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Project code	Title	IEEE paper year	Language	H/W
AM-01	VLSI design of delay optimized array multiplier for high speed signal processing ASICs	2011	SPICE	
AM-02	Design and VLSI simulation of SRAM memory cells for multi ported SRAMs	2011	SPICE	
AM-03	Submicron level design and simulation of Efficient carry select adder	2012	SPICE	
AM-04	Design and simulation of Low power pulse triggered Flip Flop with 130 nm CMOS technology	2012	SPICE	
AM-05	Hybrid modeling and power analysis of SRAM based register file for 130 nm technology	2012	SPICE	
AM-06	Simulation of Soft error tolerable FPGA cells	2011	SPICE &VHDL	
AM-07	ASIC cell realization of Low power clocked shared paired flip flop	2011	SPICE	
AM-08	Simulation of Improved power gating for low leakage and reduced ground bouncing scheme	2012	SPICE	
AM-09	Simulation and analysis of Pink noise effects in submicron TSMC fabrication processes	2012	SPICE	
AM-10	Novel reversible gate based circuit design and simulation using submicron technologies	2012	SPICE	
AM-11	Bootstrap switch and double sampling based high speed ADC front end unit	2012	SPICE	
AM-12	Low power CMOS design with sleep transistor for submicron VLSI technologies	2012	SPICE	
AM-13	Simulation of low power energy recovery type synchronous circuit design	2012	SPICE	
AM-14	Design and simulation of Modified complementary pass transistor logic (MCPL) based high radix multiplier	2012	SPICE	
AM_15	Low power and high speed register file with CMOS variants at schematic and layout level	2012	SPICE	
AM_16	Delay Characterization of clock driving circuits with reduced swing CMOS logic	2012	SPICE	
AM_17	Design and simulation of Improved memory cell for higher read stability	2011	SPICE	
AM_18	Design issues and performance analysis with power gating schemes in submicron VLSI chips	2011	SPICE	
AM_19	Low power pass transistor based full adder for deep submicron based processes	2011	SPICE	
AM_20	Reduced leakage based low power SRAM cell for main memory of microcontrollers	2011	SPICE	
AM_21	Simulation of Low power dynamic CMOS variant with single phase clocking circuits	2012	SPICE	
AM_22	Simulation of sub threshold flip flops for low power VLSI circuits	2011	SPICE	
AM_23	Soft error tolerant nanometer scale SRAM memory cell for space applications	2011	SPICE	
FM-01	Fuzzy Logic Controller for Autonomous Navigation	2012	VHDL	
FM-02	Wireless real time health monitoring system built with FPGA and Zigbee	2012	VHDL	

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	networks			
FM-03	High speed customized serial protocol for IP integration on FPGA based SOC applications	2011	VHDL	
FM-04	Development of PID control system based prototype model for DC voltage conversion system	2012	VHDL	
FM-05	Hardware in loop emulation of efficient Morphological image processing operations on Xilinx FPGA	2012	VHDL	
FM-06	Fuzzy enabled PID control for efficient DC motor speed management realized on FPGA	2012	VHDL	
FM-07	FPGA implementation of various rate conversion filter architectures	2012	VHDL	
FM-08	Wireless system for fall detection using 3-axis Digital Accelerometer	2012	VHDL	
FM-09	Fault injection test bed for clock violation based cipher attacks on FPGA Hardware	2012	VHDL	
FM-10	Design and Realization of Serial Front Panel Data Port (SFPDP) Protocol	2012	VHDL	
FM-11	Multi dimensional parity based hamming codes for correcting the SRAM memory faults under high EMI conditions	2012	Verilog	
FM-12	Platform for FPGA based accelerated computing through Ethernet	2012	Verilog	
FM-13	power Vs Accuracy analysis for FIR filter implementation on FPGAs	2012	VHDL	
FM-14	Research on Goertzel Algorithm of LFMCW Laser Fuze Ranging	2012	VHDL	
FM-15	Design the adaptive noise canceller based on an improved LMS Algorithm and realize it by DSP	2012	VHDL	
FM-16	A Design of Phase Nonlinear Chirp Waveform using FPGA for Pulse Compression Radar	2012	VHDL	
FM-17	Pipelined FPGA Design of the Goertzel Algorithm for Exon Prediction	2012	VHDL	
FM-18	area and speed wise improved Vedic multiplier for FPGA based arithmetic circuits	2012	VHDL	
FM-19	Complete prototyping of BPSK communication system on FPGAs	2012	VHDL	
FM-20	Configurable FFT processor with fixed point arithmetic for reconfigurable DSP applications	2012	VHDL	
FM-21	Data login system for Autonomous Underwater Vehicle (AUV) synthetic aperture sonar	2012	VHDL	
FM-22	Delta Sigma modulator for modern wireless signal generation	2012	VHDL	
FM-23	Efficient matched filters for down conversion systems in FPGA based software defined radios	2012	VHDL	
FM-24	fall detection by 3D accelerometer	2012	VHDL	
FM-25	Fast DNA sequence aligner	2012	VHDL	
FM-26	FPGA based complex test pattern generation for high speed fault diagnosis in memory chips	2011	VHDL	
FM-27	Fault injection test bed for clock violation based cipher attacks on FPGA Hardware	2012	VHDL	
FM-28	Fixed point modelsim and Hardware testing of Discrete Wavelet transform using VHDL	2012	VHDL	
FM-29	Hard in loop testing and validation of Adaptive sigma delta modulator on FPGA	2012	VHDL	
FM-30	hardware efficient eigen function generation for FPGA architectures	2012	VHDL	

