



[Courses](#)[People](#)[Research](#)[Facilities](#)[Awards and Recognition](#)[News and Events](#)[Directory-Computer Science & Engineering](#)[Contact](#)**Jimson Mathew**

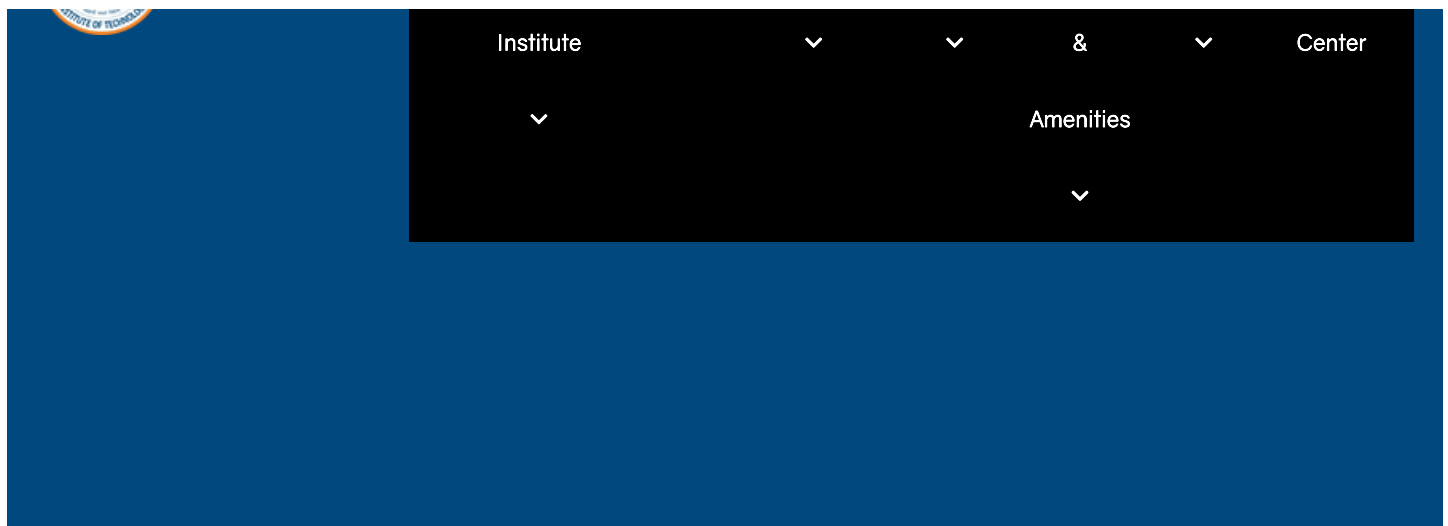
Professor



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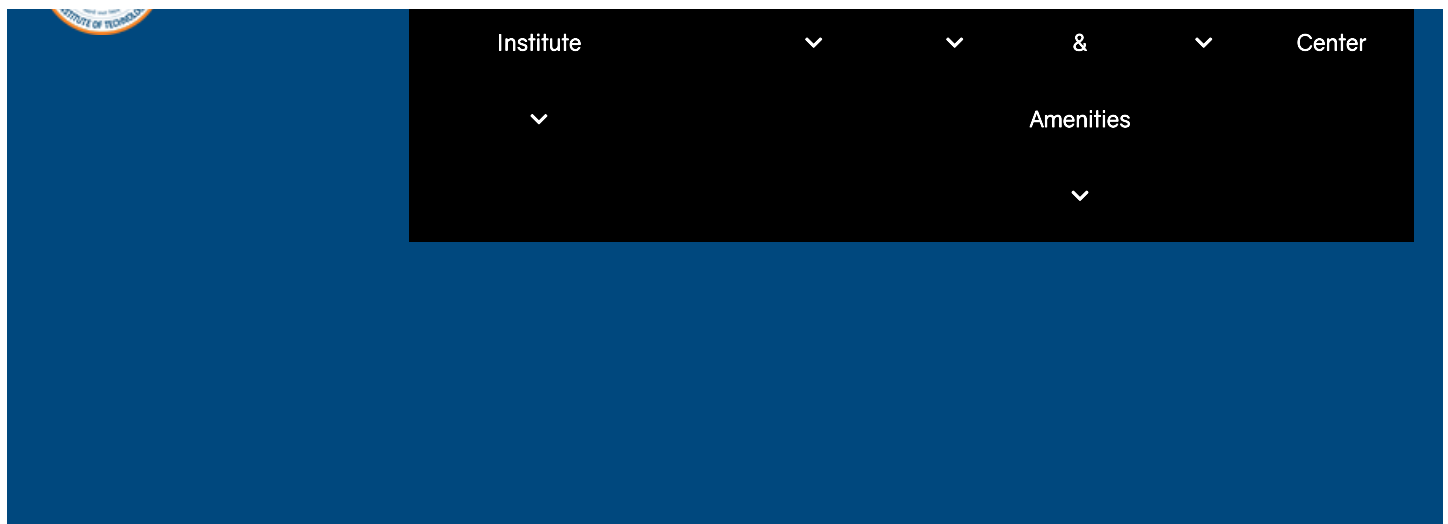
Students

Sr. No.	Photo	Area of Reasearch	Degree
1	 Surjeet Singh Yadav		
2	 Divya Singh		
3	 Naseem Babu		
4			



	8			
		Mayank Sah		
	9			
		Ishwar Mahto		
Awards & Honours	Dorothy Hodgkin Doctoral Fellowship, UK Best Paper Award: International Conference on Embedded Systems Mobile Communication and Computing, 2006			
Member of Professional bodies	Senior Member IEEE, Member IET			
Books	<ul style="list-style-type: none"> ◦ V Mistra, Jimson Mathew, Lau Chiew Tong "QoS and Energy management in Cognitive Radio Networks" Springer DE, Germany, 2017, ISBN 978-3-319-45860-1. ◦ Jimson Mathew, R. A. Shafik, Dhiraj Pradhan, "Energy Efficient Fault-Tolerant Systems", Springer USA, ISBN 978-1-4614-4192-2 .2014 ◦ R. Remesan, Jimson Mathew, Hydrological Data Driven Modelling: A Case study Approach, Springer, USA, ISBN 978-3-319-09234-8, 2014. ◦ Jimson Mathew, Patra P., Dhiraj Pradhan, Kuttamma, A.J, Eco-friendly Computing and Communication Systems. . ISBN 978-3-642-32111-5. August 2012. 			
Patents	<p>A Hybrid Multi-Bit Random Number Generator "Static Random Access Memory", U.S. Patent No. 7706174; , 2010 (with J Singh, D K Pradhan) "Novel Cross Parity Based Error Tolerant Circuit Design", US Patent file No. 61/608,694, 2012(with P Mahesh, A,M Jabir, D K Pradhan). "Circuits and Methods for Memristor based Physically Unclonable Function" US patent filed. File number</p>			





automated hemorrhage detection, Engineering Applications of Artificial Intelligence 133, 108192, 2024

