with the digital-video-broadcasting (DVB) standard is proposed.	2010
4.	ITVL04	Implementation of a Self-Motivated Arbitration Scheme for the Multilayer AHB Busmatrix	In this paper, we propose the design and implementation of a flexible arbiter for the ML-AHB busmatrix to support three priority policies—fixed priority, round robin, and dynamic priority and three data multiplexing modes—transfer, transaction, and desired transfer length.	2010
5.	ITVL05	A Galois field-based logic synthesis with testability	In this paper introduces the generalized theory and a new fast efficient graph-based decomposition technique for the functions over finite fields defined over the set GF(N).	2010
6.	ITVL06	Fault Secure Encoder and Decoder for NanoMemory Applications	This paper proposed the encoder and decoder circuitry around the memory blocks have become susceptible to soft errors as well and must also be protected. We introduce a new approach to design fault-secure encoder and decoder circuitry for memory designs.	2009

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
7.	ITVL07	BZ-FAD: A Low-Power Low-Area Multiplier Based on Shift-and-Add Architecture	In this paper, a low-power structure called bypass zero, feed A directly (BZ-FAD) for shift-and-add multipliers is proposed. The architecture considerably lowers the switching activity of conventional multipliers.	2009
8.	ITVL08	A Fast VLSI Design of SMS4 Cipher Based on Twisted BDD S-Box Architecture	In this paper SMS4 is a 128-bit block cipher used in the WAPI standard for protecting data packets in WLAN. various S-box circuit architectures were evaluated firstly and the twisted BDD with m=4 was proved as the fastest one. A fast SMS4 cipher VLSI implementation was completed based on the twisted BDD S-box architecture	2009
9.	ITVL09	Power Optimization of Linear Feedback Shift Register (LFSR) for Low Power BIST	This paper proposes a low power Linear Feedback Shift Register (LFSR) for Test Pattern Generation (TPG) technique with reducing power dissipation during testing.	2009
10.	ITVL10	A Low-Power Delay Buffer Using Gated Driver Tree	This paper presents circuit design of a low-power delay buffer. Since delay buffers are accessed sequentially, it adopts a ring-counter addressing scheme. In the ring counter, double-edge-triggered (DET) flip-flops are utilized to reduce the operating frequency by half and the C-element gated-clock strategy is proposed.	2009
11.	ITVL11	A Full-Adder-Based Methodology for the Design of Scaling Operation in Residue Number System.	This paper proposes a methodology consists of a number of steps, which specify the minimum number of FAs for performing the scaling operation as well as the interconnections among the FAs.	2008

