Research Publications

(a) List of Publications in Journals

[1] **Amit Dhawan** and H. Kar, "LMI-based criterion for the robust guaranteed cost control of 2-D systems described by the Fornasini–Marchesini second model," *Signal Processing,* vol. 87, pp. 479-488, 2007.

[2] **Amit Dhawan** and H. Kar, "Comment on "Robust optimal guaranteed cost control for 2D discrete systems"," *IET Control Theory and Applications*, vol. 1, pp. 1188-1190, 2007.

[3] **Amit Dhawan** and H. Kar, "Optimal guaranteed cost control of 2-D discrete uncertain systems: an LMI approach," *Signal Processing,* vol. 87, pp. 3075-3085, 2007.

[4] **Amit Dhawan** and H. Kar, "An LMI approach to robust optimal guaranteed cost control of 2-D discrete systems described by the Roesser model," *Signal Processing,* vol. 90, pp. 2648-2654, 2010.

[5] **Amit Dhawan** and H. Kar, "An improved LMI-based criterion for the design of optimal guaranteed cost controller for 2-D discrete uncertain systems," *Signal Processing,* vol. 91, pp. 1032-1035, 2011.

[6] **Amit Dhawan** and H. Kar, "LMI approach to suboptimal guaranteed cost control for 2-D discrete uncertain systems," *Journal of Signal and Information Processing,* vol. 2, pp. 292-300, 2011.

[7] M. Tiwari and **Amit Dhawan**, "Comment on "Robust guaranteed cost control for a class of two-dimensional discrete systems with shift-delays"," *Multidimensional Systems and Signal Processing,* vol. 23, pp. 415-419, 2012.

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[9] M. Tiwari and **Amit Dhawan**, "A survey on the stability of 2-D discrete systems described by Fornasini-Marchesini second model," *Circuits and Systems,* vol. 3, pp. 17-22, 2012.

[10] **Amit Dhawan**, "Non-fragile controller design for 2-D discrete uncertain systems described by the Roesser model" *Journal of Signal and Information Processing*, vol. 3, no. 2, pp. 248-251, 2012.

[11] M. Tiwari and **Amit Dhawan**, "Robust suboptimal guaranteed cost control for 2-D discrete systems described by Fornasini-Marchesini first model," *Journal of Signal and Information Processing*, vol. 3, no.2, pp. 252-258, 2012.

[12] P. Sharma and **Amit Dhawan**, "Robust non-fragile control for 2-D discrete uncertain systems: An LMI approach," *Journal of Signal and Information Processing*, vol. 3, no. 3, pp. 377-381, 2012.

[13] M. Tiwari and **Amit Dhawan**, "Optimal guaranteed cost control of uncertain 2-D discrete systems with both shift-delays and input delays via memory state feedback," *Transactions of the Institute of Measurement and Control*, vol. 35, pp. 491-502, 2013.

[14] A. Tandon and **Amit Dhawan**, "An LMI approach to non-fragile robust optimal guaranteed cost control of 2-D discrete uncertain systems," *Transactions of the Institute of Measurement and Control*, vol. 36, pp. 644-653, 2014.

[15] A. Tandon and **Amit Dhawan**, "Non-fragile robust optimal guaranteed cost control of uncertain 2-D discrete state-delayed systems", *International Journal of Systems Science*, vol. 47, no. 14, pp. 3303-3319, 2016.

[16] A. K. Singh and **Amit Dhawan**, "Robust Optimal H_∞ Control for Uncertain 2-D Discrete State-Delayed Systems Described by the General Model" *Journal of Signal and Information Processing*, vol. 7, pp. 98-114, 2016.

[17] A. K. Singh, A. Tandon, and **Amit Dhawan**, "Delay-Dependent Robust H_∞ Control for Uncertain 2-D Discrete State Delay Systems Described by the General Model", *Circuits and Systems*, vol.7, pp. 3645-3669, 2016.

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[19] P. Kumar, P. C. Shrivastava, M. Tiwari, and **Amit Dhawan**, "ASIC Implementation of Area Efficient, High Throughput 2-D IIR Filter Using Distributed Arithmetic" *Circuit Systems and Signal Processing*, vol. 37, pp. 2934-2957, 2018.

[20] A. Tandon and **Amit Dhawan**, "An LMI approach to non-fragile robust optimal guaranteed cost control of uncertain 2-D discrete systems with both state and input delays", *Transactions of the Institute of Measurement and Control*, vol. 40, pp. 785-804, 2018.

[21] A. Tandon, **Amit Dhawan**, and M. Tiwari "Optimal guaranteed cost control of uncertain 2-D discrete state-delayed systems described by the Roesser Model via memory state feedback", *Transactions of the Institute of Measurement and Control*, vol. 41, pp. 285-294, 2019.