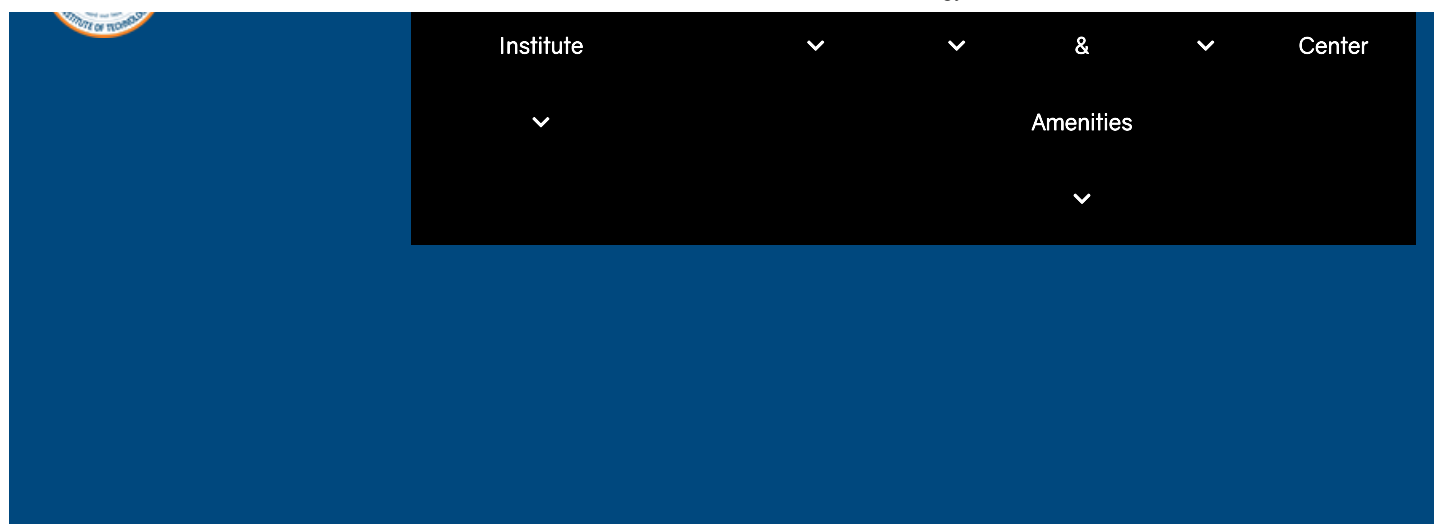
- P Paul, BR Jose, TK Shahana, C Abraham, **J Mathew**, Design and analysis of a dual input quasi SB-SC cell high gain converter, International Journal of Electronics 111 (5), 877-894, 2023
- G Krishna, **J Mathew**, S Gupta Blue-LED based electrical and optical PD-NOMA systems: Characterization in underwater environment, Optics Communications 555, 130248
- O Gilo, **J Mathew**, S Mondal, RK Sandoniya, Subdomain adaptation via correlation alignment with entropy minimization for unsupervised domain adaptation Pattern Analysis and Applications 27 (1), 13, 2024
- R Raj, D Pruthviraja, A Gupta, **J Mathew**, SK Kannath, A Prakash, J Rajan, Multilevel Multimodal framework for automatic collateral scoring in brain stroke, IEEE Access, 2024
- ZE Panthakkalakath, **J Mathew**, A Framework for Modeling, Analyzing, and Decision-Making in Disease Spread Dynamics and Medicine/Vaccine Distribution arXiv preprint arXiv:2311.09984(2023)
- RK Sanodiya, BR Jose, **J Mathew**, Kernelized global-local discriminant information preservation for unsupervised domain adaptation, Applied Intelligence 53 (21), 25412-25434 2023
- D Singh, **J Mathew**, M Agarwal, M Govind DLIRIR: Deep learning based improved Reverse Image Retrieval, Engineering Applications of Artificial Intelligence 126, 106833
- G CG, AS Chakraborty, RS Chakraborty, B Antony Jose, **J Mathew** A Novel Physical Unclonable Function Based on Hybrid Current Mirror, Journal of Hardware and Systems Security, 1-13 2023
- D Singh, **J Mathew**, M Agarwal, M Govind Indoor dataset for Person Re-Identification: Exploring the impact of backpacks, Journal of Visual Communication and Image Representation 96, 103931 2023
- F Amin, A Mondal, **J Mathew** Person re-identification using selective transformation learning, Multimedia Tools and Applications 82 (25), 38993-39013, (2023)
- SKJMPNS R. Raj, **Jimson Mathew** AutoML accurately predicts endovascular mechanical thrombectomy in acute large vessel ischemic stroke, Frontiers in Neurology 14 (2023)1
- O Gilo, **J Mathew**, S Mondal, RK Sanodiya RDAOT: Robust Unsupervised Deep Sub-domain Adaptation through Optimal Transport for Image Classification, IEEE Access(2023)
- CG Gisha, AS Chakraborty, RS Chakraborty, BA Jose, **J Mathew** Diode-Triode Current Mirror Inverter PUF: A Novel Mixed-Signal Low Power Analog PUF, 2023 IEEE 66th International Midwest Symposium on Circuits and Systems (2023)
- AK Devika, RK Sanodiya, BR Jose, **J Mathew** Visual domain adaptation through locality information, Engineering Applications of Artificial Intelligence 123, 106172(4) 2023



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Comput. Biol. Medicine 138: 104940 (2021)