Technology : VLSI
Domain : CIRCUIT AND SYSTEM

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
12.	ITVL12	Low Complexity Digit Serial Systolic Montgomery Multipliers for Special Class of GF(2m)	This paper presents a digit serial systolic multiplication architecture for all-one polynomials (AOP) over $GF(2^m)$ for efficient implementation of Montgomery Multiplication (MM) Algorithm suitable for cryptosystem.	2010
13.	ITVL13	LUT Optimization for Memory-Based Computation	This paper presents LUT-based multiplier involves comparable area and time complexity for a word size of 8 bits, but for higher word sizes, it involves significantly less area and less multiplication time than the canonical-signed-digit (CSD)-based multipliers.	2010
14.	ITVL14	New Approach to Look-Up-Table Design and Memory-Based Realization of FIR Digital Filter	In this paper, we show that the look-up-table (LUT)-multiplier-based approach, where the memory elements store all the possible values of products of the filter coefficients could be an area-efficient alternative to DA-based design of FIR filter with the same throughput of implementation.	2010
15.	ITVL15	Improved Area-Efficient Weighted Modulo $2n + 1$ Adder Design With Simple Correction Schemes	This paper presents adders that can produce modulo sums within the range $\{0,2^n\}$, which is more than the range $\{0, 2^n - 1\}$ produced by existing diminished-1 modulo 2n + 1 adders	2010
16.	ITVL16	Pseudorandom Bit Generation Using Coupled Congruential Generators	This paper proposes the generation of a pseudorandom bit sequence (PRBS) using a comparative linear congruen- tial generator (CLCG) as follows. A bit "1" is output if the first linear congruential generator (LCG) produces an output that is greater than the output of the second LCG, and a bit "0"is output otherwise.	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
17.	ITVL17	Field programmable gate array prototyping of end-around carry parallel prefix tree architectures	In this paper, complete designed EAC adders that can work independently as a regular adder is proposed and present a comparative study on different parallel prefix trees which are used in the design of our new EAC adder targeting fieldprogramm-able gate array (FPGA) technology.	2010
18.	ITVL18	A Fast Hardware Approach For Approximate, Efficient Logarithm And Antilogarithm Computations	In this paper, we present an approach to compute log ( ) and antilog ( ) in hardware. Our approach is based on a table lookup, followed by an interpolation step. The interpolation step is implemented in combinational logic, in a FPGA, resulting in an area-efficient, fast design.	2009
19.	ITVL19	VLSI Design Of Diminished-One Modulo $2n + 1$ Adder Using Circular Carry Selection	This paper proposes a new circular-carry-selection technique that is applied in the design of an efficient diminished-one modulo $2n +1$ adder. The proposed modulo adder in the aforementioned paper consists of a dual-sum carry look-ahead (DS-CLA) adder, a circular carry generator, and a multiplexer, which can reduce both area–time (AT) and time–power (TP) products compared with previous modulo adders.	2009
20.	ITVL20	The Design And FPGA Implementation Of *Gf*(2^128) Multiplier For Ghash	In this paper, we propose a high-speed parallel *GF* (2^128) multiplier for Ghash Function in conjunction with its FPGA implementation.	2009
21.	ITVL21	A New Low Power Test Pattern Generator Using A Variable-Length Ring Counter	This paper proposes a new built-in self-test (BIST) test pattern generator (TPG) for low power testing is presented in this paper. The principle of the proposed approach is to reconfigure the CUT's partial-acting-inputs into a short ring counter (RC), and keep the CUT's partial-freezing-inputs unchanged during testing	2009

Technology : VLSI
Domain : IMAGE PROCESSING

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
22.	ITVL22	On Reducing Scan Shift Activity at RTL	This paper proposes a DFT-based approach for reducing circuit switching activity during scan shift is proposed. Instead of inserting additional logic at the gate level that may introduce additional delay on critical paths, the proposed method modifies the design at the register transfer level (RTL) and uses the synthesis tools to automatically deal with timing analysis and optimization.	2010
23.	ITVL23	Spread Spectrum Image Watermarking With Digital Design	This paper proposes a block based multiple bit spatial domain spread spectrum image watermarking scheme where a gray scale watermark image is represented by less number of binary digits using novel channel coding and spatial biphase modulation principle.	2009
24.	ITVL24	An improved RC6 algorithm with the same structure of encryption and decryption	In this paper, we propose an improved RC6 encryption algorithm that has the same structure of encryption and decryption. The proposed algorithm will be useful to the applications which require the same procedure of encryption and decryption such as light mobile devices and RFIDs.	2009
25.	ITVL25	A Compact AES Encryption Core On Xilinx FPGA	This paper presents an Advanced Encryption Standard (AES) encryption core on Field Programmable Gate Array (FPGA). The target device is Spartan-3 FPGA. We have designed an efficient and compact, iterative architecture with input and key, both of 128 bits.	2009

Technology : VLSI
Domain : COMMUNICATION

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
26.	ITVL26	New Architectural Design of CA-Based Codec	This paper proposes a codec which requires significantly less hardware and power for decoding compared to the existing techniques employed for Reed–Solomon (RS) Codes. Also it has been shown that the CA-based scheme can easily be extended for correcting more than two byte errors.	2010
27.	ITVL27	An Efficient 4-D 8PSK TCM Decoder Architecture	This paper presents an efficient architecture for a 4-D eight-phase-shift-keying trellis-coded-modulation (TCM) decoder. TCM encoders usually employ high rate convolutional codes that yield many more transition paths per state than low-rate codes do.	2010
28.	ITVL28	Design Space Exploration of Hard-Decision Viterbi Decoding: Algorithm and VLSI Implementation	This work analyzes the design complexity by applying most of the known VLSI implementation techniques for hard-decision Viterbi decoding to a different set of code parameters. The conclusions are based on real designs for which actual synthesis and layouts were obtained.	2010

