

SIM 1 – Dia 30/09 (Segunda-Feira)

Best Paper Candidates I (4 papers)

Chair: Mateus Grellert

HORÁRIO	ID	TÍTULO	AUTORES(AS)
13:30	12	A Machine Learning-Based Solution to Accelerate the Intra Mode Decision for the VVC Standard	Adson Duarte (UFPel)*; Bruno Zatt (UFPel); Guilherme Correa (UFPel); Daniel Palomino (UFPel)
13:45	16	Placement Refinement Strategies for Security Closure	Marcelo F Danigno (FURG)*; Mateus Fogaca (Cadence Design Systems); Rafael Schvitz (FURG); Paulo Butzen (UFRGS)
14:00	32	Memory Access Analysis of the Reconstructed Frames in VVenC Motion Estimation	Matheus M Isquierdo (UFPel)*; Felipe Sampaio (IFRS); Bruno Zatt (UFPel); Daniel Palomino (UFPel)
14:15	49	Machine Learning-Based Decision Solution for G-PCC	Eduardo de Figueiredo Costa (UFPel)*; Leandro Tavares (UFPel); Guilherme Correa (UFPel); Cristiano Santos (UFPel); Marcelo S Porto (UFPel)

SIM 2 – Dia 01/10 (Terça-Feira)

Analog and mixed-signal (7 papers)

Chair: Hamilton Klimach

HORÁRIO	ID	TÍTULO	AUTORES(AS)
10:30	29	Electrical and Physical Design of a 15-pF Load Analog Output Buffer for Intra-Die Signal Sensing	Beatriz Estefania Hatschbach Rezende (UNIPAMPA)*; Cristian Müller (UNIPAMPA); Lucas Compassi Severo (ITA); Alessandro Gonçalves Girardi (UNIPAMPA); Paulo Aguirre (UNIPAMPA)
10:45	33	A 103.7-μW 4-bit Rail-to-Rail Flash ADC in 65-nm CMOS	Tawan Chrysther dos Santos (UNIPAMPA)*; Alessandro Girardi (UNIPAMPA); Paulo Aguirre (UNIPAMPA)
11:00	38	A Low-Power and Low-Noise Open-Loop 7 MHz Relaxation Oscillator	João Frischenbruder Sulzbach (UFRGS)*; Hamilton D Klimach (UFRGS)
11:15	43	Applying Oscillation Based Test Method for Evaluating and Sorting Commercial Integrated Circuits	Luis Duarte (UFRGS)*; Tiago Balen (UFRGS); Marcelo Lubaszewski (UFRGS)
11:30	52	A 5-V 125-kHz Third-Order Continuous-Time Sigma-Delta Modulator in 130-nm BCD Technology	Renan Dotto Oliveira (UNIPAMPA)*; Tawan Chrysther dos Santos (UNIPAMPA); Matheus B S Carvalho (UNIPAMPA); Cristian Muller (UNIPAMPA); Lucas Compassi Severo (ITA); Alessandro Girardi (UNIPAMPA); Paulo Aguirre (UNIPAMPA)
11:45	59	A Simple 10-bit Incremental Sigma-Delta Modulator for Multi Channel Analog to Digital Conversion	Martim Presser (UFSM)*; Felipe de Souza e Silva (UFSM); Cesar Augusto Prior (UFSM); Henrique Friggi Beque (UFSM); Thais Marisco Brollo (UFSM)
12:00	47	Evaluation of the CIC Filter Order in Decimation Filters for Sigma-Delta ADCs	Otavio Elias Viana de Freitas (UNIPAMPA)*; Critian Muller (UNIPAMPA)

SIM 3 – Dia 01/10 (Terça-Feira)

Reliability (6 papers)

Chair: Rafael Soares

HORÁRIO	ID	TÍTULO	AUTORES(AS)
13:30	13	Exploring Security Threats by Hardware-Faults in Approximate Arithmetic Computing	Eloisa Barros (UFPel); Morgana Macedo Azevedo da Rosa (UFPel)*; Eduardo Antonio da Costa (UCPel); Rafael Soares (UFPel); Sergio Bampi (UFRGS)
13:45	15	Robustness Analysis of Different 2:1 Multiplexer Designs Against Single Event Transient Faults	Ana Flávia D Reis (FURG)*; Rafael Schvitz (FURG)
14:00	23	Determining Neutron-based static cross-section of a SRAM-based FPGA in a simplified setup	Julia Willow Benvenuti (UFRGS)*; Fernanda Kastensmidt (UFRGS); Livia Streit (UFRGS); Fábio Benevenuti (UFRGS)
14:15	24	Analyzing the Reliability of a Low-cost RISC-V Synthesized into a SRAM-based FPGA under Fault Injection	Eduardo Domingo Marañon Aguilar (UFRGS)*; Eduardo Domingo Marañon Aguilar (UFRGS); Nixon Ortiz (UFRGS); Fabio Benevenuti (UFRGS); Fernanda Lima (UFRGS)
14:30	26	Predicting Soft Error Susceptibility in Integrated Circuits: A Methodology for Cross-Section Estimation	Clayton Rodrigues Farias (UFRGS)*; Paulo Butzen (UFRGS); Tiago Balen (UFRGS)
14:45	48	Implementation of Design for Testability Techniques in a Low-Power RISC-V Processor	Eduardo A Barcelos (UnB)*; Gilmar Beserra (UnB); Jones Silva (UnB); Hercules Santos (UnB)

