



*Dr. Debabala Swain*

**Designation:** Associate Professor

**Qualification:** B.E., M. Tech, PhD

**Date of Birth:** 03.07.1984

**Date of Joining:** 01.06.2018

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**WOS:** <https://www.webofscience.com/wos/author/record/AAK-7595-2021>

## Area of Interest

Information Security, IoT, Computer Architecture

## Courses taught

Operating System, Digital Logic, Advanced Computer Architecture

## Career

Associate Professor (2018-present): Rama Devi Women's University, Bhubaneswar

## Teaching Experience

15 years

## Research Experience

15 years

## Administrative/Executive Experience

- HOD, Dept. of Computer Science, Rama Devi Women's University (September 2020 -September 2022).
- Coordinator, Dept. of Mathematics, Rama Devi Women's University (October 2019-September 2020).
- Coordinator, Career Counselling and Placement Cell, Rama Devi women's University, since June, 2021.
- Coordinator, MoU Committee, Rama Devi women's University, since June 2021.
- Coordinator, Modernization of Classrooms Committee, Rama Devi women's University since June, 2021.

- Coordinator, UGC Cell, Rama Devi women's University from January, 2020 to June 2022.
- Chairperson, Board of Studies, Dept. of Computer Science, Rama Devi women's University, Bhubaneswar in the Academic year 2021-22, 2022-23.

## Research Guidance

- ✓ PhD thesis supervised : **07 (SEVEN)**
- ✓ M Tech/M.Phil thesis supervised : **12 (TWELVE)**
- ✓ M.Sc thesis supervised : **27 (TWENTY-SEVEN)**

## Research Grants

S. No	Title of the project	Funding Agency	Amount	Sanction year & duration
1	IoT for Social Causes	Odisha State Higher Education Council, Govt. of Odisha.	4.32 Lakhs	2019 (Two Years)
2	Bridging Social Exclusion: An Open learning and Assessment System for Visually Impaired (VI) Learners	Odisha State Open University, Sambalpur	1 Lakh	2019 (One Year)
3	Advanced Networking and Computer Architecture (ANCA) under MODROB 2009-10.	AICTE	10 Lakhs	2009 (One Year)

## Publications

## Patents

Patent no.	Patent type	Patent title	Year of filing	Name of Inventor(s)	Status
2021106326	Australian Innovation patent	Intelligent Gesture Keyboard System & Method for Visually Impaired User Using Machine Learning & IoT Technology	2021	Swain, Debabrata; Patro, Pramoda; Swain, Debabala et al	Granted

## Journal publications

1. An improved region-based embedding technique for data hiding and image recovery using multiple ROI and RONI”, Paikaray, B.K., Swain, D., Chakravarty, S. International Journal of Electronic Security and Digital Forensics, 2023, 15(2), pp. 101–113.
2. Debabala Swain, Monalisa Swain, “An effective watermarking technique using BTC and SVD for image authentication and quality recovery” is published in Integration, Elsevier with Volume 83, March 2022, Pages 12-23 (Scopus, SCI indexed).
3. Debabala Swain, Bijay Paikaray, Sujata Chakravarty, “Reversible Selective Embedding for DICOM Image Security and Integrity using Visual Cryptography” is published in Int. J. of Electronic Security and Digital Forensics, 2021 Vol.13 No.5, pg:498-514, Inderscience Pub (Scopus, WoS indexed).
4. P Pattanaik, D Swain "Deep Filter Bridge for Malaria Identification and Classification in Microscopic Blood Smear Images" is published in International Journal of Advanced Intelligence Paradigms, 2021, vol-20(1-2), pp. 126–137, Inderscience Pub (Scopus Indexed).
5. Jayanta Mondal, Debabala Swain "A Novel 3-Layer RDH Method for Medical Images with EPR Hiding in Encrypted Domain" is published in International Journal of Electronic Security and Digital Forensics, 2020 Vol.12 No.1, pg:1-15, Inderscience Pub, (Scopus, WoS indexed).
6. Jayanta Mondal, Debabala Swain "A Novel LSB Based RDH with Dual Embedding for Encrypted Images" is published in International Journal of Electronic Security and Digital Forensics, 2019 Vol.11 No.3, pg: 281-293, Inderscience Pub, (Scopus, WoS indexed).
7. D. Swain, S.K. Pani, D. Swain, Diagnosis of coronary artery disease using 1-D convolutional neural network, International Journal of Recent Technology and Engineering, 2019, vol-8, iss-2, pg no: 2959-2966. (Scopus indexed).
8. D. Swain, S.K. Pani, D. Swain, An efficient system for the prediction of coronary artery disease using dense neural network with hyper parameter tuning, International Journal of Innovative Technology and Exploring Engineering, 2019, vol-8, iss-6s, pg no: 689-695. (Scopus indexed).
9. Banchhanidhi Dash, Debabala Swain “An exclusive cache replacement policy based on read priority and dynamic sliding” is published in International Journal of High Performance System Architecture, Vol 7 No 3 2017, pg;120-128, Inderscience Pub (Scopus Indexed).
10. Debabala Swain, Jayanta Mondal, "An Improved LSB Based RDH Technique with Better Reversibility" is published in the International Journal of Electronic Security and Digital Forensics, Vol. 9, No.3, April 2017, Inderscience Pub (Scopus Indexed).

