

VLSI PROJECTS – Xilinx ISE, Spartan FPGA, Zynq, Tanner IDE

Project Code	Project Titles	Technology
PANVLSI001	Optimizing FPGA Logic Block Architectures for Arithmetic	Arithmetic functions
PANVLSI002	High-Speed Hybrid-Logic Full Adder Using High-Performance 10-T XOR -XNOR Cell	power delay products(PDP)
PANVLSI003	On Fast and Exact Computation of Error Metrics in Approximate LSB Adders	error-tolerant applications
PANVLSI004	Small Constant Mean-Error Imprecise Adder/Multiplier for Efficient VLSI Implementation of MAC-based Applications	MAC Applications
PANVLSI005	A Semi-parallel Full-Adder in IMPLY Logic	Area efficient Applications
PANVLSI006	Improving the Accuracy and Hardware Efficiency of Neural Networks Using Approximate Multipliers	Neural Networks
PANVLSI007	Add Net: Deep Neural Networks Using FPGA-Optimized Multipliers	Deep learning Applications
PANVLSI008	Block-Based Carry Speculative Approximate Adder for Energy-Efficient Applications	Low error rate applications
PANVLSI009	Design Methodology to Explore Hybrid Approximate Adders for Energy-Efficient Image and Video Processing Accelerators	Image Filtering applications
PANVLSI010	Efficient Implementations of Reduced Precision Redundancy (RPR) Multiply and Accumulate (MAC)	Deep learning applications
PANVLSI011	Design and Analysis of Approximate Redundant Binary Multipliers	error-tolerant applications
PANVLSI012	TOSAM: An Energy-Efficient Truncation- and Rounding-Based Scalable Approximate Multiplier	Speed applications
PANVLSI013	Area-optimized Accurate and Approximate Soft-core Signed Multiplier Architectures	Optimized area applications
PANVLSI014	Approximate Multiplier Design Using Novel Dual-Stage 4:2 Compressors	Image smoothing applications.
PANVLSI015	Design Exploration of Energy-Efficient Accuracy-Configurable Dadda Multipliers	Image processing applications



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	with Improved Lifetime Based on Voltage Over scaling	
PANVLSI016	On the Design of Logarithmic Multiplier Using Radix-4 Booth Encoding	Area efficient applications
PANVLSI017	Hybrid Low Radix Encoding based Approximate Booth Multipliers	Low power Applications
PANVLSI018	FPGA-Based Multi-Level Approximate Multipliers for High-Performance Error-Resilient Applications	Image processing applications
PANVLSI019	Parallel architecture of power-of-two multipliers for FPGAs	Computer vision Applications
PANVLSI020	A Fully Static True-Single-Phase-Clocked Dual-Edge-Triggered Flip-Flop for Near-Threshold Voltage Operation in IoT Applications	Low voltage applications
PANVLSI021	DAD-FF: Hardening Designs by Delay-Adjustable D-Flip-Flop for Soft-Error-Rate Reduction	Delay applications
PANVLSI022	Multiple Layout-Hardening Comparison of SEU-Mitigated Flip-Flops in 22-nm UTBB FD-SOI Technology	Area efficient Applications
PANVLSI023	Selective Flip-Flop Optimization for Reliable Digital Circuit Design	Low power applications
PANVLSI024	Efficient designs of reversible latches with low quantum cost	Reversible logic applications
PANVLSI025	Energy efficient VLSI architecture of real-valued serial pipelined FFT	Low power Applications
PANVLSI026	Min-Delay Margin/Error Detection and Correction for Flip-Flops and Pulsed Latches in 10-nm CMOS	Low power Applications
PANVLSI027	A Highly Reliable and Energy-Efficient Triple-Node-Upset-Tolerant Latch Design	HSPICE
PANVLSI028	A 10-Bits 50-MS/s SAR ADC Based on Area-Efficient and Low-Energy Switching Scheme	ADC Applications
PANVLSI029	A Low-Power 8-GS/s Comparator for High-Speed Analog-to-Digital Conversion in 0.13μ m CMOS Technology	Delay applications
PANVLSI030	Design optimization procedure for digital mismatch compensation in latch	Accurate applications



