



# SPIRO

**Solutions Pvt. Ltd**

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

**AN ISO 9001:2008 CERTIFIED R&D COMPANY**

**PROJECT TITLES GUIDE**  
**2008-2009**

## TABLE OF CONTENTS

<b>ABOUT STUPROS</b>	3
<b>MATLAB</b> (MATLAB IEEE PAPERS)	
IEEE TRANSACTIONS ON IMAGE PROCESSING	4
IEEE SIGNAL PROCESSING	5
IEEE TRANSACTIONS ON COMMUNICATION	6
IEEE TRANSACTION ON POWER ELECTRONICS	6
<b>VLSI</b>	
IEEE –VLSI	7
<b>EMBEDDED</b>	
IEEE BASED PROJECTS	8
IEEE /IET 2008-RF-ID	9
IEEE TRANSACTIONS ROBOTICS	9
IEEE TRANSACTIONS ON RTOS(REAL TIME OPERATING SYSTEMS )	10
BIO-MEDICAL	10
AUTOMATION	11
INSTRUMENTATION SCADA AND POWER ELECTRONICS	12
CONSUMER ELECTRONICS	12
<b>BIO - INFORMATICS</b>	
RESEARCH	13

## About Stupros

The Stupros, a Subsidiary of Spiro Technologies & consultant Pvt. Ltd. It is an exclusive portal for students. 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 Stupros are 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, Stupros 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.

# MATLAB

## IEEE PAPER TITLES

Eligibility: -

- ✓ M.E (CS, SOFT ENGG, NETWORKING)
- ✓ B.E & B.TECH (I.T, CSE)
- ✓ M.SC, MCA

Technology : MATLAB

Domain : IEEE TRANSACTIONS ON IMAGE PROCESSING

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1.	ITIMP01	Adaptive bilateral filter for sharpness enhancement and noise removal	2008
2.	ITIMP02	A synopsis of recent work in edge detection using the dwt	2008
3	ITIMP03	Robust global motion estimation oriented to video object segmentation	2008
4.	ITIMP04	Local features for enhancement and minutiae extraction in fingerprints	2008
5	ITIMP05	Image diffusion using saliency bilateral filter	2008
6.	ITIMP06	biometric inspired digital image steganography	2008
7.	ITIMP07	Automated estimation of the upper surface of the diaphragm in 3-d ct images	2008
8.	ITIMP08	Invariant image watermarking based on statistical features in the low-frequency domain	2008
9.	ITIMP09	Transform methods for remote sensing environmental monitoring	2008
10.	ITIMP10	A modified probabilistic neural network for partial volume segmentation in brain mr image	2007
11.	ITIMP11	Automatic exudates detection from non-dilated diabetic retinopathy	2006
12.	ITIMP12	3-d model-based vehicle tracking system	2005
13.	ITIMP13	Dynamic signature verification using discriminative training	2005

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
14.	ITIMP14	Salt-and-pepper noise removal by median-type noise detectors and detail-preserving regularization	2005
15.	ITIMP15	Fingerprint image enhancement using filtering techniques	2005
16.	ITIMP16	Multiple image sharing based on color visual cryptography	2005
17.	ITIMP17	An adaptive dct domain visible watermarking technique for protection of publicly available images	2005
18.	ITIMP18	Automatic vehicle identification by plate recognition	2005
19.	ITIMP19	Signal processing method for improving the signal-to-noise ratio of a noise-dominated channel and a matched-phase noise filter for implementing	2005
20.	ITIMP20	Method and apparatus for conducting point-of-sale transactions using voice recognition	2005

