

(54) Title of the invention : IOT BASED DEEP LEARNING APPROACH FOR EEG SIGNAL PROCESSING USING WIRELESS COMMUNICATION

<p>(51) International classification :A61B 050000, A61B 052910, A61B 053690, G06N 030400, G06N 030800</p> <p>(86) International Application No :PCT// Filing Date :01/01/1900</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)Ms. Indira Devi Gedela Address of Applicant :Assistant Professor, ECE, Anil Neerukonda Institute of Technology and Sciences, Visakhapatnam - 531162, Andhra Pradesh, India Visakhapatnam ----- 2)Sabhayata Uppal Soni 3)Dr. T. Srikanth 4)Dr. M. Jaganathan 5)Dr. Neha Jain 6)Mrs. M. Lakshaga Jyothi 7)Mr. Mateen Yousuf 8)Dr. Priti Rajiv Godse 9)Mr. Narayanasamy Rajendran 10)Mr. Arpan Murmu 11)Dr. Nalla Srinivas 12)Riya Mangal 13)Mr. J. Logeshwaran 14)Dr. V. Kannan Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)Ms. Indira Devi Gedela Address of Applicant :Assistant Professor, ECE, Anil Neerukonda Institute of Technology and Sciences, Visakhapatnam - 531162, Andhra Pradesh, India Visakhapatnam ----- 2)Sabhayata Uppal Soni Address of Applicant :Assistant Professor, Electrical & Electronics Engineering, UIET, Panjab University, Chandigarh(UT)- 160014, India Chandigarh ----- 3)Dr. T. Srikanth Address of Applicant :Associate Professor & HOD, CSE, Malla Reddy Institute of Technology and Science (S1), Hyderabad - 500100, Telangana, India Hyderabad ----- 4)Dr. M. Jaganathan Address of Applicant :Associate Professor, CSE, Malla Reddy Institute of Technology and Science (S1), Secunderabad - 500100, Telangana, India Secunderabad ----- 5)Dr. Neha Jain Address of Applicant :Associate Professor, Department of Engineering , Delhi Technical Campus, Greater Noida - 201306, Uttar Pradesh, India Greater Noida ----- 6)Mrs. M. Lakshaga Jyothi Address of Applicant :Assistant Professor, Computer Science And Engineering, Knowledge Institute Of Technology, Kakapalayam, Salem - 636308, Tamilnadu, India Salem ----- 7)Mr. Mateen Yousuf Address of Applicant :Teacher, Department of School Education, Govt of J&K, Srinagar - 190008, Jammu and Kashmir, India Srinagar ----- 8)Dr. Priti Rajiv Godse Address of Applicant :School of Dental Sciences Karad, Satara - 415002, Maharashtra, India Satara ----- 9)Mr. Narayanasamy Rajendran Address of Applicant :Lecturer, Information Technology Department., University of Technology and Applied Sciences – Nizwa, Al Dhakliya ----- 10)Mr. Arpan Murmu Address of Applicant :Assistant Professor, Computer Science and Engineering, Brainware University, Kolkata - 700061, West Bengal, India Kolkata ----- 11)Dr. Nalla Srinivas Address of Applicant :Associate Professor, Computer Science and Engineering, Sree Chaitanya Institute Of Technological Science, Karimnagar - 505002, Telangana, India Karimnagar ----- 12)Riya Mangal Address of Applicant :B.Tech II Semester Student, Computer Science, Vivekananda Global University, Jaipur - 303012, Rajasthan, India Jaipur ----- 13)Mr. J. Logeshwaran Address of Applicant :Research Scholar, Department Of Electronics And Communication Engineering, Sri Eshwar College Of Engineering, Coimbatore, Tamil Nadu, India Coimbatore ----- 14)Dr. V. Kannan Address of Applicant :Managing Director, CLDC Research And Development No.997, Mettupalayam Road, Near X-Cut Signal, R.S.Puram, Coimbatore - 641002, Tamil Nadu, India Coimbatore -----</p>
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(57) Abstract :
This work presents an Internet of Things (IoT) based deep learning approach for EEG signal processing using wireless communication. The proposed system consists of a low-cost wireless EEG headset, a Raspberry Pi as an edge device, and a cloud-based deep learning model. The wireless EEG headset is used to acquire EEG signals and transmit them to the Raspberry Pi. The Raspberry Pi is used to pre-process the EEG signals and transfer them to the cloud-based deep learning model. The proposed deep learning model is used to classify the EEG signals into various categories. The proposed system is tested using real-time EEG data and the results show that the proposed system is capable of accurately classifying EEG signals in real-time. This proposed system has the potential to provide a low-cost and efficient solution for EEG signal processing for various applications.

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