[22] Prabhat Chandra Shrivastava, Prashant Kumar, Manish Tiwari and **Amit Dhawan**, **"**Efficient Architecture for the Realization of 2-D Adaptive FIR Filters Using Distributive Arithmetic,**"** *Circuit Systems and Signal Processing*, vol. 40, pp. 1458-1478, 2021.

[23] Prabhat Chandra Shrivastava, Prashant Kumar, Manish Tiwari and **Amit Dhawan**, **"**An Efficient Block-Based Architecture for Reconfigurable FIR Filter Using Partial-Product Method,**"** *Circuit Systems and Signal Processing*, vol. 41, pp. 2173 – 2187, Nov 2022. DOI:10.1007/s00034-021-01881-9.

[24] Shashi Kant Sharma, Sumit Kumar Jha, **Amit Dhawan** and Manish Tiwari, "Q-learning based Adaptive Optimal Control for Linear Quadratic Tracking Problem," *International Journal of Control, Automation and Systems* (*IJCAS*), vol. 21(8), pp. 2718-2725, Aug-2023. DOI:10.1007/s12555-022-0364-5.

[25] Raghuvendra Pratap Tripathi, Manish Tiwari, **Amit Dhawan**, Sumit Kumar Jha, Arun Kumar Singh, "Efficient Multiplier-less Perceptron Architecture for Realization of Multi-Layer Perceptron Inference Models," *Circuits, Systems, and Signal Processing.* vol. 42(8), pp. 1-32, March-2023. DOI: 10.1007/s00034-023-02318-1.

[26] Akhilesh Kumar Ravat, **Amit Dhawan**, Manish Tiwari and Sumit Kumar Jha, "Feasibility and stability of preview control for 2-D discrete-time systems described by the Roesser model" *International Journal of Advanced Technology and Engineering Exploration*, vol. 10(107), Oct-2023, pp. 1293-1315. DOI:10.19101/IJATEE.2023.10101035.

[27] Nilesh Kumar Yadav, **Amit Dhawan**, Manish Tiwari and Sumit Kumar Jha," Modified Model of RLS Adaptive Filter for Noise Cancellation." *Circuits Systems and Signal Processing*, vol. 43(5), pp. 1-23, Feb-2024. DOI:10.1007/s00034-024-02605-5.

[28] Akhilesh Kumar Ravat, **Amit Dhawan**, Manish Tiwari and Sumit Kumar Jha, "A Brief Survey on Preview Control for Discrete-time Systems", *High Technology letters*, vol. 34(4), April-2024, pp. 141-150. DOI.org/10.37896/HTL30.4/10513.

[29] Raghuvendra Pratap Tripathi, Virat Krishna, Manish Tiwari, Gaurav Trivedi, **Amit Dhawan**, Prashant Kumar, "Low complexity, high throughput, energy efficient, pipelined and reconfigurable ASIC realization architecture for multi-layer perceptron models." *Neurocomputing*, vol. 598, Sep-2024, pp. 1-14. DOI: 10.1016/j.neucom.2024.128013.

[30] Akhilesh Kumar Ravat, **Amit Dhawan**, Manish Tiwari and Sumit Kumar Jha, "Stability and Preview Control for 2-D Discrete Uncertain Systems described by the Roesser model" *Journal of Systems Engineering and Electronics*, ISSN NO: 1671-1793, vol. 34(7), 2024, pp. 571-594. DOI:20.14118.jsee.2024.V34I7.1841.

[31] Nilesh Kumar Yadav, **Amit Dhawan**, **Manish Tiwari**, and Sumit Kumar Jha,"A state-of-the-art survey on noise removal in a non-stationary signal using adaptive finite impulse response filtering: challenges, techniques, and applications" International Journal of Systems Science, vol.56(4), 2025, pp. 885-918. DOI: 10.1080/00207721.2024.2409850.

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[34] Sanjiv Kumar Gupta, **Amit Dhawan**, Manish Tiwari & Sumit Kumar Jha, "Low-Power Approximate Adder Design for Image Processing and K-Medians Clustering Applications," IETE Journal of Research (03 Dec 2025). DOI: 10.1080/03772063.2025.2592681.

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(b) List of Publications in Conference/Workshop Proceedings

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[5] Chaitanya Kommu and **Amit Dhawan**, "A novel high-speed multiplexer-based full adder," in *Proceedings of Silver Jubilee Conference on Communication Technologies and VLSI Design*, VIT University, Vellore, Tamilnadu, Oct. 8-10, 2009.

[6] M. Tiwari and **Amit Dhawan**, " A survey on stability of 2-D discrete systems described by Fornasini-Marchesini first model," in *Proceedings of International Conference on Power Control and Embedded Systems (ICPCES 2010)*, MNNIT, Allahabad, Nov. 28-Dec. 1, 2010.

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[8] **Amit Dhawan** and A. Tandon, "LMI Conditions to Non-Fragile Robust Optimal Guaranteed Cost Control of 2-D Discrete Systems Described by the Roesser Model," *in Proceedings of International Conference on Next Gen Electronic Technologies: Silicon to Software (ICNETS2),* VIT University, Chennai, March 23-25, 2017.