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FM-31	High speed FPGA communication realized through fiber optic link	2012	VHDL	
FM-32	Implementation of FPGA based high speed gaming environment frame work	2012	VHDL	
FM-33	implementation of home automation system with low cost FPGA	2012	VHDL	
FM-34	Low phase noise based carrier generation with sigma delta and CORDIC	2012	VHDL	
FM-35				
FM-36	Platform for FPGA based accelerated computing through Ethernet	2012	VHDL	
FM-37	power Vs Accuracy analysis for FIR filter implementation on FPGAs	2012	VHDL	
FM-38	VHDL Implementation of UART with Status Register	2012	VHDL	
FM-39	Real time kernel based communication between FPGAs	2012	VHDL	
FM-40	Reconfigurable asynchronous to synchronous communication adapter implemented on Xilinx FPGA	2012	VHDL	
FM-41	FPGA modeling of Neuron for future artificial intelligence applications	2012	VHDL	
FM-42	FPGA implementation of high speed IEEE 754 compliant floating point multiplication	2012	VHDL	
FM-43	Fast pipelined AES algorithm implemented on Xilinx FPGAs	2011	VHDL	
FM_44	Reconfiguration serial communication core for embedded interfacing on FPGAs	2012	VHDL	
FM_45	IO controller built on Xilinx FPGA with Microblaze softprocessor based approach	2012	VHDL	
FM-51	High speed and dynamic switching type signal generation on FPGA for emulating the test signals for navigation receivers	2011	VHDL	
FM-52	Digital multiple beam forming with sub array based phased RADARs	2011	VHDL	
FM-53	Efficient test pattern generation based on weighted pattern generation	2012	VHDL	
FM-54	High speed all digital phase locked loop (DPLL) using pipelined carrier synthesis techniques.	2011	VHDL	
FM-55	Implementation of scaled down model of Heterogeneous spectrometers for radio astronomy applications on Xilinx FPGA	2011	VHDL	
FM-56	Design and implementation of low power Distributed arithmetic based discrete wavelet transform (DWT) on FPGA	2011	VHDL	
FM-57	Reduced switching activity based low power test pattern generator implemented on FPGA	2012	VHDL	
FM-58	Fine Grain Fault Tolerance-a Key to High Reliability for FPGAs in Space	2012	VHDL	
FM-59	IMPLEMENTATION OF BISTCONTROLLER FOR FAULT DETECTION IN CLB OF FPGA	2012	VHDL	
FM-60	Area efficient throughput improved high speed FSK demodulator for telemetry applications	2012	VHDL	
FM-61	Area efficient image compression with modified wavelet transform technique with VHDL	2012	VHDL	
FM-62	Hardware in loop based verification for transition detector in images using Sobel filter	2012	VHDL	
FM-63	FPGA based Area efficient median filtering for removal of salt-pepper and impulse noises	2012	VHDL	
FM-64	FPGA implemented Edge detection algorithm for medical angiography	2012	VHDL	
FM-65	FPGA realization of Gaussian pulse shaped QPSK modulator	2011	VHDL	