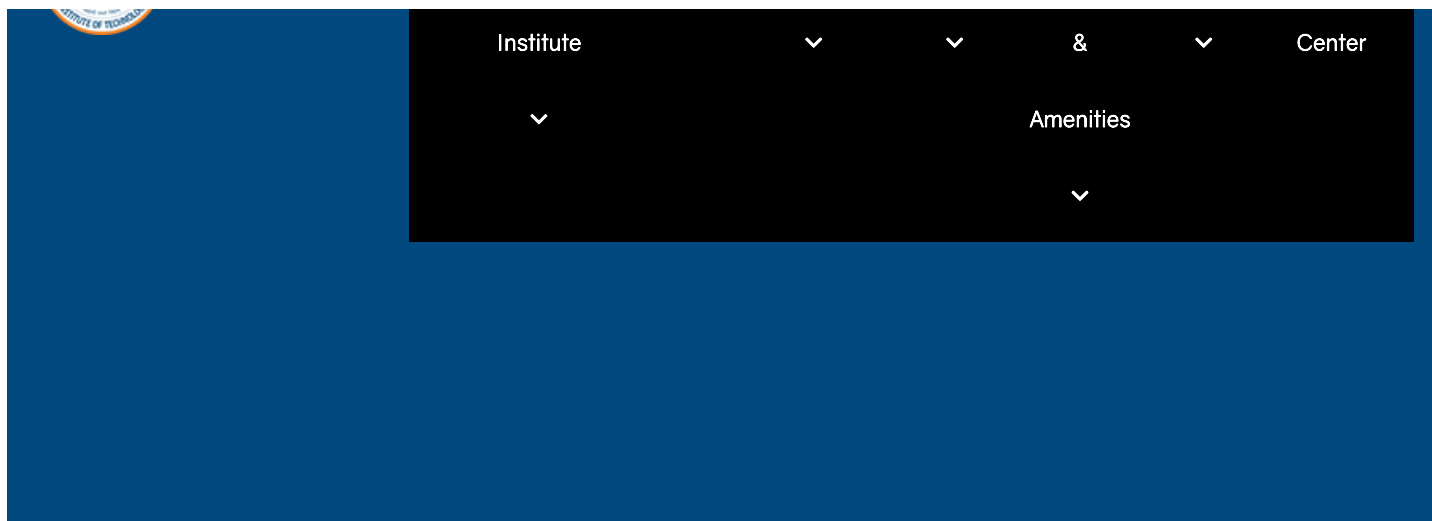
- R. K. Sanodiya, **Jimson Mathew**, Rohan Aditya, Ashish Jacob, Bharadwaj Nayanar: Kernelized Unified Domain Adaptation on Geometrical Manifolds. Expert Syst. Appl. 167: 114078 (2021)
- F. Amin, Arijit Mondal, **Jimson Mathew**: A Large Dataset With a New Framework for Abandoned Object Detection in Complex Scenarios. IEEE Multimed. 28(3): 75-87 (2021)
- S. Tripathy, Vikash Kumar Rai, **Jimson Mathew**: MARPUF: physical unclonable function with improved machine learning attack resistance. IET Circuits Devices Syst. 15(5): 465-474 (2021)
- Vikash Kumar Rai, Somanath Tripathy, **Jimson Mathew**: Design and Analysis of Reconfigurable Cryptographic Primitives: TRNG and PUF. J. Hardw. Syst. Secur. 5(3): 247-259 (2021)
- Dipanjyoti Paul, Anushree Jain, Sriparna Saha, **Jimson Mathew**: Multi-objective PSO based online feature selection for multi-label classification. Knowl. Based Syst. 222: 106966 (2021)
- Dipanjyoti Paul, Sriparna Saha, Abhishek Kumar, **Jimson Mathew**: Evolutionary multi-objective optimization based overlapping subspace clustering. Pattern Recognit. Lett. 145: 208-215 (2021)
- Dipanjyoti Paul, Rahul Kumar, Sriparna Saha, **Jimson Mathew**: Multi-objective Cuckoo Search-based Streaming Feature Selection for Multi-label Dataset. ACM Trans. Knowl. Discov. Data 15(6): 93:1-93:24 (2021)
- Saranyu Chattopadhyay, Pranesh Santikellur, Rajat Subhra Chakraborty, **Jimson Mathew**, Marco Ottavi: A Conditionally Chaotic Physically Unclonable Function Design Framework with High Reliability. ACM Trans. Design Autom. Electr. Syst. 26(6): 41:1-41:24 (2021)
- Deepa Mathew, Bijoy Antony Jose, **Jimson Mathew**, Priyadarsan Patra: Enabling Hardware Performance Counters for Microkernel-Based Virtualization on Embedded Systems. IEEE Access 8: 110550-110564 (2020)
- Rakesh Kumar Sanodiya, **Jimson Mathew**, Sriparna Saha, Piyush Tripathi: Particle swarm optimization based parameter selection technique for unsupervised discriminant analysis in transfer learning framework. Appl. Intell. 50(10): 3071-3089 (2020)
- Dipanjyoti Paul, Sriparna Saha, **Jimson Mathew**: Improved subspace clustering algorithm using multi-objective framework and subspace optimization. Expert Syst. Appl. 158: 113487 (2020)
- Alwyn Mathew, **Jimson Mathew**: Monocular depth estimation with SPN loss. Image Vis. Comput. 100: 103934 (2020)
- Nithin P. B., Albert Francis, Ajai John Chemmanam, Bijoy Antony Jose, **Jimson Mathew**: Interactive Robotic Testbed for Performance Assessment of Machine Learning based Computer Vision Techniques. J. Inf. Sci. Eng. 36(5): 1055-1067 (2020)
- Michael George, Babita Roslind Jose, **Jimson Mathew**: Abnormal activity detection using shear transformed spatio-temporal regions at the



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Particle Swarm Optimization Based Joint Geometrical and Statistical Alignment Approach with Laplacian Regularization. ICONIP (5) 2020: 260-268

- Rakesh Kumar Sanodiya, Alwyn Mathew, **Jimson Mathew**, Matloob Khushi: Statistical and Geometrical Alignment using Metric Learning in Domain Adaptation. IJCNN 2020: 1-8
- Alwyn Mathew, Abhijit Roy, **Jimson Mathew**: Intelligent Residential Energy Management System using Deep Reinforcement Learning. CoRR abs/2005.14259 (2020)
- Alwyn Mathew, Aditya Prakash Patra, **Jimson Mathew**: Monocular Depth Estimators: Vulnerabilities and Attacks. CoRR abs/2005.14302 (2020)
- Alwyn Mathew, Aditya Prakash Patra, **Jimson Mathew**: Self-Attention Dense Depth Estimation Network for Unrectified Video Sequences. CoRR abs/2005.14313 (2020)
- Neeraj, **Jimson Mathew**, Ranjan Kumar Behera, Zenin Easa Panthakkalakath: A Deep Learning Framework for COVID Outbreak Prediction. CoRR abs/2010.00382 (2020)
- Amish Mittal, Sourav Sahoo, Arnhav Datar, Juned Kadiwala, Hrithwik Shalu, **Jimson Mathew**: Multi-Modal Detection of Alzheimer's Disease from Speech and Text. CoRR abs/2012.00096 (2020)
- R. K. Sanodiya, **Jimson Mathew**: , A framework for semi-supervised metric transfer learning on manifolds , Knowledge-Based Systems, (2019).
- R. K. Sanodiya, S. Saha, **Jimson Mathew**: , A kernel semi-supervised distance metric learning with relative distance: Integration with a MOO approach , Expert Systems with Applications, 125 (2019).
- R. K. Sanodiya **Jimson Mathew** S. Saha M. Thalakkottur , A New Transfer Learning Algorithm in Semi-supervised Setting , IEEE Access, 1 (2019).
- M. George, B. R. Jose, **Jimson Mathew**, Pranjalikokare: Autoencoder-based abnormal activity detection using parallelepiped spatio-temporal region. IET Computer Vision 13(1): 23-30 (2019)
- S. Kala, **Jimson Mathew**, B. R. Jose, N. Sivanandan: Radix-43 based two-dimensional FFT architecture with efficient data reordering scheme. IET Computers & Digital Techniques 13(2): 78-86 (2019)
- M. George, B. R. Jose, **Jimson Mathew**, P. Kokare: Autoencoder-based abnormal activity detection using parallelepiped spatio-temporal region. IET Computer Vision 13(1): 23-30 (2019)
- Rajat S. S., R. Jeldi, I. Saha and **Jimson Mathew**, "Binary Decision Diagram Assisted Modeling of FPGA-based Physically Unclonable Function by Genetic Programming", IEEE Transactions on Computers (2018).
- Jos A. V., B. R. Jose, **Jimson Mathew**, Bijoy A. Jose: "A Differential Quantizer-Based Error Feedback Modulator for Analog-to-Digital Converters. IEEE Trans. on Circuits and Systems 65-II(1): 21-25 (2018)
- R. Sebastian, Jos A. V., B. R. Jose, **Jimson Mathew**: A Differentially Quantized Bandpass Error Feedback Modulator for ADCs in Digital Radio. CSSP 37(10): 4181-4199 (2018)

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DOI: 10.1049/iet-pel.2015.1000, 02 March 2017 Volume: 10, [Issue: 3](#), 3 10 2017)