[9] P. C. Shrivastava, P. Kumar, M. Tiwari and **Amit Dhawan**, "A novel approach for Low Voltage, Low Power deep Sub-threshold 5-T SRAM cell," *in Proceeding of the International Conference on Emerging Trends in Computing and Communication Technologies (ICETCCT-2017, IEEE Conference Record:42896),* held at *Graphic Era Hill University, Dehradun*, 17th – 18th Nov 2017.

[10] P. C. Shrivastava, P. Kumar, M. Tiwari and **Amit Dhawan**, "A survey on the hardware realization of 2-D state space filtering," *in Proceeding of the International Conference on Emerging Trends in Computing and Communication Technologies (ICETCCT-2017, IEEE Conference Record:42896),* held at *Graphic Era Hill University, Dehradun*, 17th – 18th Nov 2017.

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[12] Prabhat Chandra Shrivastava, Prashant Kumar, Manish Tiwari, **Amit Dhawan**, *"A brief Survey on Hardware Realization of Two-Dimensional Adaptive Filters*," in Proceeding of the International Conference on VLSI Communication and Signal Processing (VCAS-2018), held at MNNIT Allahabad, 29th Nov- 01st Dec 2018.

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[14] Raghuvendra Pratap Tripathi, Manish Tiwari, **Amit Dhawan**, Anand Sharma, Sumit Kumar Jha, "*A Survey on Efficient Realization of Activation Functions of Artificial Neural Network*," in Proceeding of the International Conference 2021 Asian Conference on Innovation in Technology (IEEE ASIANCON 2021), held at PCCOER, Pune, 28th – 29th August' 2021. DOI: 10.1109/ASIANCON51346.2021.9544754.

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[17] Sanjiv Kumar Gupta, Nilesh Yadav, **Amit Dhawan**, Manish Tiwari, and Sumit Kumar Jha "*Efficient Approximate Vedic Multiplier: Design, Analysis, and Application in Image Blending*" in proceeding of 2nd International Conference on Computer Vision and Machine Intelligence (CVMI-2023*),* held at IIITM Gwalior, India, 10th – 11th Dec 2023.

[18] A. K. Sharma, Sumit Kumar Jha, Hari Om Shankar Mishra, **Amit Dhawan** and Manish Tiwari, "*Modified March C- Algorithm by Complement Symmetricity Approach and Proposed Hardware" in 8th International Conference on Intelligent Technologies (ICIT – 2023) &* in proceeding of 8th International Conference on New Paradigms in Social Sciences, Humanities and Culture (NPSHC – 2023), *Jakarta, Indonesia*, Organized by Asian Society for Research in Engineering Sciences (ASRES), SPJ Centre for Multi-disciplinary Research (SCMR) Matana University, Jakarta University of Pembangunan Jaya, Jakarta, 15th – 17th December, 2023.

[19] Sanjiv Kumar Gupta, **Amit Dhawan**, Manish Tiwari, and Sumit K. Jha "*Efficient Approximate 8-Bit Binary Parallel Subtractor Circuit: Design, Analysis, and Application in Negative Image Generation*" in proceeding of 9th International Conference on Signal Processing and Communication *(ICSC-2023),* held at JIIT Noida, India, 21st - 23rd December 2023, DOI:10.1109/ICSC60394.2023.1044154.

[20] K. K. Jha, Sumit Kumar Jha, Hariom Shankar Mishra, **Amit Dhawan** and Manish Tiwari, "*Comparative Study of Various Transformation Techniques in Image Fusion*," in proceeding of International Conference on Advances in Emerging Trends in Computer Applications *(*ICAETC-2023), held at BBDITM Lucknow, India, 21st - 22nd December 2023

(c) Book Chapter Published:

[1] Akhilesh Kumar Ravat, **Amit Dhawan**, Manish Tiwari, *"Noise Cancelation using Adaptive Filter,"*Advances in VLSI, Communication and Signal Processing, *Lecture Notes in ElectricalEngineering* (Springer), Vol. 587, 2020, pp. 981-990. DOI: 10.1007/978-981-32-9775-3_87.

[2] Akhilesh Kumar Ravat, **Amit Dhawan**, Manish Tiwari, "*Preview Control for Discrete Time Control Systems*," Recent Trends in Electronics and Communication, *Lecture Notes in Electrical Engineering* (Springer), Vol. 777, 2021, pp. 1157–1176. DOI: 10.1007/978-981-16-2761-3_100.

[3] Akhilesh Kumar Ravat, **Amit Dhawan** and Manish Tiwari, *" LMI and YALMIP: Modelling and Optimization Toolbox in MATLAB,"* Advances in VLSI, Communication and Signal Processing, *Lecture Notes in Electrical Engineering* (Springer), Vol. 683, 2021, pp. 507-515. DOI: 10.1007/978-981-15-6840-4_41.