Sensor Sink-Cloud Server with Low Energy Consumption

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ABSTRACT

Wireless sensor networks have vital applications in areas such as healthcare, target tracking, and environmental control. The transfer of this private and sensitive data across insecure communication channels exposes it to a variety of security and privacy threats. To combat these dangers, solutions relying on techniques such as machine learning, bilinear pairing, elliptic curve cryptosystems, and biometrics have been proposed. Machine learning methods and bilinear pairing processes, on the other hand, have extraordinarily significant computing overheads, making them unsuitable for sensor devices. In terms of performance, it exhibits the lowest computation overheads, energy consumption and average communication costs among its peers.

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References

[1] S. A. Bini, "Artificial Intelligence, Machine Learning, Deep Learning, and Cognitive Computing: What Do These Terms Mean and How Will They Impact Health Care?" J. Arthroplasty, vol. 33, no. 8, pp. 2358–2361, 2018, doi: 10.1016/j.arth.2018.02.067.

[2] A. S. Sultan, M. A. Elgharib, T. Tavares, M. Jessri, and J. R. Basile, "The use of artificial intelligence, machine learning and deep learning in oncologic histopathology," J. Oral Pathol. Med., vol. 49, no. 9, pp. 849–856, 2020, doi: 10.1111/jop.13042.

[3] P. P. Shinde and S. Shah, "A Review of Machine Learning and Deep Learning Applications," Proc. - 2018 4th Int. Conf. Comput. Commun. Control Autom. ICCUBEA 2018, pp. 1–6, 2018, doi: 10.1109/IC- CUBEA.2018.8697857.

[4] Q. Bi, K. E. Goodman, J. Kaminsky, and J. Lessler, "What is machine learning? A primer for the epidemiologist," Am. J. Epidemiol., vol. 188, no. 12, pp. 2222–2239, 2019, doi: 10.1093/aje/kwz189.

[5] J. Yu et al., "Noninvasive IDH1 mutation estimation based on a quantitative radiomics approach for grade II glioma," Eur. Radiol., vol. 27, no. 8, pp. 3509–3522, 2017, doi: 10.1007/s00330-016-4653-3.

[6] R. Chen and M. Snyder, "Promise of personalized omics to precision medicine," Wiley Interdiscip. Rev. Syst. Biol. Med., vol. 5, no. 1, pp. 73–82, 2013, doi: 10.1002/wsbm.1198.

[7] Rui Ha, Pengyu Liu and Kebin Jia, "An Improved Adaptive Median Filter Algorithm and Its Application", International conference in Advances in Intelligent Information Hiding and Multimedia Signal Processing, 2016.

[8] Madhu S. Nair , P. M. Ameera Mol, "An Efficient Adaptive Weighted Switching Median Filter for Removing High Density Impulse Noise", Springer ,J. Inst. Eng. India, 95(3):255–278, 2014.

[9] Duan F, Zhang Y-J,"A Highly effective impulse noise detection algorithm for switching median filters", IEEE Signal Process. Lett., 17(7), pp. 647–650, 2010.

[10] L. E. Rossovskii, "Image Filtering with the Use of anisotropic diffusion",ISSN 0965-5425, Computational Mathematics and Mathematical Physics,Vol. 57, No. 3, pp. 401–408, 2017.

[11] Resmi R. Nair, Ebenezer David and Sivakumar Raja gopal, "A robust anisotropic diffusion filter with low arithmetic complexity for images", EURASIP Journal on Image and Video Processing, vol-48, 2019.

[12] M. Hanmandlu, D.V. Ramona Murthy Vamsi Krishna Madasu, "Fuzzy Model based recognition of handwritten Hindi characters", International Conference on Computer and Information Science (ICIS 2007) 0-7695-2841-4,IEEE 2007.

[13] Akanksha Gaur, Sunita Yadav, "Handwritten Hindi character recognition using K Means clustering and SVM", International Symposium on Emerging Trends and Technologies in Libraries and Information Services, pp. 65-70,IEEE 2015.

[14] Nikita Singh, "An Efficient Approach for handwritten devanagari character recognition based on Artificial Neural Network", IEEE 2018.

[15] Whig, P., & Ahmad, S. (2019). Methodology for Calibrating Photocatalytic Sensor Output. *International Journal of Sustainable Development in Computing Science, 1*(1), 1-10. Retrieved from https://ijsdcs.com/index.php/ijsdcs/article/view/4

[16] Pawan Whig and S. N Ahmad, "CMOS Integrated VDBA-ISFET Device for Water Quality Monitoring, International journal of intelligent engineering and systems, accepted for publication 2014,Vol.7, No.1,2014. (Scopus) ISSN: 2185-3118

[17] Pawan Whig and Vaibhav Bhatia," Performance Analysis of Multi-Functional Bot System Design Using Microcontroller" International Journal of Intelligent Systems and Applications,2014 ,02 pp 69-75.ISSN No: 2074-9058

[18] Pawan Whig and S. N. Ahmad, "Development of Low Power Dynamic Threshold PCS System", Journal of Electrical and Electronic Systems,2014, Vol. 3, Issue3, pp. 1-6. ISSN No:2332-0796

[19] Pawan Whig and S. N. Ahmad, "Novel FGMOS Based PCS Device for Low Power Applications ",Photonic Sensor(Springer), 2015,Vol.5,Issue 2, pp 1-5.(SCI, ISI Index) ISSN No: 1674-9251

[20] Pawan Whig and S. N. Ahmad,"Impact of Parameters on characteristic of Novel PCS" ,Canadian journal of Basic and applied Science, 2015 , Vol.3, Issue2,pp 45-52. ISSN No: 2292-3381

[21] Ruchin, Chandan Mahto and Pawan Whig," Design and Simulation of Dynamic UART Using Scan Path Technique (USPT)", International Journal of Electrical, Electronics & Computer Science Engineering" 2015,Vol 1, pp 6-11. ISSN No: 2348-2273

[22] Aastha Sharma, Abhishek Kumar, Pawan Whig," On the performance of CDTA based novel analog inverse low pass filter using 0.35µm CMOS parameter", International Journal of Science, Technology & Management, 2015, Vol 4, Issue 1, pp. 594-601. ISSN No: 1460-6720

[23] Pawan Whig and S. N Ahmad," Simulation and Performance Analysis of Low Power Quasi Floating Gate PCS Model ", International Journal of Intelligent Engineering and Systems, 2016, Vol 9, Issue 2, pp. 8-13(Scopus). ISSN: 2185-3118

[24] Pawan Whig and S. N Ahmad ," Ultraviolet Photo Catalytic Oxidation (UVPCO) Sensor for Air and Surface Sanitizers Using CS amplifier", global Journal of researches in engineering: F 2016, Vol. 16, Issue 6, pp.1-13. ISSN Numbers: Online: 2249-4596 Print: 0975-5861 DOI: 10.17406/GJRE

[25] Arrese A and Albarran AB (2003) Time and media markets: Summary and research agenda. In: Albarran AB and Arrese A (eds) Time and Media Markets. London: Lawrence Erlbaum Associates Publishers, pp. 161–171.