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FM-66	Matlab HDL integration for efficient communication system development verified with BPSK	2011	VHDL	
FM-67	Implementation of high throughput QPSK transceiver on FPGAs	2011	VHDL	
FM-76	Efficient realization of JPEG encoder for still image compression on FPGA	2011	verilog	
FM-77	FPGA implementation of AMBA - AHB compatible memory controller	2011	verilog	
FM-78	Hardware implementation of digital amplitude, phase and frequency demodulators for SDRs	2012	verilog	
FM-79	High radix and compression based area efficient multiplier with Verilog HDL on FPGA	2012	verilog	
FM-80	Low power and low area Discrete cosine transform implemented on FPGA	2012	verilog	
FM-81	Parallel architecture for LFSR for high speed and CRC and BCH encoding applications	2012	verilog	
FM-82	Realization of High level data link controller using Verilog HDL on FPGA	2011	verilog	
FM-83	Verilog Implementation of serial communication between two FPAGs	2012	verilog	
A1-1	VHDL coding and FPGA implementation of high speed PI like Fuzzy control system for industrial automation applications	2010	VHDL	
A1-2	A low cost FPGA based USB device core	2008	VHDL	
A1-5	Semi custom implementation of modified SHA algorithm	2012	VHDL	
A1-6	Implementation of low power and high speed encryption Crypto-Hardware using Novel Modular Arithmetic Components	2010	VHDL	
A1-8	FPGA synthesized shift converter with FIFO for USB to RS232 interface	2012	VHDL	
A1-11	VHDL implementation of blowfish cryptosystem for streaming multimedia applications	2008	VHDL	
A1-13	FPGA Implementation of FIFO based multi-channel UART controller for complex control systems	2007	VHDL	
A1-14	FPGA implementation of Scalable encryption algorithm for delay sensitive and energy aware wireless sensor networks	2009	VHDL	
A1-16	FPGA based DPWM architectures for high speed, high resolution and low power closed loop control systems	2012	VHDL	
A1-17	Control system for Laser guidance based deflectable nose bullet for future military applications	2010	VHDL	
A1-19	Real time Electrocardiogram (ECG) signal processing on FPGA for emerging personal healthcare applications	2010	VHDL	
A1-23	VHDL implementation of FPGA synthesizable scaled ARM 7, v-4 soft processor core for embedded SOC applications	-	VHDL	
A1-25	Reconfigurable real time signal capturing of baseband and IF signals on FPGA for communication applications	2008, 2005	VHDL	
A1-26	An Hardware reconfigurable debug data compressor for FPGA-Based on chip Debugging applications	2007	VHDL	
A1-29	Noise immune and area optimized serial interface for FPGA based industrial interfaces	2012		
A1-30	Implementation of FPGA based low cost logic signal analyzer (LSA)	2008	VHDL	
A1-31	FPGA Implementation of low power multi serial to Ethernet gateway for Unmanned Aerial Vehicle (UAV) data acquisition systems	2010	VHDL	
A1-33	FPGA implementation of efficient DTMF detection using Goertzel	2010	VHDL	

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	algorithm with highly area optimized resource sharing approach			
A2-34	Design of high speed and low power digital matched filter for CDMA applications	2007	VHDL	
A2-35	FPGA implementation of programmable Digital frequency synthesizer for digital communication applications	2008	VHDL	
A2-36	FPGA implementation of BFSK based Telemetry link transmitter and Receiver	2005	VHDL	
A2-37	FPGA based Deep Packet Inspection Engine for NIDS	2012	VHDL	
A2-38	FPGA'S GPS signal source design	2012		
A2-39	FPGA implementation of universal modulator using CORDIC algorithm for communication applications	2009	VHDL	
A2-40	FPGA implementation of Extended Tiny Encryption Algorithm(XTEA) for Wireless sensor networks	2006	VHDL	
A2-41	Implementation of differentially encoded QPSK communication system with non-coherent detection scheme for satellite radio applications	2008, WCE2009	VHDL	
A2-42	Low-Power and high speed Robust Frequency-domain Echo Cancellation on FPGA hardware	2010	VHDL	
A2-45	VHDL simulation and FPGA synthesis of DS-CDMA for reconfigurable communication links	2008	VHDL	
A2_49	VHDL modeling of noisy and MIMO fading channels for FPGA based wireless communication system designs	2010	VHDL	
A2-50	Soft decoding of the (23, 12, 7) Golay-code upto five errors	2012		
A2-52	VHDL implementation of secure arithmetic coding for secure data communication applications	2012	VHDL	
A2-57	Implementation of Alamouti Space Time Block Coded (STBC) MIMO encoder and decoder on FPGA	2012	VHDL	
A2-58	A pipelined implementation of OFDM transmitter and receiver on reconfigurable platforms	2008	VHDL	
A2-60	High speed spectrum sensing technique to monitor specific frequency signals on FPGA platform	2010	VHDL	
A3-62	FPGA implementation of FFT based Digital Instantaneous Frequency Measurement (DIFM) technique	2012	VHDL	
A3_63	FPGA optimized low power and high speed FIR filter structures for software defined radio applications	2012	VHDL	
A3-64	High density complex RADAR signal emulator for FPGA based RADAR signal processing test applications	2010	VHDL	
A3-68	A PIC compatible RISC CPU core implementation for FPGA based configurable SOC platform for embedded applications	2008	VHDL	
A3-69	FPGA implementation of scalable multi-gigabit pattern matching for network intrusion detection system (NIDS)	2008	VHDL	
A3-72	FPGA Implementation of high area efficient and low power Goertzel algorithm for spectrum analysis	2008	VHDL	
A3-74	Spread spectrum based Secured and robust data link system for Unmanned Aerial Vehicle (UAV) guidance and control	2009	VHDL	
A3-76	FPGA implementation of QAM transmitter and receiver architectures for	2010	VHDL	