Technology : MATLAB  
 Domain : IEEE -SIGNAL PROCESSING

S.NO	PROJECT CODE	PROJECT TITLES
1.	ITDSP01	Robust Speaker Recognition in Noisy Conditions
2.	ITDSP02	Vertical Handoff Decision Algorithm for UMTS-WLAN
3	ITDSP03	Extraction of Fetal Electrocardiogram Using Adaptive Neuro-Fuzzy Inference Systems
4.	ITDSP04	Robust Text-Independent Speaker Verification Using Genetic Programming
5	ITDSP05	MBER Space-Time Decision Feedback Equalization Assisted Multi-user Detection for Multiple Antenna Aided SDMA Systems
6.	ITDSP06	Performance Analysis of Multicarrier DS CDMA Systems
7.	ITDSP07	Adaptive DSCDMA Receiver for Multi-user Detection
8.	ITDSP08	Space Time Coded System For Wireless Communication

Technology : MATLAB

Domain : IEEE TRANSACTIONS ON COMMUNICATION

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1.	ITCM01	Reliable Adaptive Modulation and Interference Mitigation for Mobile Radio Slow Frequency Hopping Channels	2008
2.	ITCM02	End-to-End BER Analysis for Dual-Hop OSTBC Transmissions over Rayleigh Fading Channels	2008
3	ITCM03	Low-Complexity Localized Walsh Decoding For CDMA Systems	2008
4.	ITCM04	Frequency Offset Estimation for MB-OFDM-based UWB Systems	2008
5	ITCM05	Design and Analysis of Bit Interleaved Coded Space-Time Modulation	2008
6.	ITCM06	Pre-DFT Processing for MIMO-OFDM Systems with Space-Time-Frequency Coding	2007
7.	ITCM07	Synchronization and Cell-Search Technique Using Preamble for OFDM Cellular Systems	2007
8.	ITCM08	Space-Frequency Coded BS-CDMA for Broadband Mobile Communication Systems	2007

Technology : MATLAB

Domain : IEEE TRANSACTION ON POWER ELECTRONICS

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1.	ITPW01	PSPICE simulation and implementation of closed loop controlled ZVS LCL push-pull DC-DC converter	2008
2.	ITPW02	Synthesis of general impedance with simple dc/dc converters for power processing applications	2008
3	ITPW03	Synchronization Technique for Random Switching Frequency Pulse-Width Modulation	2008
4.	ITPW04	A Modified ZVS Flyback Resonant Inverter for Induction Cooking Applications	2008
5	ITPW05	Simulation of a novel ZVT technique based boost PFC converter with EMI filter	2008



# VLSI

## IEEE PAPER TITLES

Eligibility: -

- ✓ M.E(COMMUNICATION,POWER ELECTRONICS,EMBEDDED,APPLIED ELECTRONICS,VLSI)
- ✓ B.E(ECE,EEE,E&I,ICE,TELECOM,BIO-MEDICAL)
- ✓ M.SC(ELECTRONICS,BIO MEDICAL)

Technology : VLSI

Domain : IEEE -VLSI

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1.	ITVL01	Reconfigurable Architecture for Network Flow Analysis	2008
2.	ITVL02	The Reconfigurable Instruction Cell Array	2008
3	ITVL03	Cost-Efficient SHA Hardware Accelerators	2008
4.	ITVL04	Fast Elliptic Curve Cryptography on FPGA	2008
5	ITVL05	System Architecture and Implementation of MIMO Sphere Decoders on FPGA	2008
6.	ITVL06	Applying Dynamic Reconfiguration for Fault Tolerance in Fine-Grained Logic Arrays	2008
7.	ITVL07	A Fuzzy Optimization Approach for Variation Aware Power Minimization During Gate Sizing	2008
8.	ITVL08	A Full-Adder-Based Methodology for the Design of Scaling Operation in Residue Number System	2008
9.	ITVL09	Blind Separation of Superimposed Shifted Images Using Parameterized Joint Diagonalization	2008
10.	ITVL10	Efficient Communication Between the Embedded Processor and the Reconfigurable Logic on an FPGA	2008
11.	ITVL11	Minimization of Switching Activities of Partial Products for Designing Low-Power Multipliers	2007
12.	ITVL12	A Novel Multiplexer-Based Low-Power Full Adder	2007
13.	ITVL13	Registers for Phase Difference Based Logic	2007
14.	ITVL14	Logical Reversibility of Computation	2007
15.	ITVL15	A coding framework for low power address and data busses	2007
16.	ITVL16	Spread Spectrum Signaling for Speech Watermarking	2007
17.	ITVL17	A Lightweight Encryption Method Suitable For Copyright Protection	2007
18.	ITVL18	A C-based Algorithm Development Flow for a Reconfigurable Processor Architecture	2007
19.	ITVL19	Concurrent Error Detection in Reed–Solomon Encoders and Decoders	2007
20.	ITVL20	VLSI Implementation of Multiplier-Free Low Power Baseband Filter for CDMA Systems	2007