EMBEDDED

Technology : EMBEDDED
Domain : ROBOTICS

S.NO	PROJECT CODE	PROJECT TITLE	DESCRIPTION	YEAR
1.	ITROB01	Ambient Intelligent Robot-Sensor Networks for Environmental Surveillance and Remote Sensing	To Monitoring and remote sensing of territories and lands. More specifically, to design new methods and technology with advanced cognitive capabilities of mobile robots.	2010
2.	ITROB02	Autonomous Agricultural Robot and Its Row Guidance	It is used to guide a robot platform which is designed independently to drive through the row crops in a field according to the design concept of open architecture.	2010
3.	ITROB03	Individual Plant Recognition Using the RGB Color Model	To create an individual plants recognition method, that can be efficient at variable lighting conditions where plant discrimination is realized using the RGB color model	2010
4.	ITROB04	Head Motion Controlled Power Wheelchair.	The objective of this project was to design a power wheelchair with a novel control system for quadriplegics with head and neck mobility.	2010
5.	ITROB05	Wireless Image Communication System for Fire-Fighting Robots	Fire-fighting robots can be useful for extinguishing a fire, and they are controlled by remote operators. In order to help these operators wireless image communication is used.	2010
6.	ITROB06	Design and Fabrication of Holonomic Motion Robot using DTMF Control Tones	The robot is an Omni-directional robot which can be maneuvered by a cell phone and can be used as a compact, and durable transport vehicle in cramped environments and in loading and unloading stations	2010

S.NO	PROJECT CODE	PROJECT TITLE	DESCRIPTION	YEAR
7.	ITROB07	7TH Sense. A Multipurpose Robot for Military	This project's aim is to provide a robotic system that can combat in wars and other military purposes. Also we are going to control the robot from remote location.	2009
8.	ITROB08	AnAutonomousRoboticSystem for Load Transportation	This project presents an overview of an autonomous robotic system for material handling. It makes the process of loading, unloading and transportation of materials	2009
9.	ITROB09	Analysis on Four Legged Multipurpose Rope Climbing Robot	This project is based on the stability in the application of rope climbing with minimum number of actuators, while other robots run on the plain surface.	2009
10.	ITROB10	Coal Mine Detect and Rescue Robot Technique Research	It is composed of mechanism, control system, communication system and sensors, etc. It can run in explosion environment, check gas, and carry some food and medicine to the miners in disaster.	2009
11.	ITROB11	Designing and Implementing an Intelligent Bluetooth-Enabled Robot Car	The robot car is wirelessly remote controlled via Bluetooth. In addition, a comparative analysis of the different Kinds of sensors, which are useful in robot cars, are provided.	2009
12.	ITROB12	Heavy Explosive Removing Robot Control Technique Research	Explosive removing robot is a kind of unmanned equipment to dispose dangerous explosives; This project introduces the research work of a heavy explosive removing robot.	2009
13.	ITROB13	Mechanical Design and Control System of a Miniature Surveillance Robot	This project introduces the Secret surveillance in tightly constrained spaces demanded in many military and civilian activities, such as cave-in enemy raids and indoor hostage rescue missions.	2009

S.NO	PROJECT CODE	PROJECT TITLE	DESCRIPTION	YEAR
14.	ITROB14	Visual Servo Control of a Three Degree of Freedom Robotic Arm System	This Project deals with a design of robotic equipment which can be used to point a coordinate in a sphere. it is presently a direction to be integrated with the Unmanned Ground Vehicle (UGV) to serve as surveillance unit in the combat hot zone, such as peace keeping mission.	2008
15.	ITROB15	Design and Implementation of a Stair-Climbing Robot	In the project, a robot is designed to move up and-down stairs to provide service for the elders. The robot consists of a main body for moving, a front arm and a rear arm for moving up and down stairs	2008