- A Differential Quantizer based Error Feedback Modulator for Analog to Digital Converters By Jos Prakash A V, B. R. Jose, E, **Jimson Mathew**, B. A Jose, IEEE Transactions on Circuits and Systems II, 09 February (2017).
- X. Yang, A. A. Adeyemo, A. Jabir, **Jimson Mathew**, High-performance single-cycle memristive multifunction logic architecture, Electronics Letters, 1–2 April (2016).
- J Jacob, B R Jose, **Jimson Mathew**, Bayesian Analysis of spectrum occupancy prediction in Cognitive Radio, Smart Science, (Taylor and Francis), 19 May 2016.
<http://dx.doi.org/10.1080/23080477.2016.1182360>
- Y. Yang, **Jimson Mathew**, R. S. Chakraborty, M. Ottavi and D. K. Pradhan, Low Cost Memristor Associative Memory Design for Full and Partial Matching Applications, **IEEE Transactions on Nanotechnology**, TNANO.2016.2553438, Vol.15, NO.3, May (2016).
- **Jimson Mathew**, R. Chakraborty, D. K Pradhan, "A Novel Memristor based Hardware Security Primitive, **ACM Transactions on Embedded Computing Systems**, 2015.
- Y Yang, **Jimson Mathew** D. K. Pradhan, M. Ottavi and S. Pontarelli, "Complementary Resistive Switch Based Arithmetic Logic Implementations Using Material Implication, IEEE Transactions on Nanotechnology, 2015 .
- **Jimson Mathew**, R. Chakraborty, D. K Pradhan, "A Novel Memristor based Physically Unclonable Function" Integration, the VLSI Journal – Elsevier (2015).
- R. A Shafik, **Jimson Mathew**, D. K Pradhan A Low-Cost Unified Design Methodology for Secure Test and IP Core Protection' IEEE Transactions on Reliability Special Section on Trustworthy Computing, 2015.
- R. Remesan, M. Bray, **Jimson Mathew**, "Application of PCA and Clustering methods in Input Selection of Hybrid Runoff Models" Journal of Environmental Informatics, 2015.
- C. Abraham, B. R. Jose, and **Jimson Mathew**, "A dual source switched-capacitor converter with solar energy integration capability" Int. J. Energy Technology and Policy (2015)
- C. Abraham, B. R. Jose, and **Jimson Mathew**, "A Multiple Input Variable Output Switched Capacitor DC–DC Converter for Harnessing Renewable Energy and Powering LEDs, Journal of Low Power Electronics, Vol. 11, 1–11, 2015
- Gang G., **Jimson Mathew**, R. A. Shafik, D. K. Pradhan, M. Ottavi and S. Pontarelli Lifetime Reliability Analysis of Complementary Resistive Switches under Threshold and Doping Interface Speed Variations, **IEEE Transactions on Nanotechnology**, 2014 .
- Y Yang., **Jimson Mathew**, D. K. Pradhan, M. Ottavi and S. Pontarelli Lifetime Novel Complementary Resistive Switch Crossbar

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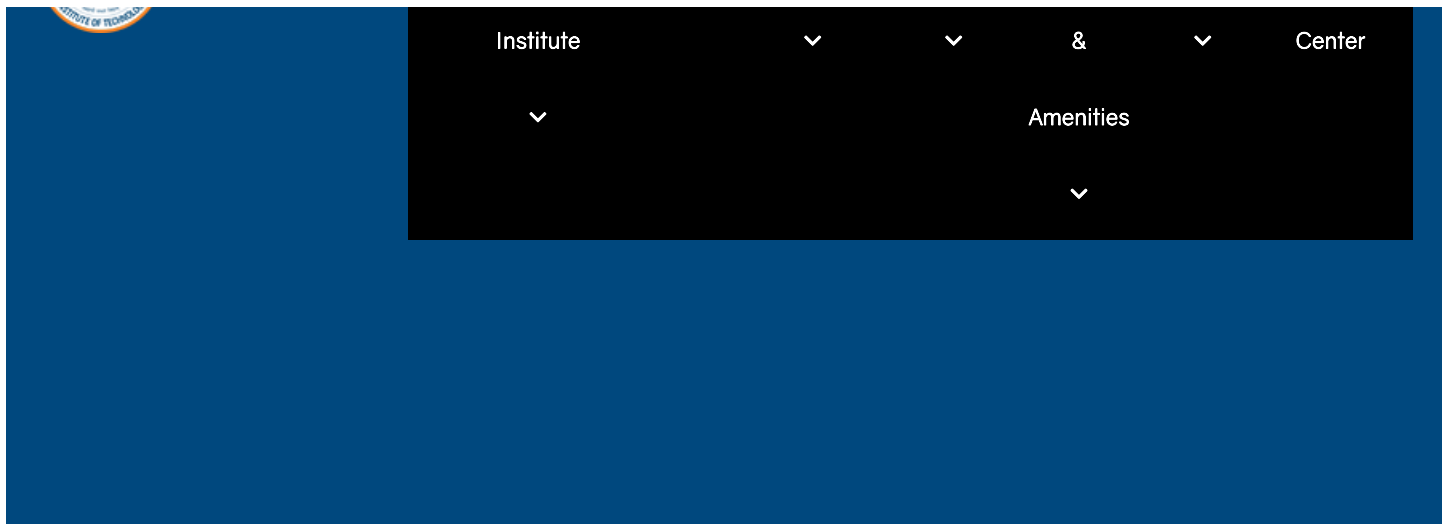