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	Wimax applications			
A3-78	Design and realization of high speed software defined radio architecture on FPGA platform	2009	VHDL	
A3-79	FPGA implementation of fast wideband direction estimation using Coherent Signal Subspace Method technique	2009	VHDL	
A3_80	Simulation and synthesis of digital pre-distortion based amplifier linearization with advanced dynamic Look up table for high bandwidth communication links	2010	VHDL	
A4-81	FPGA implementation of programmable Digital frequency synthesizer for digital communication applications	2008	Verilog	
A4-82	FPGA implementation of low power multi channel generalized PID controller frame work for industrial automation applications	2010 2009	VHDL	
A4-83	FPGA implementation of real time audio signal source localization technique for intelligent robotic applications	2012	VHDL	
A4-84	Verilog HDL implementation of Low power audio sub-word sorter unit for security in audio streaming applications	2009	Verilog	
A4-85	High speed fault injection tool (FITO) implemented with VHDL on FPGA for testing Fault tolerant designs	2008	VHDL	
A4_86	A lower power, low complexity and memory free implementation of Novel Recursive DFT and IDFT algorithms	2010	VHDL	
A4-87	Hardware implementation of linear and morphological image processing algorithms on FPGAs	2010	VHDL	
A4-89	Fast self switching type frequency Agile RADAR processing unit implemented on Xilinx FPGA	2009	VHDL	
A4-90	FPGA realization of all digital PSK MODEM based on software defined radio architecture	2009	VHDL	
A4-91	Digital programmable all type modulation and spread spectrum signal generator using latest FPGA techniques	2009	VHDL	
A4-92	Programmable wide band frequency modulation receiver built with full digital techniques on FPGA	2009	VHDL	
A4-93	Highly optimized high speed Multirate FIR filters for reconfigurable digital communication systems	2010	VHDL	
A4-94	Parameter controller reconfigurable base band modulator SDR architecture built in FPGA	2010	VHDL	
A4-95	Ultra high speed wideband rate conversion architectures based on Cascaded Integrator comb (CIC) filters	2010	VHDL	
A4-96	FPGA implementation of Quadrature Mirror Filter (QMF) for equalizer application of wireless communication channel	2010	VHDL	
A4-98	Design and Implement of variable length FFT Processor for OFDMA System Using FPGA	2010	VHDL	
	A Fast Hardware Approach for Approximate efficient logarithm and Antilogarithm Computation	VHDL		