Technology : EMBEDDED
Domain : AUTOMATION

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
16.	ITAM01	CAN Bus Application in Automotive Network Control	In this project a network system is developed to control the devices. We use CAN protocol to communicate with transmitter section and receiver section.	2010
17.	ITAM02	Design of Automatic Meteorological Data Acquisition System Based on ARM and CAN Bus	Using ARM processors and CAN protocol, we will intimate the weather condition of environment. Weather condition is monitored by metrological sensors.	2010
18.	ITAM03	Design of the Measurement Node of the Grain Quantity Monitoring System Based on the CAN-bus	According to the pressure sensor values, quantity of grain is calculated. This value is sent through CAN bus to receiver section.	2010
19.	ITAM04	Implementation of Interface between Vehicle Bus Network and On-vehicle Information System	Here we introduce two new protocols (i.e.) LIN, CAN. Using these protocols vehicle parameters will be monitored and controlled.	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
20.	ITAM05	An Automated Remote Messaging System using GSM Communications	Using this project, any occurrences of road construction, repairs, changing lanes, motorists can be alert via GSM modem.	2009
21.	ITAM06	Application and Implementation of CAN Bus Technology in Industry Real-time Data Communication	This paper analyzes the functions and characteristics of embedded real-time operation system VxWorks and CAN field bus, and makes use of CAN field bus to realize the data communication between embedded real time operation system.	2009
22.	ITAM07	Distributed Sensor for Steering Wheel Grip Force Measurement in Driver Fatigue Detection	This smart project uses a microcontroller and a grip sensor connected to it using CAN protocol for a safe drive in case of any tiredness for the driver.	2009
23.	ITAM08	The integrated unit for MEMS based pressure measurement	This project involves a MEMS sensor to calculate the pressure and is connected to the microcontroller through ADC using I2C protocol. The pressure values can be monitored in a PC via UART.	2009

Technology : EMBEDDED
Domain : WIRELESS

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
24.	ITWI01	Wireless Measurement and Control System for Environmental Parameters in Greenhouse	In this project we can control and adjust the environmental parameters in every greenhouse, using temperature and humidity sensor through RF technology.	2010
25.	ITWI02	ZigBee - based Vehicle Access Control System	In this paper, a set of vehicle access control system based on ZigBee wireless technology. ZigBee coordinator and its terminal nodes installed respectively in the entrance of the district and the vehicles, to form a ZigBee wireless sensor network.	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
26.	ITWI03	Design of Miniaturized Wireless Sensor Mote and Actuator for Building Monitoring and Control	In this paper, a wireless sensor network mote hardware design and implementation are introduced for building deployment application. The core of the mote design is based on the 8 bit AVR microcontroller, and 2.4 GHz wireless communication.	2010
27.	ITWI04	Remote-Controllable and Energy-Saving Room Architecture based on ZigBee Communication	This project uses a ZigBee controller which transmits the data regarding the people availability in a room, to a switch which controls the devices n that room. The presence of people room in determined by IR sensors.	2009
28.	ITWI05	Remote power on/off control and current measurement for home Electric outlets based on a low-power embedded board and ZigBee Communication	This project uses a ZigBee which is connected to a microcontroller, to transmit the power details and to cutoff the supply in case of any fluctuations or overload.	2009

Technology : EMBEDDED
Domain : GSM AND GPS

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	Year
29.	ITGP01	A Remote Home Security System Based on Wireless Sensor Network and GSM Technology	In this project, we can control many electrical devices in our house form remote place through wireless communication.	2010
30.	ITGP02	GPS-GSM Integration for Enhancing Public Transportation Management Services	This project proposes and implements a solution for enhancing public transportation management services based on GPS and GSM. The system consists of four modules: BUS Station Module, In-BUS Module, BASE Station Module and BUS Stop Module.	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	Year
31.	ITGP03	Identifying Objects Using RF Transmitters and Receivers, and Retrieving Data Using GSM.	In this project we can identify the lost objects through RF technology using GSM modem.	2010
32.	ITGP04	Design Of Intelligent Traffic Light Controller Using Embedded System.	In this project we can control the heavy traffic from remote place through wireless technology (GSM). Hence it is very efficient than the conventional traffic control.	2010
33.	ITGP05	Design of an Intelligent SMS based Remote Metering System	In this paper, a technique for remotely reading the electricity meter readings using Short Message Service (SMS). Existing Global System for Mobile communications (GSM) networks have been used for sending and receiving SMS.	2009
34.	ITGP06	A Multi-Channel Remote Controller For Home and Office Appliances	This project presents the design and implementation of a multi-channel remote controller (MCRC) for home and office appliances. The aim of this work is to integrate several existing remote controller channels in a common platform.	2009
35.	ITGP07	Remote monitoring system of temperature and humidity based on GSM	This paper proposes a remote monitoring system of temperature and humidity based on GSM technology.	2009
36.	ITGP08	Body Temperature and Electrocardiogram Monitoring Using an SMS-Based Telemedicine System	In this project, the health parameters such as temperature, ECG are monitored using sensor. If any abnormality occurs a message is send to the corresponding person through GSM modem.	2009
37.	ITGP09	Design & Development of a GSM Based Vehicle Theft Control System	In this project, we can employ a GSM modem attached with to a microcontroller which controls the engine. If we send a message to the modem we can control the engine even by stopping it.	2009