SIM 4 – Dia 01/10 (Terça-Feira)

Best Paper Candidates II (4 papers)

Chair: Mateus Grellert

HORÁRIO	ID	TÍTULO	AUTORES(AS)
15:00	1	New Energy-Efficient 3-2 and 4-2 Approximate Adder Compressors Topologies	Leonardo Antonietti (UFPel); Rodrigo Lopes (UFPel); Morgana Macedo Azevedo da Rosa (UFPel)*; Eduardo Antonio da Costa (UCPel); Rafael Soares (UFPel); Sergio Bampi (UFRGS)
15:15	14	An Energy-Efficient StEFCal VLSI Design with Approximate Squarer and Divider Units	Morgana Macedo Azevedo da Rosa (UFPel)*; Eduardo Antonio da Costa (UCPel); Rafael Soares (UFPel); Sergio Bampi (UFRGS)
15:30	20	Statistical Analysis of VVC Residual and Entropy Coding aiming Efficient Hardware Design	GABRIEL BITENCOURT CARDOSO (Unipampa)*; Daniel Tomm (Unipampa); Jiovana Gomes (UFRGS); Rodrigo Wuerdig (UFRGS); Sergio Bampi (UFRGS); Fábio Ramos (Unipampa)
15:45	45	Performance Analysis of Multiple Transform Selection in the VVC Encoder	Caroline S Camargo (UFPel)*; Bianca Silveira (UFPel); Guilherme Correa (UFPel)

SIM 5 – Dia 02/10 (Quarta-Feira)

Radiofrequency (7 papers)

Chair: Sandro Binsfeld Ferreira

HORÁRIO	ID	TÍTULO	AUTORES(AS)
10:30	17	Energy Harvesting applied to Smart Farms	João Pedro G Dytz (FURG)*; Vagner Rosa (FURG); Vinicius Pedro (FURG); Paulo Butzen (UFRGS)
10:45	28	Memory Polynomials with Sparse Delays and Nonlinearities Applied to Power Amplifier Mathematical Modeling	Maria Eduarda Rizo (UFPR)*; Eduardo Lima (UFPR)
11:00	30	Comparison of 4-transistor and 5-transistor stacked RF CMOS power amplifier	MOISES ALVES GUERGOLET (UFPR)*; Favero Santos (SENAI); Bernardo Leite (UFPR)
11:15	37	Adaptively-biased RF CMOS Power Amplifier	Luciano A Oliveira (UFPR)*; Bernardo Leite (UFPR)
11:30	39	Characterization of a VLC Circuit Based on Photovoltaic Cells for Indoor Positioning System	Vitória Alves Monteiro (UNIPAMPA)*; Tawan Chrysther dos Santos (UNIPAMPA); Cristian Muller (UNIPAMPA); Paulo Aguirre (UNIPAMPA); Alessandro Girardi (UNIPAMPA)
11:45	57	Analysis of a Cold Start Circuit for Indoor Energy Harvesting in 65-nm CMOS	Diego Maran de Mattos (UNIPAMPA)*; Paulo Aguirre (UNIPAMPA); Lucas Severo (ITA); Alessandro Girardi (UNIPAMPA)
12:00	58	A 13.56 MHz CMOS Active Rectifier With Dynamically Controllable Comparator for WPT-Powered IMDs	Claudio Ernani da Costa Pedroso Júnior (UNIPAMPA)*; Alessandro Girardi (UNIPAMPA); Paulo Aguirre (UNIPAMPA)

SIM 6 – Dia 02/10 (Quarta-Feira)

Energy-efficient Design (7 papers)

