Prediction of Smart Building Indoor Temperature Using IoT and Machine Learning

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A R T I C L E I N F O	ABSTRACT
	Due to fast growth and improved living, the need for usable energy has grown astronomically over the last few decades, particularly in the building industry. The energy performance of the building is determined by a number of factors, including the surrounding weather, the structure's features, and the energy consumption pattern. This paper describes a technique for combining the Internet of Things (IoT) with certain widely used machine learning algorithms to develop a predictive model that can be utilised for smart building indoor temperature forecasting. For establishing viability to a completely unknown dataset, this prediction model was developed using on-line learning approach. To verify the technique, the article conducts a Machine Learning-based experimental using recorded actual sensor data . Following that, the study recommends incorporating the following technique into an IoT architecture based on Edge Computing to enable the building to operate in an energy-efficient manner.

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References

[1] **Albarran AB (2002) Media Economics: Understanding Markets, Industries and Concepts, 2nd ed. Iowa: Iowa State Press.**

[2] **Albarran AB (2010) The Media Economy. New York: Routledge.**

[3] **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.**

[4] **Becker G (1965) A theory of the allocation of time. Economic Journal 75(3): 493–517.**

[5] **Pawan Whig and S. N. Ahmad, Performance analysis and frequency Compensation Technique for Low Power Water Quality Monitoring Device Using ISFET Sensor. International Journal of Mobile and Adhoc Network (IJM AN) (May 2011) ISSN (ONLINE): 2231-6825 ,ISSN(PRINT):2249-202X,Volume 1, pp:80-85.**

[6] **Pawan Whig and S. N. Ahmad, On the Performance of ISFET-based Device for Water Quality Monitoring. Int'l J. of Communications, Network and System Sciences (IJCNS) (Nov 2011) ISSN (ONLINE): 1913-3715, ISSN (PRINT):1913-3723, Vol 4 pp: 709-719.**

[7] **Pawan Whig and S. N. Ahmad, DVCC based Readout Circuitry for Water Quality Monitoring System, International Journal of Computer Applications (IJCA) ISBN : 973-93-80869-71-6,Volume 49 pp: 1-7.**

[8] **Pawan Whig and S. N. Ahmad, A CMOS Integrated CC-ISFET Device for Water**

Quality Monitoring, International Journal of Computer Science Issues ,Volume 9, Issue 4, July 2012, ISSN (online): 1694-0814 pp: 365-371.

[9] Pawan Whig and S. N. Ahmad, Performance Analysis of Various Readout Circuits for Monitoring Quality of Water Using Analog Integrated Circuits, International Journal of Intelligent Systems and Applications (IJISA) ISSN: 2074-904X (Print), ISSN: 2074-9058 (Online) Volume 4, No.11, October 2012 pp:91-98.

[10] Pawan Whig and S. N. Ahmad, A Novel Pseudo PMOS Integrated CC-ISFET device for water quality monitoring, Journal of integrated circuit and system published 2013 Volume 8, No.2, October 2013 pp:1-6. ISSN, 1807-1953 (Scopus).

[11] Pawan Whig and S. N. Ahmad, "Simulation of Linear Dynamic Macro Model of Photo Catalytic Sensor in SPICE" Compel, the international journal of computation and mathematics in electrical and electronic engineering, Vol. 33 No. 1/2, 2014. ISSN: 0332-1649 (SCI, ISI index)

[12] Vaibhav Bhatia and Pawan Whig" A secured dual tune multi frequency based smart elevator control system," International journal of research in engineering and advanced technology",Vol. 4 Issue 1 , 2013. ISSN (Online): 2319-1163

[13] Pawan Whig and S. N. Ahmad, A Novel Pseudo NMOS Integrated ISFET device for water quality monitoring, Active and Passive Components Hindawi article i.d 258970. Vol. 1 Issue 1, 2013(Scopus). ISSN 0882-7516

[14] Vaibhav Bhatia and Pawan Whig, "Modeling and Simulation of Electrical Load Control System Using RF Technology, International Journal of multidisplinary science and engineering",2013,Vol. 4 No.2, pp 44-47 ISSN 2045-7057.

[15] Pawan Whig and S. N. Ahmad, Development of Economical ASIC For PCS For Water Quality Monitoring ,Journal of Circuit System and Computers, Vol. 23, No. 6 , 2014, pp: 1-13. ISSN: 0218-1266 (SCI, ISI index)

[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