Technology : EMBEDDED
Domain : CONSUMER ELECTRONICS

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	Year
38.	ITCE01	ATM terminal design is based on fingerprint recognition	For the traditional ATM terminal customer recognition systems only rely on bank cards, passwords, and such identity verification methods which measures are not perfect and functions are too single. Here we add fingerprint image to increase the security.	2010
39.	ITCE02	A New scheme for Management of Cinema Multiplex System in a cost effective way by Using RFID	In this paper, a new scheme of ticket booking in the cinema halls has been discussed that will not only serve certain business issues, but also take care of security of the business. For our scheme, we have taken the aid of the latest wireless technology of Radio Frequency Identification.	2010
40.	ITCE03	Real-Time Automization Of Agricultural Environment for Social Modernization of Indian Agricultural System	In this paper, using ARM7 and GSM is focused on automizing the irrigation system for social welfare of Indian agricultural system and also to provide adequate irrigation in particular area.	2010
41.	ITCE04	Wireless Fingerprint Attendance System Based on Zigbee Technology	Aiming at the disadvantages of traditional wire attendance system, a design method of wireless fingerprint attendance system based on Zigbee technology is proposed.	2010
42.	ITCE05	Control of Remote Domestic System Using DTMF	We introduce the smart household control system realization procedure based on DTMF remote transmission. In this project, using AVR micro controller and DTMF technology, We will control household appliances through mobile phone.	2009

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	Year
43.	ITCE06	Development of Solar Power Based Automatic Sunlight Adjusting System for Home Care	This paper has proposed an automatic sunlight adjusting system (ASAS) using solar power for the shutter action control. The proposed system can keep sunlight moderate as desired in the indoor room.	2009
44.	ITCE07	Distributed Guarding and Alarming System Based on Telephone Automatically Dialing and Remote Communication Technology	In this project, Circumstance data of building such as fire accident smoke, robber's body information, temperature and humidity signal, etc is acquired by different kinds of sensor unit and automatically dialing-alarming when there is unusual condition.	2009
45.	ITCE08	Smart Digital Door Lock for the Home Automation	We propose a digital door lock based home automation system, which exploits the full capacity of Zigbee sensor network by integrating home security with home automation.	2009

Technology : EMBEDDED
Domain : WEB BASED

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	Year
46.	ITWB01	Design of Wireless Embedded Thin Web Server Based on Zigbee	This paper introduces the hardware and software structure of an embedded thin web server. Different from other wired embed web servers, this embedded thin web server is build on zigbee, a wireless ad hoc network communication technology.	2010
47.	ITWB02	A web-based distributed measurement system for electrical Power Quality monitoring.	This paper presents an innovative low-cost measurement system, as well as investigates the challenges and trends in the development of distributed PQ measurement systems using smart sensors.	2010
48.	ITWB03	Distributed Remote Temperature Monitoring and Acquisition System Based on CAN Bus.	The system platform can be applied to certain equipments of the power system, intelligent agriculture remote monitoring, intelligent furniture monitoring, intelligent warehouse monitoring.	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	Year
49.	ITWB04	A Design of Bi-verification Vehicle Access Intelligent Control System Based on RFID.	In this paper, an improvement design to the current widely-used vehicle monitoring systems, which utilize the RFID technology to carry on is presented in details.	2009
50.	ITWB05	Infant Management System Based on RFID and Internet Technologies	We introduce the smart household control system realization procedure based on DTMF remote transmission. In this project, using AVR micro controller and DTMF technology, We will control household appliances through mobile phone.	2009
51.	ITWB06	Remote Control System Design based on Web Server for Digital Home	This project makes the system more efficiency and faster to achieve real time control. Detailed implementation for client, web server and hardware design is presented in this paper. We also check their status in real-time from anywhere through our system.	2009
52.	ITWB07	Research and Implement of Ethernet Interface Based on Embedded System	In this project, we introduce the Ethernet technology and embedded system theory, using Ethernet controller to design the Ethernet interface module. The system interface will widely use in various applications and has good prospects.	2009