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Matlab (DSP) Projects

Project code	Title	Ref IEEE paper year	Language
B1-99	Implementation of modulation type identifier based on higher order statistical parameters for unknown signal interception applications	2009	MATLAB /OCTAVE
B1-104	Simulation of OFDM modulator and Demodulator for Wimax applications	2008	MATLAB /OCTAVE
B1-114	Algorithm for blind detection of Frequency hopping signals based on second order cyclostationary	2008	MATLAB /OCTAVE
B1-115	Modeling and Simulation of real time audio signal source localization technique for intelligent robotic applications	2008	MATLAB /OCTAVE
B1-116	Simulation of frequency hopping spread spectrum (FHSS) communication system for fading channels	2008	MATLAB /OCTAVE
B1-121	Spectral sensing algorithm for complex modulated signals in cognitive communication applications	2012	MATLAB/ OCTAVE
B1-122	Simulation of correlation properties and transceiver for Optical CDMA	2012	MATLAB/ OCTAVE
B2-128	Simulation of Video stabilization technique for Video quality improvement for UAV surveillance applications	2000	MATLAB /OCTAVE
B2-131	Implementation of Moving object detection in video signals for automatic traffic control and signaling applications	2009	MATLAB /OCTAVE
B2-132	FH signal interception based on the time-frequency spectrogram by image enhancement techniques	2009	MATLAB /OCTAVE
B2-133	Morphological signal processing based cancer and tumor cell identification	2012	
B2_134	Wavelet transform based image fusion for brain diagnosis	2012	MATLAB/ OCTAVE
B3-152	Simulation of Spectral efficient low distortion CPM communication system with modified Gaussian pulse shaping	2010	MATLAB /OCTAVE
B3-153	A Novel long Pseudo(PN) code Acquisition Algorithm for fast acquisition based direct sequence spread spectrum (DSSS) systems	2010	MATLAB /OCTAVE
B3-154	Improved method for Deinterleaving Radar Pulse Trains with Stagger PRI in Dense Pulse environment	2010	MATLAB/ OCTAVE
B3-155	Simulation of MIMO and OFDM based communication system for Digital Video broadcasting (DVB) applications	2010	MATLAB/ OCTAVE
B3-156	A Novel pulse compression technique for higher range and better range resolution for RADAR systems	2010	MATLAB/ OCTAVE
B3-157	Low cost EM signal Direction estimation with two element time modulated array system for military/police search operations	2010	MATLAB/ OCTAVE
B3-158	Hybrid Technology using STBC, OFDM with spread spectrum (SS) for Next Generation Broad band Mobile Radio Communications	2009	MATLAB/ OCTAVE
B3-159	Three element beam forming algorithm with reduced interference effect in signal direction estimation	2010	MATLAB/ OCTAVE
B3-160	Probability Density analysis of the Phase Error of a Digital	2010	MATLAB/ OCTAVE

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	Interferometer with Overlapped FFT Processing		
B3-161	Design and Simulation of the Digital Carrier Tracking Technique for High Dynamic Spread Spectrum Receiver for ground to missile telemetry links	2009	MATLAB/ OCTAVE
B3-163	Blind detection of frequency hopping with compressing sensing technique	2012	MATLAB/ OCTAVE
B3-164	Cramer Rao bound and Maximum likelihood analysis of Passive locating systems	2012	MATLAB/ OCTAVE
B3-165	Cross spectral density analysis for various codes suitable for spread spectrum under AWGN conditions	2012	MATLAB/ OCTAVE
B3-166	Efficient spectrum sensing with correlators and comb filters	2012	MATLAB/ OCTAVE
B3-167	High precision cross correlation technique for mobile signals	2011	MATLAB/ OCTAVE
B3-168	Improved multi target detection based RADAR for traffic control using FMCW	2012	MATLAB/ OCTAVE
B3-169	Low cost and real time signal generator with PC sound card and MATLAB graphics	2012	MATLAB/ OCTAVE
B3-170	Power efficient spectrum sensing with two stage processing	2012	MATLAB/ OCTAVE
B3-171	Simulation of Passive RADAR based on Broad cast transmitters	2012	MATLAB/ OCTAVE
B3-172	Spread spectrum code design for MIMO Radar for multi target detection	2012	MATLAB/ OCTAVE
B3-173	subsample delay estimation based on hilbert transform	2011	MATLAB/ OCTAVE
B3-174	time frequency analysis of unknown LFM signals	2012	MATLAB/ OCTAVE
B3-175	Triple correlation function (TCF) based detection of Gold codes	2011	MATLAB/ OCTAVE

**Note

1. The IEEE year given is the year of current version that is published, it is to be noted that the publication date will be few months older than this date.

2. The IEEE reference indicates that the work carried out has some relevance to latest technologies. However in most of the cases the implementation would have several new issues in them, instead of implementing the paper as it is.

3. See the abstract, block diagram and ppt for each project to understand the exact project scope.

4. As the projects are related to latest technologies minimum amount of domain, concepts and code learning will be associated for every project. We offer this information in the form of Video classes, E-classes and direction interaction with company engineers.

5. Students need to register the project as soon as the project accepted in the college. The code and document development for new projects will only be started after registration.

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