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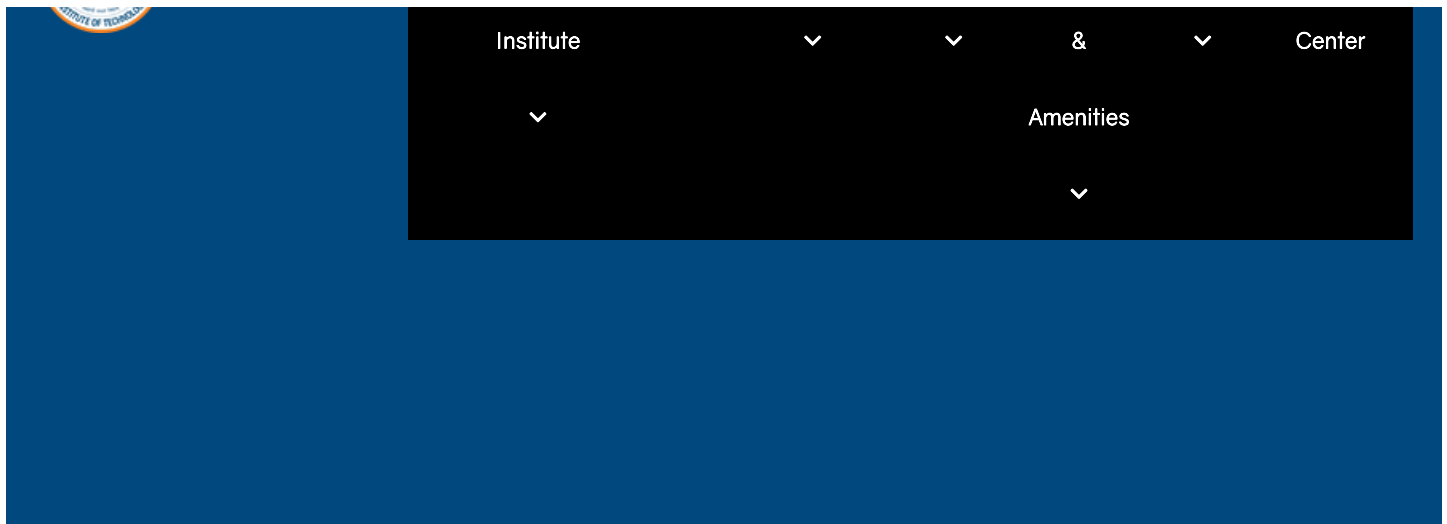
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- protocol for cognitive radio network" IET Digital Library, 2014
- Reddy, B.K., Sabbavarapu, S., Acharyya, A., Shafik, R.A. **Jimson Mathew**, "Novel IC Design Methodology Using Dynamic Library Concept with Reduced NRE Cost and Time-to-Market, Journal of Low Power Electronics, No. 10 September 2014.
 - L. Sun,, **Jimson Mathew**, Dhiraj Pradhan, S. P. Mohanty, "Enhanced Statistical Blockade Approaches for Fast Robustness Estimation and Compensation of Nano-CMOS Circuits. Journal of Low Power Electronics (JOLPE), 8(3), pp. 261–269. January 2012.
 - V Mishra, C Tong Lau, S Chan, **Jimson Mathew** "Energy aware spectrum decision framework for cognitive radio network: a spectrum decision framework for cognitive radio network with energy awareness Journal of Low Power Electronics 9 (3), 313–321, 2013.
 - Narayanan, V.K, Shafik, R.A, **Jimson Mathew**, Dhiraj Pradhan, Fault Tolerant High Performance Galois Field Arithmetic Processor. Lecture Notes in Computer Science, . August 2012.
 - **Jimson Mathew**, K. Maharatna, H. Rahaman, D.K.Pradhan. " Pseudo-parallel Datapath Structure for Power Optimal Implementation of 128-pt FFT/IFFT for Wireless Personal Area Networks, Journal of Circuits and Systems" Journal of Embedded Signal Processing Circuits and Systems for Cognitive Radio-based Wireless Communication Devices (Springer) 2011. .
 - Jaison Jacob, Babita R. Jose, **Jimson Mathew**: Cellular Automata Approach for a Low Power Fusion Center to Evaluate Spectrum Status and Coverage Area in Cognitive Radios. J. Low Power Electronics 9(3): 332–339 (2013)
 - S. Banerjee, **Jimson Mathew**, S.P. Mohanty, Dhiraj Pradhan, M. Ciesielski, A Variation-Aware Taylor Expansion Diagram-Based Approach for Nano-CMOS Register-Transfer Level Leakage Optimization. Journal of Low Power Electronics, 7(4), pp. 471–481. December 2011.
 - S. Banerjee, **Jimson Mathew**, D.K. Pradhan, B. B. Bhattacharya, and S. P. Mohanty, "A Routing-Aware ILS Design Technique", **IEEE Transactions on Very Large Scale Integration Systems** 2011.
 - B.R. Jose, **Jimson Mathew**, P.Mythili, ``A Multi-mode Sigma-delta ADC for GSM/WCDMA/WLAN Applications, "Journal of Signal Processing Systems (**Springer**), Volume 62, Number 2, 117–130, DOI: 10.1007/s11265-008-0326-z Jan. 2011.
 - V. Misra, **Jimson Mathew**, Dhiraj Pradhan, Fault-tolerant De-Bruijn Graph Based Multipurpose Architecture and Routing Protocol for WSN. International Journal of Sensor Networks (IJSNet), . May 2011
 - H. Rahman, **Jimson Mathew**, D.K Pradhan "Test Generation in Systolic Architecture for Multiplication over $GF(2^m)$ " **IEEE Transactions on Very Large Scale Integration (VLSI) Systems**, Issue 9,pp. 1366 – 1371, Sept. 2010.
 - **Jimson Mathew**, A.M. Jabir, , H. Rahaman, D. Pradhan, A Galois Field



- D. Maslov, **Jimson Mathew**, D. Cheung, and Dhiraj K. Pradhan. "On the Design and Optimization of a Quantum Polynomial-Time Attack on Elliptic Curve Cryptography, *Journal of Quantum Information and Computation* Vol.9 No.7&8 , July 1, 2009.
- R. Remesan, D. Han. **Jimson Mathew** "Runoff Prediction Using an Integrated Hybrid Modelling Scheme. *Journal of Hydrology (Elsevier)*. Vol. 372 No. 1/4 pp. 48-60, 2009.
- A. K. Singh, Asish Bera, H. Rahaman, **Jimson Mathew**, and D.K.Pradhan "Error Detecting Dual Basis Bit Parallel Systolic Multiplication Architecture over GF(2^m)" *Journal of Electronic Science and Technology*, 2009.
- H. Rahaman, **Jimson Mathew**, **Dhiraj Pradhan** and A. M. Jabir. "C-Testable Bit Parallel Multipliers Over GF(2^m)". *ACM Transactions on Design Automation of Electronic Systems (TODAES) Volume 13 Issue 1, pages.5:2-5:18, January 2008*.
- A. Jabir, **Dhiraj Pradhan** and **Jimson Mathew**. Gfexpress: An Efficient Technique for Synthesis and Optimization of Polynomials in GF(2^m) . *IEEE Transactions on Computer Aided Design, (IEEE TCAD)*, Vol. 27, Issue 4, pages 698-711, March 2008.
- D. Maslov, **Jimson Mathew**, Donny Cheung, and Dhiraj K. Pradhan. "On the Design and Optimization of a Quantum Polynomial-Time Attack on Elliptic Curve Cryptography", *Lecture Notes in Computer Science (LNCS)*, 2008.
- B.R Jose, , P. Mythili, **Jimson Mathew** GA-based Optimization of Sigma-delta Modulators for Wireless Transceivers *Engineering Letters*, Volume 16 Issue 4, Pages 473-479
- H. Rahaman, **Jimson Mathew**, and D. K. Pradhan, "Derivation of Reduced Test Vectors for Bit Parallel Multipliers over GF(2^l m)" *IEEE Transactions on Computers (IEEE TC)*, vol. 57, Issue.9, Page(s): 1289 – 1294, 2008.
- B.R. Jose, Mythili P. **Jimson Mathew**, "Dual-Band Sigma-delta ADC for WCDMA/WLAN Receivers", *International Journal of Applied Engineering Research*, March 2008.
- B.R. Jose, Mythili P. **Jimson Mathew** Sigma-Delta Analog to Digital Converter for WLAN with RNS based Decimation Filter, *IETECH Journal of Information Systems, International Engineering and Technology Publications*, Vol. 2, No. 2, pp. 68-75, 2008
- **H. Rahaman** , **Jimson Mathew**, A. K Singh, **B. K. Sikdar** , Dhiraj K. Pradhan: Transition Fault Testability in Bit Parallel Multipliers over GF(2^l {m}) *Transactions on Circuit and Systems*, 2008.

Refereed conferences:

- N Mohariya, R Gade, **J Mathew** Comparative Study of Various Deep Learning Models for Structural Anomaly Detection, *International*



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Amenities



Memory Arrays, IEEE International Symposium on Defect and Fault Tolerance in VLSI and Nanotechnology Systems, USA, 2015.