# EMBEDDED

Eligibility: ✓

- ✓ M.E(EMBEDDED, COMMUNICATION)
- ✓ B.E(ECE,EEE,E&I,ICE,TELECOM,BIO-MEDICAL)
- ✓ M.SC(ELECTRONICS,BIO MEDICAL)
- DIPLOMA (ECE,EEE & MECHETRONICS)

Technology : EMBEDDED

Domain : IEEE BASED PROJECTS

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1.	ITEMB01	Development of pedestrian-to-vehicle communication system prototype for pedestrian safety using both wide-area and direct communication	2008
2.	ITEMB02	Automated Vehicles For Physically and Visually Challenged	2008
3.	ITEMB03	Intelligent Residential Security Alarm and Remote Control System Based On Single Chip Computer	2008
4.	ITEMB04	Robust and Efficient Password-Authenticated Key Agreement Using Smart Cards	2008
5.	ITEMB05	Broadband Electromagnetic Induction Sensor for Detecting Buried Landmines	2008
6.	ITEMB06	Low-Cost and High Sensitive Microcontroller Based Data Acquisition System for Renewable Energy Sources	2008
7.	ITEMB07	An On-line Monitoring System of Temperature of Conductors and Fittings Based on GSM SMS and Zigbee	2008
8.	ITEMB08	A tactile System for Informing the Blind on Direction of a Walk	2008
9.	ITEMB09	Efficient Cost-Based Tracking of Scheduled Vehicle Journeys	2008
10.	ITEMB10	Design and Implement of An Intelligent Coal Mine Monitoring System	2007
11.	ITEMB11	A Deepwater Tsunami Surveillance System for Malaysia	2007



Technology : EMBEDDED  
 Domain : IEEE /IET 2008-RF-ID

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1.	ITRF01	ASSIST - Automated System for Surgical Instrument and Sponge Tracking	2008
2.	ITRF02	Tamper Detection in Enabled Supply Chains Using Fragile Watermarking	2008
3.	ITRF03	SIP-RLTS: An RFID Location Tracking System Based on SIP	2008
4.	ITRF04	Shopping Path Analysis and Transaction Mining Based on RFID Technology	2008
5.	ITRF05	Measuring and Transmitting Vital Body Signs Using MEMS Sensors	2008
6.	ITRF06	Application Fields of RFID in Health Safety and Environment Management	2008
7.	ITRF07	Low Cost Smartcard ticketing system	IET 2008
8.	ITRF08	Requirements for national EVI Systems	IET 2008
9.	ITRF09	Vehicle Infrastructure Integration (VII) in the US - Enhancing Safety, Enabling Mobility	IET 2008

Technology : EMBEDDED  
 Domain : ROBOTICS BASED PROJECTS

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1.	ITROB01	Robotic Arm with Four Degrees of Freedom	2008
2.	ITROB 02	Building a Smart Home Environment for Service Robots Based on RFID and Sensor Networks	2007
3.	ITROB 03	Snake Fighter - Development of a Water Hydraulic Fire Fighting Snake Robot	2007
4.	ITROB 04	Live Human Detection robot for Earth Quake Areas	--
5.	ITROB 05	Industrial Spy Robot With Image Monitoring	--
6.	ITROB 06	Intelligent Fire Detection And Fighting Robot	
7.	ITROB07	Automatic 360° Pick And Place Robot Controlled By PC.	
8.	ITROB08	SRH-1 Mobile Surveillance Robot for remote Area	--
9.	ITROB09	Intelligent Gas Detection Robot	--