Chair: Talita Borges

HORÁRIO	ID	TÍTULO	AUTORES(AS)
13:30	2	An Ultra Low-Energy VLSI Approximate Discrete Haar Wavelet Transform for ECG Data Compression	Eloisa Barros (UFPeI); Morgana Macedo Azevedo da Rosa (UFPeI)*; Eduardo Antonio da Costa (UCPeI); Rafael Soares (UFPeI); Sergio Bampi (UFRGS)
13:45	7	Exploring Ultra Compact 4:2 Compressors on Power-efficient Multipliers	Vinicius Zanandrea (UFSC)*; Cristina Meinhardt (UFSC)
14:00	10	Approximate Storage Evaluation at Inter-Frame Prediction in VVC Encoding Process	Yasmin S Camargo (UFPeI)*; Felipe Sampaio (IFRS); Daniel Palomino (UFPeI); Bruno Zatt (UFPeI); Renira Soares (UFPeI); Matheus M. Isquierdo (UFPeI)
14:15	25	Bit-Depth Optimized Transposition Buffer Design for the AV1 2D-DCT Transform	Jelson Stoelben Rodrigues (UFPeI)*; Jones W. Goebel (UFPeI); Luciano Volcan Agostini (UFPeI – UFPeI); Bruno Zatt (UFPeI); Marcelo S Porto (UFPeI)
14:30	42	An Energy-Efficient Wavelet Haar Transform Architecture for Respiratory Signal Processing	Nicolas de Oliveira (UFPeI); Morgana Macedo Azevedo da Rosa (UFPeI)*; Henrique Seidel (UFPeI); Eduardo Antonio da Costa (UCPeI); Sergio Almeida (UCPeI); Rafael Soares (UFPeI)
14:45	56	Reconfigurable Approximate Multiplier by Multiple Leading One-Bit Blocks	João M Bedin (UFRGS)*; Pedro T. L. Pereira (UFRGS), Rodrigo N. Wuerdig (UFRGS), and Sergio Bampi (UFRGS)
15:00	61	Hardware Acceleration for Approximate Version of SATD with Rectangular Hadamard Matrix Sizes	Juliana Rodrigues de Vargas (UFRGS)*; Claudio M Diniz (UFRGS)

SIM 7 – Dia 02/10 (Quarta-Feira)

Neural Networks and Machine Learning (6 papers)

Chair: Julio Leão

HORÁRIO	ID	TÍTULO	AUTORES(AS)
15:15	3	Test Zone Search Optimization in VVC Inter-Frame Prediction Using Machine Learning	Ramiro G S Viana (UFPel)*; Fernando Sagrilo (IFFar); Rafael Ferreira (UFPel); Marta B Loose (UFPel); Marcelo S Porto (UFPel); Guilherme Correa (UFPel); Luciano Volcan Agostini (UFPel)
15:30	6	Fast ISP Mode Decision Solution for the VVC Intra Prediction based on Machine Learning	Larissa Araújo (UFPel)*; Adson Duarte (UFPel); Bruno Zatt (UFPel); Guilherme Correa (UFPel); Daniel Palomino (UFPel)
15:45	11	Video Quality Enhancement Based on Multi-Domain Spatio-Temporal Deformable Fusion Model	Garibaldi da Silveira Júnior (UFPel)*; Gilberto Kreisler (UFPel); Bruno Zatt (UFPel); Daniel Palomino (UFPel); Guilherme Correa (UFPel)
16:00	31	MAC Convolutional 2D Generic filter	Talita A Borges (UFRGS)*; Paulo Butzen (UFRGS); Claudio M Diniz (UFRGS); Leonardo B Soares (IFRS)
16:15	50	Quality-Complexity Analysis of Autoencoders for Neural-Network Image Compression	Vitor A Arguilar (UFRGS)*; Leonardo Augusto (UFRGS); Mateus Grellert (UFRGS)
16:30	51	Design and Synthesis of Accelerators for Neural Networks with an I2C Interface: a Preliminary Study	TIAGO VIER PRETO (UFRGS)*; Mateus Grellert (UFRGS)

SIM 8 – Dia 03/10 (Quinta-Feira)

Visual Signal Processing I (7 papers)