Technology : EMBEDDED
Domain : ELECTRICAL

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	Year
53.	ITEEE01	A New Intelligent Remote Control System for Home Automation and Reduce Energy Consumption.	This paper presents the design and implementation of an internet-based smart remote control system for home automation, dedicated to power management that adapts power consumption to available power resources according to user comfort and cost criteria.	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	Year
54.	ITEEE02	A Novel Technique for Preventing Current Method Electricity-stealing.	In this project we can recognize the normal, opened or shorted state of current transformer secondary side circuit correctly and we can prevent current method electricity-stealing effectively.	2010
55.	ITEEE03	An Embedded Electric Meter Based On Bluetooth Data Acquisition System.	We design an embedded electric meter based on Bluetooth data acquisition system in view of the complicated cables and accident potential in the process of data acquisition of electric meter.	2010
56.	ITEEE04	Design of Substation Temperature Monitoring System Based on Wireless Sensor Networks.	Using the features and technology of wireless sensor networks such as distributed and self-organization to build substation temperature monitoring, which can monitor the temperature and transmitted using Zigbee.	2010
57.	ITEEE05	Wireless Health Monitoring System for Vibration Detection of Induction Motors.	This project proposes and develops a Zigbee based wireless sensor network for health monitoring of induction motors. The vibration signals obtained from monitoring system are processed with signal processing techniques.	2010
58.	ITEEE06	Intelligent monitoring and overheating protection system for motor.	This project makes the system more efficiency and faster to achieve real time control. Detailed implementation for client, web server and hardware design is presented in this paper. We also check their status in real-time from anywhere through our system.	2009
59.	ITEEE07	Effective Remote Control of Electric Motors Using GSM Technology.	Protection and monitoring has to be done telemetrically, thus moving away from the traditional approach of connecting to a control room with an operator constantly monitoring the process.	2009

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	Year
60.	ITEEE08	Microcontroller based smart charge controller for standalone Solar photovoltaic power systems.	This project presents a cost efficient PV charge controller with the function to disconnect and reconnect battery and load during battery overcharging or under discharging.	2009
61.	ITEEE09	Design and Implementation of a Socket with Low Standby Power.	In this project, we present a way to reduce the standby power of a socket. Our socket supplies the appliances with power when the user turns them on. When the user turns them off, our socket shuts the electric power off and reduces the standby power to zero.	2009
62.	ITEEE10	Design and Implementation of a RFID-based Power Meter and Outage Recording System.	This paper tries to design and implement a RFID-based power meter and outage recording system.	2008

Technology : EMBEDDED
Domain : BIO MEDICAL

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
63.	ITBIO01	GSM Based ECG Tele-Alert System	In this project, the health parameters such as ECG are monitored using sensor. If any abnormality occurs a message is send to the corresponding person through GSM modem.	2010
64.	ITBIO 02	Preventing Cot Death for Infants in Day Care	It is the intention of this paper to present a prototype system which utilizes miniature wireless sensor devices which could allow online monitoring of infants at home, as well as in large day care centers.	2010
65.	ITBIO 03	Development of an Ambulatory Multi-parameter Monitoring System for Physiological Stress Related Parameters.	This paper will concern the hardware overview, design and implementation of the monitoring system in a physiological stress related application.	2010
66.	ITBIO 04	A Novel MEMS Respiratory Flow Sensor	The sensor was demonstrated to be sensitive enough to detect the respiratory flow rate, and the relationship between flow rate and sensed voltage is quite linear. If one can integrate the sensor with its sensing circuit into a single chip, the cost of a pneumotach system can be greatly reduced	2010

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION	YEAR
67.	ITBIO 05	Design and Simulation of a Multi-Function MEMS Sensor for Health and Usage Monitoring	This paper proposes a fault tolerant sensor architecture and demonstrates the feasibility of realising this architecture through the design of a dual mode humidity/pressure MEMS sensor with an integrated temperature function.	2010
68.	ITBIO06	Wireless Wearable Pulse Oximeter for Health Monitoring using Zigbee Wireless Sensor Network	In this project, we are going to monitor and measures the oxygen saturation of a patient's blood using sensor. If any abnormality occurs then the data transferred through wirelessly.	2009
69.	ITBIO07	Drug Management: How to Provide Drug on Assigned Time?	In this paper, with the use of microcontroller (PIC16F877A), we designed the system which delivers drugs to the patient on assigned time and the other is by sending radio frequencies from control center and receiving them in drug delivery system.	2009
70.	ITBIO08	Wireless Transmission Design for Health Monitoring at Neonatal Intensive Care Units	In this paper, we propose the application of wireless transmission technology for neonatal monitoring at NICU. To demonstrate the design concept a prototype wireless transmission system is built using the microcontroller and RF communication.	2009