**Technology : EMBEDDED**
**Domain : IEEE TRANSACTIONS ON RTOS(REAL TIME OPERATING SYSTEMS )**

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1.	IRTOS01	A hardware/software environment for real time data acquisition and control	2008
2.	IRTOS02	Implementing priority inheritance semaphore on uC/OS real-time kernel	2008
3.	IRTOS03	RTOS and Co-design Toolkit for Multiprocessor Systems-on-Chip	2008
4.	IRTOS04	An Application of Real-time Operating System in High Speed and High Precision Motion Control Systems	2008
5.	IRTOS05	Power quality monitoring system using Real Time Operating System	2008
6.	IRTOS06	Smart Rack Monitor for the Linac Control System	2008
7.	IRTOS07	The Development of Embedded EGG Recorder Based on ARM9	2008

**Technology : EMBEDDED**
**Domain : BIO-MEDICAL**

S.No	Project code	Project Titles
1.	NBIO01	Automatic Patient's Heart Beat And Body Temperature Monitoring For Remote Doctor
2.	NBIO02	Reduce the potential risks for Sudden Infant Death Syndrome (SIDS)
3.	NBIO03	Peritoneal Based Medical Filter Process
4.	NBIO04	Patient Fall Detection using hip and abdomen sensor
5.	NBIO05	Breathing sensor with sleeping pattern analysis
6.	NBIO06	Bionic sensor based foot sensing and hip monitoring with lcd display
7.	NBIO07	Disabled Person brain wave Detection with EEG sensor
8.	NBIO08	Intelligent Monitoring System in Psychological Health
9.	NBIO09	HOSPITAL EMERGENCY CARING SYSTEM
10.	NBIO10	Respiratory Temperature Monitor In Icu

Technology : EMBEDDED  
Domain : AUTOMATION

S.NO	PROJECT CODE	PROJECT TITLES
1.	NIEM01	GSM Based Live Human Detection And Auto-Intimation
2.	NIEM02	Infant Monitoring System Using CO2 Sensors
3.	NIEM03	Multi Level Design Validation In Secure Systems
4.	NIEM04	Path Guide Equipment Using Ultrasonic And Infrared
5.	NIEM05	Wireless Image Monitoring Using CCTV
6.	NIEM06	Train Accident Discovery Systems
7.	NIEM07	Intellectual Atm Card Stealing Recognition
8.	NIEM08	Effluence Based Traffic Signal Control Using Pollution Monitoring Sensor
9.	NIEM09	Voice Based Bus Recognition System For Blind
10.	NIEM10	Vehicle Accident Prevention Using Eye Blink Sensor
11.	NIEM11	Alcohol Detection With Vehicle Controlling
12.	NIEM12	Tourist Guide Equipment Using RF
13.	NIEM13	Theft Vehicle Tracking System
14.	NIEM14	Rf Based Station Name Display In Train Compartment
15.	NIEM15	Dangerous Gas Detection System For Drainage Cleaners
16.	NIEM16	Ultrasonic Movement Detection
17.	NIEM17	Real Time Automotive Monitor And Control With Automatic Lane Speed Limit Indicator
18.	NIEM18	Reservoir Level Indicator And Controlling
19.	NIEM19	Wireless Robot Using Voice Feedback
20.	NIEM20	Wireless Based Railway Gate Control System With Model
21.	NIEM21	Automatic Fire Detection And Controlling Robotic System
22.	NIEM22	Restaurant Automation And Management System
23.	NIEM23	Aeronautical Collision Prevention System
24.	NIEM24	Humidity Monitoring And Pumping System
25.	NIEM25	Smoke Alert System For Industries