- o J. Prakash, B R Jose, Jimson Mathew "A Novel Excess Sturdy-MASH-Loop-Delay Compensated Cross-Coupled $\Sigma\Delta$ Modulator" 29th International Conference on VLSI Design (VLSI Design 2016), 4-8 January 2016, Kolkata, India. IEEE Computer Society 2008, ISBN 0-7695-3083-4
- o U Urbi, R S Chakraborty, D. K PRadhan "Memristor based Arbiter PUF: Cryptanalysis Threat and its Mitigation" 29th International Conference on VLSI Design (VLSI Design 2016), 4-8 January 2016, Kolkata, India. IEEE Computer Society, ISBN 0-7695-3083-4
- o **Jimson Mathew**, Y Yang, Marco O. D.K Pradhan, "Using Memristor State Change Behavior to Identify Faults in Photovoltaic Arrays, IEEE International Symposium on Defect and Fault Tolerance in VLSI and Nanotechnology Systems, Amstradam, 2014.
- o Sun, Luo, **Jimson Mathew**, S Rishad A., Pradhan, D.K. and Li, Zhen A low power and robust carbon nanotube 6T SRAM design with metallic tolerance. In, Design Automation and Test in Europe (DATE), Dresden, DE, 24 - 28 Mar 2014.
- o Yuanfan Yang, Jimson Mathew, Marco Ottavi, Salvatore Pontarelli, Dhiraj K. Pradhan:
- o 2T2M memristor based TCAM cell for low power applications. DTIS 2015: 1-6
- o B. Mondal, C. Bandyopadhyay, Jimson Mathew, and H. Rahaman, "Diagnosis of SMGF in ESOP Based Reversible Logic Circuit" IEEE International Symposium on Electronic System Design (ISED) 2014.
- o A. Adeyemo, Jimson Mathew, Abusaleh M. Jabir, Dhiraj K. Pradhan: Write scheme for multiple Complementary Resistive Switch (CRS) cells. PATMOS 2014: 1-5
- o J. Jacob, B. R. Jose, Jimson Mathew, "Spectrum Prediction in Cognitive Radio Networks: A Bayesian Approach. NGMAST 2014: 203-208
- o Y. Yang, **Jimson Mathew**, Rishad A., Pradhan, D.K. "Complementary Resistive Switch Based Stateful Logic Operations Using Material Implication. In, **Design Automation and Test in Europe (DATE)**, Dresden, DE, 24 - 28 Mar 2014.
- o M. Huang, **Jimson Mathew** R. A. Shafik, , Dhiraj Pradhan, "A Fast and Effective DFT for Test and Diagnosis of Power Switches in SOCs", **IEEE/ACM Conference on Design, Automation and Test in Europe (DATE 2013)**.
- o Sabarinath, J. Prakash, B. R. Jose, **Jimson Mathew**, Overloading Prediction in Symmetric Cross Coupled Low-Pass Sigma Delta Modulators, Procedia Computer Science, Volume 46, 2015, Pages 1223-1229, ISSN 1877-0509, <http://dx.doi.org/10.1016/j.procs.2015.01.037>. (<http://www.sciencedirect.com/science/article/pii/S1877050915000381>)
- o .V. Ansel, A.V. J Prakash, B. R. Jose, **Jimson Mathew**, Enhanced Noise

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- Gang, Li, Jimson Mathew, Pradhan, Dhiraj "Multinomial Memristor Model for Simulations and Analysis" In, IEEE International Symposium on Electronic System Design (ISED), Singapore, SG, 12 - 13 Dec 2013.
- Sengupta, M. ; Mandal, J.K. ; Jimson Mathew. G-Let Based Authentication/Secret Message Transmission (GASMT) In, IEEE International Symposium on Electronic System Design (ISED), Singapore, SG, 12 - 13 Dec 2013.
- P. Yeolekar, R. A. Shafik, **Jimson Mathew**, Dhiraj Pradhan, S. P. Mohanty, "STEP: A Unified Design Methodology for Secure Test and IP Core Protection. 21st ACM/IEEE Great Lakes Symposium on VLSI (GLSVLSI), , 2012 , pp. 333–338. May 2012.
- R. A. Shafik, B. M. Al-Hashimi, **Jimson Mathew**, Dhiraj Pradhan, S. P. Mohanty, RAEF: A Power Normalized System-Level Reliability Analysis and Estimation Framework. 1th IEEE Computer Society Annual Symposium on VLSI (ISVLSI), pp. 189–194. June 2012.
- S. Banerjee, **Jimson Mathew**, Dhiraj Pradhan, S.P. Mohanty, Variation-Aware TED- Based Approach for Nano-CMOS RTL Leakage Optimization. IEEE 24th International Conference on VLSI Design. ISSN 1063-8210. January 2011.
- **Jimson Mathew**, P. Mahesh, A. M. Jabir, D. K. Pradhan, and S. Mohanty, "Multiple bits Error Detection and Correction in GF Arithmetic Circuits", IEEE International Symposium on Electronic System Design (ISED) 2010.
- Luo Sun, **Jimson Mathew**, Dhiraj Pradhan, Saraju Mohanty, Statistical Blockade Method for Fast Robustness Estimation and Compensation of Nano-CMOS Arithmetic Circuits. IEEE International Symposium on Electronic System Design (ISED), pp. 194–1999. December 2011
- Hosseinabady, M, **Jimson Mathew**, Mohanty, Dhiraj Pradhan, Single-Event Transient Analysis in High Speed Circuits. International Symposium on Electronic System Design (ISED), 2011 , pp. 112–117. December 2011.
- M. Poolakkaparambil, **Jimson Mathew**, A. Jabir, D. K. Pradhan, and S. P. Mohanty, "BCH Code Based Multiple Bit Error Correction in Finite Field Multiplier Circuits", in *Proceedings of the 12th IEEE International Symposium on Quality Electronic Design (ISQED)*, 2011.
- **Jimson Mathew**, H. Rahaman, A. Jabir, S. P. Mohanty, and D. K. Pradhan, "On the Design of Different Concurrent EDC Schemes for S-box and GF(P)", in *Proceedings of the 11th IEEE International Symposium on Quality Electronic Design (ISQED)*, pp. 211–218, 2010.
- L. Sun, **Jimson Mathew**, D. K. Pradhan, and S. P. Mohanty, "Algorithms for Rare Event Analysis in Nano-CMOS Circuits Using Statistical Blockade", in *Special Session on New Horizons in SoC and ASIC Design, Proceedings of the International SoC Design Conference (ISOCC)*, pp. 162--165, 2010.
- S. Banerjee, **Jimson Mathew**, D. K. Pradhan, S. Mohanty and M. Ciesielski, "Variation-Aware TED- Based Approach for Nano-CMOS RTL