Technology : EMBEDDED
Domain : NON-IEEE-ROBOTICS

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION
1.	NITROB01	Wireless Robot with bidirectional communication for temperature monitoring	This robot is going to operate with Wireless technology. The Robot is responded with the acknowledgement when the command is executed. The environmental temperature is monitored
2.	NITROB02	Crack Detector Robot for Railway Track inspection	The project which inspects any of the cracks occurred in the railway tracks and informs it to the corresponding authorities.

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION
3.	NITROB03	wheel chair robot for physically challenged persons using voice control	Earlier with the help of the humans only the wheel chairs would run, here using the voice control the wheel chair is automatically moved without the intervention of human.
4.	NITROB04	MATLAB based intruder detection and shooting robot	Using the image processing, the intruder was detected, the robot system here used is to shoot that intruder. It is basically used for surveillance process.
5.	NITROB05	DTMF based control of pick and place robot	Using this project without intervention of any human we going to move the objects from one place to other, here these processes are done by using the DTMF which controls the robotic arms.

Technology : EMBEDDED
Domain : NON-IEEE-WIRELESS

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION
6.	NIWI01	VB based Voice automation using Zigbee.	This project composes of a VB voice recognition SDK engine based automation signal generation and wireless control transmission using Zigbee.
7.	NIWI02	RSA encryption by using Zigbee.	In this project, we design a secured wireless data transmission system using RSA Algorithm between systems.
8.	NIWI03	Real Time wireless data measurement and PC interface using Zigbee.	The server client like architecture based control of remote PC is established using a Zigbee transceiver for client end automation and control.
9.	NIWI04	Zigbee applied 2.4 GHz File Transfer between systems for efficient Throughput.	In this project the file transfer between two systems is felicitated by Z-Modem Protocol over a Zigbee Wireless channel using 8051 MCU to increase the throughput.
10.	NIWI05	Zigbee enabled Home automation System.	The home automation using an industry standard Zigbee protocol is established for the actuation and control of appliances in home with the help of microcontroller unit.

Technology : EMBEDDED
Domain : NON-IEEE- AUTOMATION

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION
11.	NIA01	SPI protocol enabled SD/MMC card configured wireless parameter device limit setting and alert system.	In this project, we deal with the design of a wireless data acquisition and file entry on an MMC card using RF and SPI Protocols.
12.	NIA02	CAN Protocol Implementation To Enable Robust Serial Communication For Automotive Applications.	A long range routed Serial Device control and actuation system implementation using CAN.
13.	NIA03	Reservoir Water Filling System Automation Using 8051 MCU.	This project employs a closed loop water level process control of a reservoir using a Hydrologic Sensor.
14.	NIA04	Residential Security And Voice Intimation.	Home security based on level crossing, gas, fire detectors are used to trigger alert information with voice call to a cell phone in case of any emergency.
15.	NIA05	CAN Base Automated Car Maneuvering System.	The unmanned control of a car ride is achieved by the use of proximity sensors onto a CAN controller.

Technology : EMBEDDED
Domain : NON-IEEE-BIO MEDICAL

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION
16.	NIBI001	Advance Diagnostic Tool For Respiration Rate And Cough Indication Through Landline	In this project we will get information whenever the normal respiration rate changes.
17.	NIBIO02	Eye blink sensor based recovery intimation for ICU patients.	For ICU patients we will monitor his eye blink count using eye blink sensor. If there is any eye blink found we will get intimation
18.	NIBIO03	Embedded System Used for One Biomedical Application	In this project we will monitor biomedical characters of a patient using 8051 micro controller and ADC 0808.
19.	NIBIO04	Temperature and Heartbeat monitoring of patient and abnormality intimation through landline.	Patient's heart beat and body temperature is monitored and intimating through land line using 8051.
20.	NIBIO05	Monitoring ECG level for heart patient with LCD display	Patient's ECG level is monitored continuously and displayed in Liquid Crystal Display.