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	comparators	
PANVLSI031	An ALU Protection Methodology for Soft Processors on SRAM-Based FPGAs	ALU Applications
PANVLSI032	Reconfigurable arithmetic logic unit designed with threshold logic gates	Threshold logic gates
PANVLSI033	ASIC Implementation of High-Speed Adaptive Recursive Karatsuba Multiplier with Square-Root-Carry-Select-Adder	High speed Applications
PANVLSI034	Very Fast, High-Performance 5-2 and 7-2 Compressors in CMOS Process for Rapid Parallel Accumulations	Power-delay product Applications
PANVLSI035	A Novel Time-Shared and LUT-Less Pipelined Architecture for LMS Adaptive Filter	Area efficient applications
PANVLSI036	Resource-Efficient and High-Throughput VLSI Design of Global Optical Flow Method for Mobile Systems	Memory applications
PANVLSI037	Green TPU: Predictive Design Paradigm for Improving Timing Error Resilience of a Near-Threshold Tensor Processing Unit	Deep Neural Networks interface
PANVLSI038	A Low Cost High Performance VLSI Architecture for Image Scaling in Multimedia Applications	Image processing Applications
PANVLSI039	Auto generation of Pipelined Belief Propagation Polar Decoders	Power density applications
PANVLSI040	All-Digital Cost-Efficient CMOS Digital-to-Time Converter Using Binary-Weighted Pulse Expansion	Low power Applications
PANVLSI041	High Throughput/Gate AES Hardware Architectures Based on Data path Compression	Security applications
PANVLSI042	MERIT: Tensor Transform for Memory-Efficient Vision Processing on Parallel Architectures	Memory applications
PANVLSI043	Multiple Sharing 7T1R Nonvolatile SRAM With an Improved Read/Write Margin and Reliable Restore Yield	Memory applications
PANVLSI044	NTTU: An Area-Efficient Low-Power NTT-Uncoupled Architecture for NTT-Based Multiplication	Low power Applications



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PANVLSI045	A Low-Power, High-Speed Readout for Pixel Detectors Based on an Arbitration Tree	High speed Applications
PANVLSI046	GPU-Based Redundancy Analysis Using Concurrent Evaluation	Memory Applications
PANVLSI047	REMAP+: An Efficient Banking Architecture for Multiple Writes of Algorithmic Memory	Area efficient Applications
PANVLSI048	Ultra low voltage, low power active-RC filter in 90 nm CMOS technology	Filtering Applications
PANVLSI049	In Situ and In-Field Technique for Monitoring and Decelerating NBTI in 6T-SRAM Register Files	Memory Applications
PANVLSI050	Design of an AMBA-Advanced Peripheral Bus (APB) Protocol IP Block	SOC Applications
PANVLSI051	SPI to I2C Conversion using Verilog	Peripherals Communications
PANVLSI052	Implementation of 4-BIT universal shift register using diode free adiabatic logic	Nano-meter technology
PANVLSI053	Timing and Synchronization for Explicit FSM based Traffic Light Controller	Traffic Management
PANVLSI054	Design and Synthesis of ALU using Reversible Logic for MAC Applications	Low power Applications
PANVLSI055	Design and Implementation of RoBA Multiplier on MAC Unit	High speed Applications
PANVLSI056	Contrast Enhancement of Color Images Based On FPGA ARTY 7	Image processing
PANVLSI057	Linear and Morphological Image Filtering using Spartan3 FPGA Image Processing Kit	Image Filtering Applications
PANVLSI058	Dual edge triggered D-type Flip flop with low power consumption	Low power applications
PANVLSI059	Design of a Low Power 4x4 Multiplier Based on Five Transistor(5-T)Half Adder, Eight Transistor (8-T)Full Adder &Two Transistor(2-T)AND Gate	Analog Design Applications
PANVLSI060	FPGA Implementation of Reed-Solomon Encoder and Decoder for Wireless Network 802.16	Communication Applications