**Technology : EMBEDDED****Domain : Instrumentation scada and power electronics based projects**

S.no	Project code	Project titles
1.	ISPE01	Scada based power plant monitoring
2.	ISPE02	Wireless automation for sub-station
3.	ISPE03	Pc based dc motor control using pwm with over heat protection
4.	ISPE04	I2c based environmental monitoring system
5.	ISPE05	Digital energy meter with auto limiting Of load
6.	ISPE06	Prepaid electricity billing system
7.	ISPE07	Power plant data acquisition system
8.	ISPE08	Automatic overhead line fault finding and controlling system
9.	ISPE09	Thermal plant boiler temperature and water level monitoring
10.	ISPE10	Power saving equipment for multi application
11.	ISPE11	Transmission line multi fault detector and Indication to EB
12.	ISPE12	Voice operated induction motor speed Control
13.	ISPE13	Industrial automation using webpage
14.	ISPE14	Gsm process monitor and control with voice alarm
15.	ISPE15	Voice Enabled Speed Control Of Dc Motor

**Technology : EMBEDDED****Domain : CONSUMER ELECTRONICS BASED PROJECTS**

S.NO	PROJECT CODE	PROJECT TITLES
1	ICE01	RFID Access Control for home automation and office automation
2.	ICE02	Smart card implementation for secured networked access control
3.	ICE03	Design of RF remote Control System
4.	ICE04	Telephone based device switching system
5.	ICE05	Payroll System based on RFID time Attendance
6.	ICE06	RFID Toll gate management
7.	ICE07	Design of RC5 remote decoder using Microcontroller for home appliance switching
8.	ICE08	Library management using Barcode Reader
9.	ICE09	Smart intelligent robot based on IR remote control
10.	ICE10	Secured internet banking based on RFID

# BIO INFORMATICS

Eligibility: -

- ✓ M.E(BIO-INFORMATICS)
- ✓ B.E(BIO-INFORMATICS,BIO-MEDICAL)
- ✓ M.SC(BIO INFORMATICS)
- ✓ DIPLOMA (ECE,EEE & MECHETRONICS)

Technology : BIO-INFORMATICS

Domain :RESEARCH

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1.	ITBM01	Molecular Docking Study Of 1H-Pyrazole Derivative With COX-2	2008
2.	ITBM02	High Throughput Screening Of Anticancer Targets Using Hsp90	2008
3	ITBM03	Molecular Docking Study Of Naphthyl Benzisoxazole Derivative With Estrogen Receptor-Beta	2008
4.	ITBM04	Molecular Docking Study Of Anticancer Drugs With HDAC	2008
5	ITBM05	Molecular Docking Study Of Thiourea Derivative With Neuraminidase	2008
6.	ITBM06	Medicinal Plant Database	2008
7.	ITBM07	Insilico Binding Analysis Of SCH 66336-Derivative With Farnesyltransferase	2008
8.	ITBM08	Molecular Modeling And Docking Study Of Ache Inhibitor – Helicid Derivative	2008
9.	ITBM09	Molecular Docking Study Of Styrylquinoline With HIV-Integrase	2008
10.	ITBM10	High Throughput Virtual Screening Using CDK-2	2008
11.	ITBM11	Homology modeling of target proteins / enzymes using Modeller9v4	2008
12.	ITBM12	Active site analysis by mutation and molecular docking process	2008
13.	ITBM13	Conformational analysis of protein / enzyme using Gromacs-3.3.1	2008
14.	ITBM14	HTVS of NCI-Diversity for p53 using DOCK6.1	2008
15.	ITBM15	Molecular Docking studies using Autodock-3.1	2008



**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](mailto:projects@stupros.com).  
Website : [www.stupros.com](http://www.stupros.com)