

1. Details of Patents

Sl. No	Patent Number	Title of the patent	Country	Date of Filing	Status
[P:1].	202431055122	A genetic coding video frame features for content-based video surveillance system	India	19/07/2024	Published
[P:2].	202631061987	Blockchain Integrated Verifiable Deep Inference Framework for Privacy-Preserving Edge-AI Based VSS Anomaly Detection	India	15/05/2026	Filed
[P:3].	202631062256	A System and Method for Osteoporosis Screening in Indian Hip X-Rays using Fourier-Integrated Hybrid CNN-Transformer	India	16/05/2026	Filed

2. List of Selected Papers Published/Accepted in SCI/SCIE Journals

- [J:1]. Deepankumar S, Rengaraj R, Pranesh R, P. Mishra, and **A. K. Pal**, "A 3D Chaotic Map-based Novel Intra and Inter-level Bit Plane Image Content Encryption", *Journal of Information Security and Applications*, vol. 98, May 2026, doi: [10.1016/j.jisa.2026.104389](https://doi.org/10.1016/j.jisa.2026.104389) [SCIE (Q2), IF: 4.4]
- [J:2]. P. Kumar, **A. K. Pal**, S. H. Islam, and P. Soni, "LPSF-DA-VSS: Lightweight and Provably Secure Cloud-Server Framework for Data Access in Video Surveillance System", *IEEE Transactions on Consumer Electronics*, vol. 72, no. 1, pp. 584-595, Feb. 2026, doi: [10.1109/TCE.2025.3634328](https://doi.org/10.1109/TCE.2025.3634328) [SCIE (Q1), IF: 9.9]
- [J:3]. M. Chaurasia, **A. K. Pal**, S. H. Islam, and J. Pradhan, "ASCON-Based Mutual Authentication and Secure Surveillance Video Data Management in Smart Cities Using Blockchain," *IEEE Transactions on Consumer Electronics*, vol. 71, no. 2, pp. 3029-3039, May 2025, doi: [10.1109/TCE.2025.3552591](https://doi.org/10.1109/TCE.2025.3552591). [SCIE (Q1), IF: 9.9]
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- [J:5]. J. Pradhan, **A. K. Pal**, S. H. Islam, and C. Bhaya, "DNA Encoding-Based Nucleotide Pattern and Deep Features for Instance and Class-Based Image Retrieval," *IEEE Transactions on NanoBioscience*, vol. 23, no. 1, pp. 190–201, Jan. 2024, doi: [10.1109/TNB.2023.3303512](https://doi.org/10.1109/TNB.2023.3303512). [SCIE (Q1), IF: 4.2]
- [J:6]. S. Mukherjee, **A. K. Pal**, and S. Maji, "A copy-move forgery detection technique using DBSCAN-based keypoint similarity matching," *International Journal of Machine Learning and Cybernetics*, vol. 15, no. 12, pp. 5607–5634, Dec. 2024, doi: [10.1007/s13042-024-02268-3](https://doi.org/10.1007/s13042-024-02268-3). [SCIE (Q3), IF: 2.9]
- [J:7]. S. Mondal, **A. K. Pal**, and S. H. Islam, "CBIF-M: A content-based image filtering and retrieval scheme using multi-classifier filtering framework," *Computers and Electrical Engineering*, vol. 118, p. 109450, Sep. 2024, doi: [10.1016/j.compeleceng.2024.109450](https://doi.org/10.1016/j.compeleceng.2024.109450). [SCIE (Q1), IF: 5.5]
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- [J:13]. S. Kumar, **A. K. Pal**, N. Varish, I. Nurhidayat, S. M. Eldin, and S. K. Sahoo, "A hierarchical approach based CBIR scheme using shape, texture, and color for accelerating retrieval process," *Journal of King Saud University - Computer and Information Sciences*, vol. 35, no. 7, p. 101609, Jul. 2023, doi: [10.1016/j.jksuci.2023.101609](https://doi.org/10.1016/j.jksuci.2023.101609). [SCIE (Q1), IF: 6.4]
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- [J:18]. P. Soni, **A. K. Pal**, S. H. Islam, A. Singh, and P. Kumar, “Provably secure and biometric-based secure access of e-Governance services using mobile devices,” *Journal of Information Security and Applications*, vol. 63, p. 103016, Dec. 2021, doi: [10.1016/j.jisa.2021.103016](https://doi.org/10.1016/j.jisa.2021.103016). [SCIE (Q1), IF: 4.4]
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- [J:21]. P. Mishra, C. Bhaya, **A. K. Pal**, and A. K. Singh, “A novel binary operator for designing medical and natural image cryptosystems,” *Signal Processing: Image Communication*, vol. 98, p. 116377, Oct. 2021, doi: [10.1016/j.image.2021.116377](https://doi.org/10.1016/j.image.2021.116377). [SCIE (Q2), IF: 2.1]
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3. List of Selected Papers Published/Accepted in Conference

- [C:1]. A. M. Tripathi, S. Mondal, **A. K. Pal**, and M. Raj, “AGRT-Net: A Hybrid Attention-Guided Region Transformer for Osteoporosis Classification from Indian Femur Radiographs,” *International Conference on Complex System Modelling and Artificial Intelligence (CSMAI 2026)* held at