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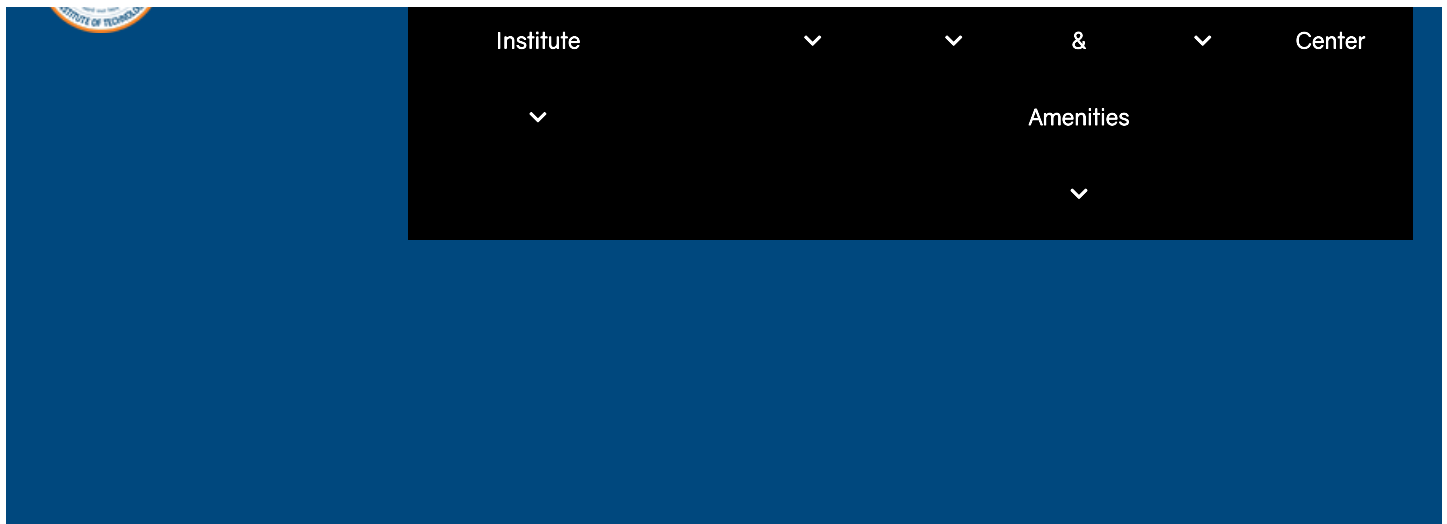


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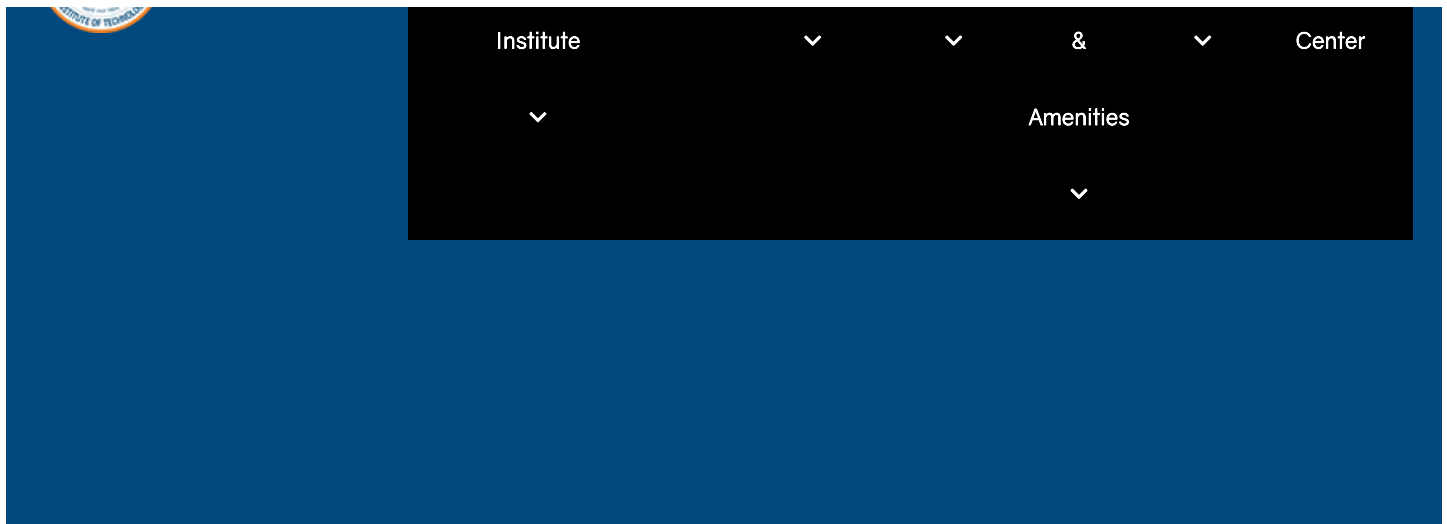
- Random Access Memory for Low-Vdd, High-Speed Embedded Systems" IEEE/ACM Conference on Design, Automation and Test in Europe (DATE 2009), Munic, Germany, 2009.
- o J. Singh, **Jimson Mathew**, D.K Pradhan, S. Mohanty, "Analysis of for Low-Vdd, High-Speed Embedded Systems" IEEE International Conference on VLSI Design, New Delhi, 2009.
 - o H. Rahaman, **Jimson Mathew**, A. Jabir, D. Pradhan, 2009. C-Testable S-Box Implementation for Secure Advanced Encryption Standard. Proc. IEEE On-Line Testing Symposium (IOLTS'08), Sesimbra-Lisbon, Portugal.
 - o J. Singh, **Jimson Mathew**, D.K Pradhan, S. Mohanty, "Single Ended Static Random Access Memory for Low-Vdd, High-Speed Embedded Systems" IEEE/ACE Confernece on Design, Automation and Test in Europe (DATE 2009), Munic, Germany, 2009.
 - o J. Singh, **Jimson Mathew**, D.K Pradhan, S. Mohanty, "Analysis of for Low-Vdd, High-Speed Embedded Systems" IEEE International Conference on VLSI Design, New Delhi, 2009.
 - o **Jimson Mathew**, D.K. Pradhan " Design Techniques for Bit-Parallel Galois Field Multipliers with Online Single Error Correction and Double Error Detection, IEEE International Online Testing Symposium (IOLTS) 2008 .
 - o **Jimson Mathew**, J. Singh, D.K. Pradhan " Fault Tolerant Reversible Finite Field Arithmetic Circuits, IEEE International Online Testing Symposium (IOLTS) 2008.
 - o B.R. Jose, Mythili P. **Jimson Mathew**, R. Remesan "GA-based Optimization of a Fourth-order Sigma-delta Modulator for WLAN", IEEE International Conference on Systems, Man, and Cybernetics (SMC 2008), Singapore.
 - o R. REMESAN, Muhammad A SHAMIM, Dawei HAN, **Jimson Mathew**, "ANFIS and NNARX based Rainfall-Runoff Modeling" IEEE International Conference on Systems, Man, and Cybernetics (SMC 2008), Singapore.
 - o J. Singh, **Jimson Mathew**, D.K Pradhan "A Subthreshold Single Ended I/O SRAM Cell Design for Nanometer CMOS Technologies", In: *20th IEEE International System On Chip Conference (IEEE SOCC 2007), September 2007.*
 - o **Jimson Mathew**, J. Singh, D.K. Pradhan "Fault Tolerant Bit Parallel Finite Field Multipliers Using LDPC Codes" ISCAS 2008..
 - o J. Singh, **Jimson Mathew**, D.K. Pradhan "A Nano-CMOS Process Variation Induced Read Failure Tolerant SRAM Cell" ISCAS 2008 .
 - o **Jimson Mathew**, D. K. Pradhan et al. "Single Error Correcting Finite Field Multipliers over GF(2^m), VLSI Design, 2008.
 - o **Jimson Mathew**, D. K. Pradhan et al. "A Galois Field Based Logic Synthesis Approach with Testability, VLSI Design, 2008.
 - o **Jimson Mathew**, D. K. Pradhan et al. "Design of Reversible Finite Field Arithmetic Circuits with Error Detection, VLSI Design, 2008.
 - o M.Hosseinabady, **Jimson Mathew** and D. K Pradhan "De Bruijn Graph as a



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. In: *20th IEEE International System On Chip Conference (IEEE SOCC 2007)*, September 2007.