11. Debabala Swain, B N Dash, "Adaptive Weight-Based (AWB) Bypass Algorithm for Last-Level Cache" is published in International Journal of Computational Systems Engineering, Vol. 3, Nos. 1/2, 2017, pg:74-81, Inderscience Pub (Scopus Indexed).
12. Debabala Swain, B N Dash, B Paikaray, "Performance Evaluation of Multi-Level Cache Using Adaptive Weight Ranking Policy" is published in the International Journal of Applied Engineering Research, Volume 9, Number 24 (2014), pp. 30347-30354 (Scopus indexed).
13. Debabala Swain, Rahul Rajan, Bijay Paikaray "Efficient Key Management and Cipher Text Generation Using BCD Coded Parity Bits" is published in Procedia in Computer Science, Volume 57, 2015, Pages 703-709, Elsevier (Scopus indexed).
14. Debabala Swain, Paresh Rath, Bijay Paikaray "An Optimized Encryption Technique Using Arbitrary Matrix with Probabilistic Encryption" is published in Procedia in Computer Science, Volume 57, 2015, Pages 1235-1241, Elsevier (Scopus indexed).

## **Book/book chapter Publications**

1. P Dewangan, D Swain "Reversible Region-Based Embedding in Images for Secured Telemedicine Approach" is published in Springer AISC, Vol – 1101, pg: 545-554 (Scopus Indexed), ISBN: 978-981-334-858-5.
2. M Swain, D Swain "A Spatial Domain Technique for Digital Image Authentication and Tamper Recovery" is published in Springer AISC, Vol – 1101, pg: 555-564, ISBN: 978-981-334-858-5 (Scopus Indexed).
3. D Swain, S S Sahoo, "Empowering the Visually Impaired Learners with Text-to-Speech based Solution" is published in Springer AISC, Vol – 1101, pg: 181-188, ISBN: 978-981-334-858-5 (Scopus Indexed).
4. B Das, D Swain "Copy-move Forgery Detection using Scale Invariant Feature Transform" is published in Springer AISC, Vol – 1101, pg: 521-532, ISBN: 978-981-334-858-5 (Scopus Indexed).
5. D Swain, S S Sahoo, "Transforming the Lives of Socially Dependent to Self-Dependent using IoT" is published in Springer AISC, Vol – 1101, pg: 181-188, ISBN: 978-981-334-858-5 (Scopus Indexed).
6. Madhusmita Dash, D Swain "Privacy Preservation in ROI of Medical Images using LSB Manipulation" is published in Springer AISC, Vol- 1101, pp: 245-253, ISBN: 978-981-15-1883-6 (Scopus Indexed).
7. P Dewangan, D Swain "An Extensive Study on Medical Image Security with ROI Preservation: Techniques, Evaluations, and Future Directions" is published in Springer AISC, Vol- 1101, pp: 465-476, ISBN: 978-981-15-1883-6 (Scopus Indexed).
8. M Swain, D Swain "A Competitive Analysis on Digital Image Tamper Detection and Its Secure Recovery Techniques using Watermarking" is published in Springer AISC, Vol- 1101, pp: 477-484, ISBN: 978-981-15-1883-6 (Scopus Indexed).
9. Jayanta Mondal, Debabala Swain, "An Improved RDH model for Medical Images with a Novel EPR Embedding Technique" is published in the Springer CCIS series, CCIS 905, pp. 421–430, 2018, ISBN: 978-9811318115. (Scopus Indexed).
10. Jayanta Mondal, Debabala Swain, "A Contemplator on Topical Image Encryption Measures", published in the book Security Breaches and Threat Prevention in the Internet of Things, IGI Global publications, pp 189-212, ISBN: 9781522522966.

11. Dushant P Singh, Debabala Swain "An Application of NGBM for Forecasting Indian Electricity Power Generation" published in Springer AISC Book Series Vol-556, pp:203-214, ISBN: 978-8132227328 (Scopus Indexed).
12. B N Dash, Debabala Swain, "A Pragmatic Delineation on Cache Bypass Algorithm in Last-Level Cache (LLC)" published in Springer AISC Book series, volume-411 pp: 37-45, December 2015, ISBN: 978-81-322-2729-8 (Scopus Indexed).

### **Participation in Conferences & Seminars (as invited/plenary/chair)**

1. Debabrata Swain, S K Pani, Debabala Swain, "Metaphoric Investigation on Prediction of Heart Disease using Machine Learning" presented in IEEE ICACAT 2018, Organized by LNCT, Bhopal.
2. Debabala Swain, Jayanta Mondal, "A Prevalent Study on Secure Medical Image Digitization through RDH" is published in IEEE 2017 Fourth ICIIIP, pp: 502-507, Scopus Indexed.
3. Debabala Swain, Devee Darshani Panda, "Competency Assessment of Image Compression in the Lossy and Lossless Domain", is published in IEEE 2017 Fourth ICIIIP, pp:508-512. Scopus Indexed.
4. Debabala Swain, R P Swain, "Foremost Performance in a Multi-Level Cache using AWRP" presented in ETCC-2014 organized by Centurion University, Bhubaneswar.