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PANVLSI061	FPGA based robotic ARM controller using spartan3an project kit	Embedded Applications
PANVLSI062	Object recognition using tiny yolo in FPGA	Image processing Applications
PANVLSI063	FPGA Implementation of medical image fusion using spartan3 FPGA Image processing kit	Medical Applications
PANVLSI064	Real time moving object detection using FPGA	Image capture Applications
PANVLSI065	Real time color detection in FPGA using PYNQ-z2 with python	Color image Applications
PANVLSI066	Real time edge detection using FPGA	Image processing Applications
PANVLSI067	A Method of Quick Edge Detection Based on Zynq	Image processing Applications
PANVLSI068	Real Time Edge Detection via IP-Core based Sobel Filter on FPGA	Image filtering Applications
PANVLSI069	FPGA Implementation of Video Capture and Moving Target Detection System	Video Processing Applications
PANVLSI070	CNN based object recognition using FPGA	Image capture Applications
PANVLSI071	IOT based Weather monitoring system using Spartan 6 FPGA Controller	Weather management
PANVLSI072	IOT based health monitoring system using FPGA	Health management
PANVLSI073	IOT based water level monitoring system using FPGA	Home Appliances
PANVLSI074	IOT based Energy meter system using FPGA	Power management
PANVLSI075	IOT based smart irrigation system	Smart forming Applications
PANVLSI076	IOT based gas leakage monitoring system using FPGA	Industrial Applications
PANVLSI077	Gesture board home automation system using spartan6 FPGA project kit	Home Automation
PANVLSI078	A Ubiquitous Machine Learning Accelerator with Automatic Parallelization on FPGA	Machine Learning Applications



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PANVLSI079	Development of FPGA based TCP/IP communication module for Embedded Systems of Nuclear Reactors	Network Communications
PANVLSI080	64-bit ALU Design using Vedic Mathematics	High speed Applications
PANVLSI081	Design and Verification of AMBA AHB using System Verilog	ARM processor Applications
PANVLSI082	Verification of AMBA AXI On-Chip Communication Protocol	Memory Applications
PANVLSI083	Design and Verification of AMBA AHB-Lite Protocol using ModelSim	Peripherals Interfacing
PANVLSI084	Design and Implementation of Super Scalar based ALU	ALU Applications
PANVLSI085	Design and Implementation of CPU processor	CPU Applications
PANVLSI086	ASIC Verification of SPI Protocol	ASIC design Flow
PANVLSI087	UVM Verification of SPI Master Core	Communication Applications
PANVLSI088	AXI Master Protocol Verification in UVM	Interfacing Applications
PANVLSI089	Design and Verification of FIFO using System Verilog	Memory Applications
PANVLSI090	Design and Verification of 4 bit Up Counter	ASIC design verification
PANVLSI091	Full Adder/Subtractor Circuit using Reversible Logic Gates	High speed Applications
PANVLSI092	Fixed-Point Matrix Multiplication in Verilog	ALU Applications
PANVLSI093	A Low Power, High Speed 18-Transistor True Single-Phase Clocking D Flip- Flop Design In 90nm CMOS Technology	Delay Applications
PANVLSI094	RSA Based Encryption System Using FPGA for Increased Security	Encryption Technology
PANVLSI095	An Efficient Secure Hash Algorithm(SHA)-512	Hash tag technology
PANVLSI096	AES Algorithm Encryption and Decryption using Verilog	Security Applications



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PANVLSI097	Design and Verification of 8 bit Hamming Encoder and Decoder	Communication Applications
PANVLSI098	A Simple Yet Efficient Accuracy-Configurable Adder Design	Error- correction Applications
PANVLSI099	A Fully Static Topologically-Compressed 21-TransistorFlip-FlopWith75%PowerSaving	Low power Applications
PANVLSI100	Design and Analysis of Wallace Tree Multiplier for CMOS and CPL Logic	Tanner IDE