- Aleksandër Moisiu University, Durrës, Albania, Europe, May 21-22, 2026. **(Received Best Paper Award)**
- [C:2]. S. Jaiswal, M. Chaurasia, and **A. K. Pal**, “Design of a Secure Medical Data Access Framework Using PKI and Blockchain Technology”, *International Conference on Complex System Modelling and Artificial Intelligence (CSMAI 2026)* held at Aleksandër Moisiu University, Durrës, Albania, Europe, May 21-22, 2026.
 - [C:3]. S. Mondal, **A. K. Pal**, P. Mishra, and M. Raj, “Deep Learning Approaches for Automated Osteoporosis Classification on Indian Hip X-Ray Data,” *12th IBS Conference on Marketing & Business Strategy (ICOMBS 2026) in Association with Centre of Sustainable Energy (IIT Roorkee)*, held at IBS Hyderabad, India, 13-14 March, 2026. **(Received Best Paper Award)**
 - [C:4]. S. Mondal, S. H. Islam, **A. K. Pal** and D. Samanta, "GRASP-Former: A Lightweight Global-Random Sparse Attention for Domain-Aware Multi-Class Obscenity Detection," *2025 40th International Conference on Image and Vision Computing New Zealand (IVCNZ)* held at Wellington, New Zealand, 19-21 November 2025, pp. 1-6, doi: 10.1109/IVCNZ67716.2025.11281822. **(Core Rank Australasian C)**
 - [C:5]. G. Roy, **A. K. Pal**, M. Raj, J. Pradhan, “Knee Osteoarthritis Detection and Categorization with Deep Learning Models”, *Proceedings of the Second International Symposium on Artificial Intelligence. ISAI 2025*, held at NIT Sikkim, 05-07 March, 2025, Lecture Notes in Networks and Systems, vol 1536. Springer. **(Received Best Paper Award)**
 - [C:6]. L. Dinda, J. Pradhan, **A. K. Pal**, M. Raj, G. N. Patel, “Whirling Triangle-Based Geometric and Texture Feature Extraction with Attention-Driven Hybrid Models for Multiclass Osteoporosis Classification from Knee X-Rays”, *Proceedings of the 10th National Conference on Computer Vision, Pattern Recognition, Image Processing, and Graphics (NCVPRIPG 2025)*, held at IIT Jammu, 16-18 July 2025, Communications in Computer and Information Science, vol 2684. Springer, Cham.
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 - [C:8]. V. Mishra, S. K. S. Chaganti, P. Mishra, **A. K. Pal**, and S. K. Panda, “Multi-Modal Self-Supervised Learning for the Detection of Rare Diseases”, *6th International Symposium on Signal and Image Processing (ISSIP 2025)*, November 24-25, 2025, held at Rochester Institute of Technology Kosovo, Europe, Lecture Notes in Electrical Engineering, vol. 1626. Springer.
 - [C:9]. K. Malaviya, P. Mishra, and **A. K. Pal**, “Lossless Medical Image Compression Using Block-Wise Burrows–Wheeler Transform and Modified Run Length Encoding,” *Fifth International Symposium on Signal and Image Processing (ISSIP 2024)*, 25-26 March, 2024, held at Rochester Institute of Technology Kosovo, Europe, Lecture Notes in Electrical Engineering, vol 1269. Springer.
 - [C:10]. P. Kumar, **A. K. Pal**, and S. H. Islam, “LASKV: Lightweight Authenticated Session Key Agreement for Video Surveillance System,” *Fifth International Symposium on Signal and Image Processing (ISSIP 2024)*, 25-26 March, 2024, held at Rochester Institute of Technology Kosovo, Europe, Lecture Notes in Electrical Engineering, vol 1269. Springer. **(Received Best Paper Award)**
 - [C:11]. B. Biswas, M. Chaurasia, **A. K. Pal**, and N. Kar, “A Blockchain-Based Secure Framework for Storage and Access of Surveillance Video Data,” *Fifth International Symposium on Signal and Image Processing (ISSIP 2024)*, 25-26 March, 2024, held at Rochester Institute of Technology Kosovo, Europe, Lecture Notes in Electrical Engineering, vol 1269. Springer.
 - [C:12]. S. H. Islam, S. Kumar, V. J. Immanuel, P. Sonthalia, S. Mondal, and **A. Pal**, “Securing Connected Vehicles: An Evaluation Framework for CAN bus-enabled In-vehicle Communications,” *3rd International Conference on Computing Advancements (ICCA-24)*, held at American International University-Bangladesh (AIUB), Dhaka, October 17–18, 2024, pp. 162–168, Association for Computing Machinery.
 - [C:13]. S. Gupta, B. Biswas, and **A. K. Pal**, “A Real-Time Framework for Secure Storage of Surveillance Video Data in Cloud Environment,” *3rd International Conference on Computing (ICCA-24)*, held at American International University-Bangladesh (AIUB), Dhaka, October 17–18, 2024, pp. 177–182, Association for Computing Machinery.

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4. Books/Reports/Chapters/General articles etc.

A. List of Books/Chapters Published

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Book Chapters:

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B. List of Papers Published/Accepted in Scopus Journals

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- [Sc:2]. S. Mukherjee and **A. K. Pal**, “A hybrid SWT-SVD based multiresolution features for robust image copy-move forgery detection,” *Multimedia Tools and Applications*, vol. 83, no. 16, pp. 48141–48163, May 2024, doi: [10.1007/s11042-023-17279-5](https://doi.org/10.1007/s11042-023-17279-5). [Scopus (Q1)]
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