Technology : EMBEDDED
Domain : NON-IEEE-GSM&GPS

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION
21.	NIGSM01	An Innovative GSM DAQ System with SMS Query.	This project presents an innovative GSM DAQ Query and electrical parameter retrieval system using SMS.
22.	NIGSM02	GSM Based Home Automation and Control System using SMS.	This project helps us to control the home appliances with the help of SMS command through GSM.
23.	NIGSM03	Micro controller based Simple interactive mobile application system using GSM.	In this project, we are going to construct a simple mobile using GSM modem and simple keypad.
24.	NIGSM04	A novel Approach on the Hydrologic Remote Measurement System in Coalmining Industry	In this system, the temperature and Water level information of the ground water around the coal mine could be gathered efficiently. The gathered information can be transmitted through a GSM modem.
25.	NIGSM05	GPS composed Intelligent Bus location determination with voice briefing.	This system informs the passengers on a bus about the bus stop information using voice by GSM, 8051 MCU.

Technology : EMBEDDED
Domain : NON-IEEE-PC BASED

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION
26.	NPC01	Finger Print Based Driver Authentication System for Vehicles.	In this project, we can maintain the attendance system securely using Finger print technology.
27.	NPC02	Ultrasonic based human eye for blind.	This project features the use of ultrasonic sensor equipment as a guide stick for blind persons by functioning as a obstacle proximity sensor.
28.	NPC03	RFID based library database management and search tool implementation.	Maintaining the database in the library using RFID and microcontroller for easy and secured accessing of books in the library.
29.	NPC04	Multi channel temperature monitoring in fabrication industries.	In this project, we can monitor the temperature at various locations in the fabrication industries.
30.	NPC05	PC to PC client based wireless zigbee bridge for control and appliances automation.	The project deals with the data acquisition of parameters using Zigbee onto a PC using a VB GUI which might be used indicative purpose.

Technology : EMBEDDED
Domain : NON-IEEE- CE-ID

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION
31.	NCE01	Unmanned petrol bunk system using RFID.	We use RFID reader and RFID tag in petrol bunk. Here we use EEPROM in PIC micro controller to store the amount.
32.	NCE02	GSM based irrigation water control system.	This Project deals with an Irrigation System For Remote Places using GSM.
33.	NCE03	RFID And Keypad Based Multi Level Access Control And Security System	Using RFID cards we control the several devices. Here using passwords the security processes are done, keypads are used here for giving passwords.
34.	NCE04	Image Processing based Automatic Money Depositor.	In this project using image processing we capture of the images of the rupees and deposit the money in ATM machines.
35.	NCE05	Unmanned Toll Collector using RFID	Using RFID reader and RFID tag we can pay the money in the toll gates without the intervention of man. Here we use EEPROM in PIC micro controller to store the amount.

Technology : EMBEDDED
Domain : NON-IEEE- ELECTRICAL

S.NO	PROJECT CODE	PROJECT TITLES	DESCRIPTION
36.	NEEE01	Power plant data acquisition system.	In this project we will monitor the important parameters of industries which are used to define the safety parameters of machineries.
37.	NEEE02	Prepaid Electricity Billing System Using GSM Modem.	This project is used for recharging the electricity charges and to intimate the customer regarding the end of the validity in SMS with the help of GSM modem.
38.	NEEE03	Power Level Monitoring And Voice Intimation Through Phone.	The voltage, current and power is calculated with corresponding sensors and the normality of each is intimated through voice alert according to the request.
39.	NEEE04	Automatic switch gear system for avoiding fluctuations in power plant.	In this project, we will give power supply to the devices whenever the actual power supply is changed due to fluctuations.
40.	NEEE05	Industrial protection system using temperature, smoke sensors and light dependent resistor.	The industrial vulnerabilities such as temperature, smoke and intrusion are rigorously monitored and alert is raised by an RF alarm circuit in case of any abnormality in parameters.

For Enquire Contact : Spiro - Professional Student Academy Training Division Unit of
Spiro Solution Pvt Ltd
#78, 3rd Floor, Usman Road, T. Nagar,
Chennai - 17. (Upstairs of Hotal Saravana Bhavan)
Mobile : 9791 044 044, 9176 644 044.
E-Mail : projects@stupros.com.
Website : www.stupros.com