Chair: Roger Porto

HORÁRIO	ID	TÍTULO	AUTORES(AS)
08:30	21	Coding Efficiency and Time Evaluation of Apple A15 Bionic Chipset HEVC Encoder	Vítor Costa (UFPel)*; Murilo Perleberg (UFPel); Luciano Volcan Agostini (UFPel); Marcelo S Porto (UFPel)
08:45	22	4K UHD@60fps Design For The VVC Affine Motion Estimation Reconstructor	Marcello M Muñoz (UFPel)*; Murilo Perleberg (UFPel); Luciano Volcan Agostini (UFPel); Guilherme Correa (UFPel); Marcelo S Porto (UFPel)
09:00	27	An UHD 4K@120fps Hardware for the VVC Prediction Refinement with Optical Flow	Murilo Perleberg (UFPel)*; Marcello M Muñoz (UFPel); Denis Maass (UFPel); Vladimir Afonso (IFSul); Luciano Volcan Agostini (UFPel); Marcelo S Porto (UFPel)
09:15	34	Evaluation of AV1 encoder tools for pixel interpolation in fractional inter-frame prediction	Daiane Fonseca Freitas (UFPel)*; Patrick Rosa (UFPel); Leonardo Müller (UFPel); Cláudio Diniz (UFRGS); Mateus Grellert (UFRGS); Guilherme Correa (UFPel)
09:30	35	A Hardware-Friendly Acceleration of VVC Affine Motion Estimation Using Decision Trees	Ramiro G S Viana (UFPel)*; Marta B Loose (UFPel); Rafael Ferreira (UFPel); Marcelo S Porto (UFPel); Guilherme Correa (UFPel); Luciano Volcan Agostini (UFPel)
09:45	46	High-Throughput Hardware Design for Linear Equation System Solving of VVC Affine Prediction	Denis Maass (UFPel)*; Marcello M Muñoz (UFPel); Murilo Perleberg (UFPel); Luciano Volcan Agostini (UFPel – UFPel); Marcelo S Porto (UFPel)
10:00	5	Improving the AV1 Global Warped Motion Compensation Execution Time	WILLIAM KOLODZIEJSKI (UPEL)*; Robson Domanski (UFPel); Luciano Volcan Agostini (UFPel – UFPel)

SIM 9 – Dia 03/10 (Quinta-Feira)

Visual Signal Processing II (6 papers)

Chair: Marcel Corrêa

HORÁRIO	ID	TÍTULO	AUTORES(AS)
10:45	9	Computational Effort Reduction of VVC Inter-Frame Prediction: A Literature Review	Marta B Loose (UFPel)*; Ramiro G S Viana (UFPel – UFPel); Bianca Nunes Coelho (UFPEL); Guilherme Correa (UFPel); Luciano Volcan Agostini (UFPel – UFPel)
11:00	18	Mapping and monitoring Normalized Difference Vegetation Index (NDVI) in pasture areas	Victório Mariani (UFRGS)*; Altamiro Susin (UFRGS); Tiago Weber (UFRGS)
11:15	19	Survey of Complexity-Aware Artificial Intelligence-based Solutions for Versatile Video Coding	Ruhan Avila da Conceição (UFPel)*; Marcelo S Porto (UFPel); Luciano Volcan Agostini (UFPel)
11:30	36	Data Acquisition and Processing Systems for Spectrophotometric Applications: A Review	Michael dos Santos Rodrigues (UFRGS)*; Altamiro Amadeu Susin (UFRGS); Prof. Dr. Alexandro Cristovão Bonatto (IFRS)
11:45	40	Performance Analysis of Hardware-Accelerated HEVC Encoders	Sara Henssler (IFSul); Marcio Spenst (IFSul); Luciano Volcan Agostini (UFPel – UFPel); Marcel Correa (IFSul)*
12:00	54	A Parallel JPEG Pleno Baseline Block-Based Profile Light Field Encoder using OpenMP	Ismael Seidel (UFSC)*; André Filipe da Silva Fernandes (UFSC); José Luis Guntzel (UFSC)

SIM 10 – Dia 03/10 (Quinta-Feira)

EDA and Other Tools (4 papers)

Chair: Alcides Costa

HORÁRIO	ID	TÍTULO	AUTORES(AS)
13:45	4	Efficiency and Computational Cost Analysis of the Geometry-based Point Cloud Encoder	Gustavo H Rehbein (UFPel)*; Eduardo de Figueiredo Costa (UFPel); Leandro Tavares (UFPel); Cristiano Santos (UFPel); Guilherme Correa (UFPel); Marcelo S Porto (UFPel)
14:00	8	Evaluation of LBP Learning for U-Net Based Road Semantic Segmentation	Mauricio K Yui (UEL)*; Leonimer Flávio de Melo (UEL)*
14:15	44	Enabling Programmable Data Planes with C++ and High-Level Synthesis for Custom Packet Forwarding	Nathan A Guimarães (UFRGS)*; Pablo Rodrigues (UFRGS); Weverton Cordeiro (UFRGS); Jose Rodrigo Azambuja (UFRGS)
14:30	55	Abstracting Logic Synthesis Features with Node Centrality for Routing Congestion Prediction	Augusto Berndt (UFSC)*; Cristina Meinhardt (UFSC)