- o H. Zarandi, S. G. Miremadi, [Dhiraj Pradhan](#) and [Jimson Mathew](#).
[CAD-Directed SEU Susceptibility Reduction in FPGA Circuits Designs](#).
In: *IEEE International Conference on Circuits and Systems, (ISCAS 2007)*, USA, IEEE, May 2007.
- o M. Hosseinabady, [Jimson Mathew](#) and [Dhiraj Pradhan](#).
[Application of de Bruijn graphs to NoC design](#). In: *Design Automation and Test in Europe Workshops, DATE07-WKS*, pages 111--116. IEEE/ACM, March 2007.
- o H. Rahaman, [Jimson Mathew](#), [Dhiraj Pradhan](#) and A.M. Jabir.
[Easily Testable Implementation for Bit Parallel Multipliers in GF\(2^m\)](#).
In: *IEEE International High Level Design Validation and Test Workshop (HLDVT)*, IEEE, November 2006.
- o [H. Rahaman](#), [Jimson Mathew](#), [Dhiraj K. Pradhan](#): Constant Function Independent Test Set for Fault Detection in Bit Parallel Multipliers in GF(2^m). *VLSI Design 2007*: 479-484.
- o [Jimson Mathew](#), [Koushik Maharatna](#) and [Dhiraj Pradhan](#).
[A Low Power 128-Pt Implementation of FFT/IFFT for High Performance Wireless Personal Area Networks](#).
In: *IEEE PRIME Conference*, pages 377--380. IEEE, June 2006.
- o [Jimson Mathew](#), [Koushik Maharatna](#) and [Dhiraj Pradhan](#).
[Exploration of Power optimal Implementation Technique of 128-Pt FFT/IFFT for WPAN using Pseudo-Parallel Datapath Structure](#).
In: *IEEE International Conference on Communication Systems, Singapore*, IEEE, February 2006.
- o [H. Rahaman](#), [Jimson Mathew](#), [B. K. Sikdar](#), [Dhiraj K. Pradhan](#): Transition Fault Testability in Bit Parallel Multipliers over GF(2^m). *VTS 2007* : 422-430.
- o [Hamid R. Zarandi](#), [Seyed Ghassem Miremadi](#), [Dhiraj K. Pradhan](#), [Jimson Mathew](#): Soft Error Mitigation in Switch Modules of SRAM-based FPGAs. *ISCAS 2007* : 141-144.
- o [R. Stapenhurst](#), [K. Maharatna](#), [Jimson Mathew](#), [José L. Núñez-Yáñez](#), [Dhiraj K. Pradhan](#): On the Hardware Reduction of z-Datapath of Vectoring CORDIC. *ISCAS 2007* : 3002-3005.
- o [Abusaleh M. Jabir](#), [Dhiraj K. Pradhan](#), [Jimson Mathew](#): An efficient technique for synthesis and optimization of polynomials in GF(2^m). *ICCAD 2006*: 151-157
- o [Hamid R. Zarandi](#), [Seyed Ghassem Miremadi](#), [Dhiraj K. Pradhan](#), [Jimson Mathew](#): SEU-Mitigation Placement and Routing Algorithms and Their Impact in SRAM-Based FPGAs. *ISQED 2007* : 380-385.
- o [Costas Argyrides](#), [Jimson Mathew](#), [Ahmad Al-Yamani](#) and [Dhiraj Pradhan](#).
[Performance Analysis of an Error Tolerant Low Power Memory Architecture](#)

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computing: Why not? In *Proceedings of 1st Workshop on Non-Silicon Computation*, pages 23-29, Boston, USA, February 2002.

- **Jimson Mathew**, D. Radhakrishnan, "Fast Residue-to-Binary Converter Architectures," 42nd Midwest Symposium on Circuits and Systems to be held at New Mexico State University in Las Cruces, USA, August 8-11, 1999.
- **Jimson Mathew**, D. Radhakrishnan and T. Srikanthan, "Residue-to-Binary Arithmetic Converter for the set 2^n-1 , 2^n , 2^n+1 , $2^{n+1}-1$," 1999 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing (NSIP'99), 20-23 June, pp. 190-193, 1999.
- **Jimson Mathew**, D. Radhakrishnan and T. Srikanthan, "New Area Efficient Residue-to-weighted Number System Converters", 6th IEEE International Conference on Circuits and Systems, (ICECS 99), Cyprus, September 1999.
- **Jimson Mathew**, D. Radhakrishnan, T. Srikanthan and A. P. Preethy, "A Low overhead Reverse Converter for Fault tolerant RNS," International Technical Conference on Circuits/Systems, Computers and Communications, ITC-CSCC 99, Japan, July 1999.
- D. Radhakrishnan, T. Srikanthan and **Jimson Mathew**, "Using the 2^n property to make an area efficient Residue-to-Binary Converter," International Symposium on Signals, Circuits and Systems (SCS 99), Lasi, Romania, July 6-7, 1999.
- **Jimson Mathew**, D. Radhakrishnan, and T. Srikanthan, "Memoryless Residue-to-Mixed Radix Converter," European Conference on Circuit Theory and Design ECCTD '99 August 1999 Stresa, Italy, 1999.
- **Jimson Mathew**, D. Radhakrishnan and T. Srikanthan, "Memoryless Residue-to-Mixed Radix converter with Totally Self Checking error Detection," 8th international symposium on integrated circuits, devices & systems (ISIC-99) September 8-10, Grand Hyatt, Singapore, 1999.
- **Jimson Mathew** D. Radhakrishnan and T. Srikanthan, "A High Speed RNS FIR Digital Filter Architecture with Totally Self-Checking Code Error Detection," Second International Conference on Information, Communications & Signal Processing (ICICS'99) Singapore, December 1999, Singapore.
- **Jimson Mathew**, D. Radhakrishnan and T. Srikanthan, "Residue-to-binary arithmetic converter for the moduli set $\{2^n+1, 2^n, 2^n-1, 2^{n+1}+1, 2^{n+2}-1\}$," International Conference on Signal Processing Applications & Technology, ICSPAT November 1-4, 1999 Orlando, Florida, USA.
- **Jimson Mathew**, Young Weng Ho and M. Jian "An RNS Based Approach to the Design of Filter Bank Channeliser for Base Station Receivers"-Eleventh Annual Int'l Conf. Signal Processing Applications and Technology, Dallas, Texas, USA. Oct. 2000.
- **Jimson Mathew** and D. Radhakrishnan, An FIR Digital Filter Using One-Hot Coded Residue Representation, The European Signal Processing Conference (EUSIPCO-2000), Tampere, Finland, Oct. 2000.

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