



All



ADVANCED SEARCH

Conferences > 2023 4th International Confer... ?

An Effective Hybrid Spectrum Sensing Methodology in Cognitive Radio Network Using Deep Temporal Convolution Network

Publisher: IEEE

Cite This



R. KoteswaraRao ; C. Sharanya All Authors ...



76 Full Text Views

Alerts

Manage Content Alerts Add to Citation Alerts

Abstract

Document Sections

- I. Introduction
- II. Existing Works
- III. Intelligent Framework of Spectrum Sensing in Cognitive Radio Network
- IV. Deep Learning-Based Prediction for Spectrum Sensing in Cognitive Radio Network
- V. Results and Discussion

Show Full Outline

Authors

Figures

References

Keywords



Download PDF

Abstract:

"Spectrum sensing is a crucial component in Cognitive Radio Networks (CRN)". CRN systems' capacity to reliably and quickly sense the principal signal is a vital requireme... **View more**

Metadata

Abstract:

"Spectrum sensing is a crucial component in Cognitive Radio Networks (CRN)". CRN systems' capacity to reliably and quickly sense the principal signal is a vital requirement. One effective technique to detect activity in Primary Users (PU) is Hybrid Spectrum Sensing (HSS). It involves various detectors to reach an agreement regarding the PU state. The ineffective use of the permitted frequency makes CR a promising technology for current and future communications. The ability to use the available bandwidth of other wireless networks for communication to boost their use is the reason for this. A novel methodology for HSS in CR utilizing deep learning is offered to get around this. The proposed framework comprises several phases; initially, the model utilizes the energy from energy detection. The collected data are fed into the deep learning model as Deep Temporal Convolutional Network (DTCN) for the prediction objective. Finally, the validation is carried out and compared with different schemes. Hence, the proposed model outperforms with better energy detection than existing radio technologies.

Published in: 2023 4th International Conference on Smart Electronics and Communication (ICOSEC)

Metrics

Date of Conference: 20-22 September 2023**DOI:** 10.1109/ICCOSEC58147.2023.10276060

More Like This

Date Added to IEEE Xplore: 16 October 2023**Publisher:** IEEE**► ISBN Information:****Conference Location:** Trichy, India **Contents****I. Introduction**

SS is a critical responsibility of the “secondary user (SU)” in a CRN. SS monitors PU activity to avoid clashes with SU, which should be silent when PU operates on a particular channel [1]. HSS is the method for detecting activity in PU that works well. Deciding the PU's status involves merging different sensors [2]. How to optimally utilize spectrum resources in mobile phone networks has been the subject of extensive research in recent years. “Dynamic Spectrum Access (DSA)” is the primary approach for using resources of the spectrum. “Reinforcement Learning (RL)” for DSA has garnered much interest because of its exceptional efficiency. Spectrum inefficiencies and underutilization must be rectified. With CR [3], a successful solution for the problems has evolved. CR has made it possible for SU to recognize and use the gaps of frequency left by PU, decreasing spectrum scarcity and increasing spectrum usage.

Authors



Figures



References



Keywords



Metrics

**More Like This**

Deep Learning with Wireless Sensor Network Platform for Multimedia Data Modeling

2023 Annual International Conference on Emerging Research Areas: International Conference on Intelligent Systems (AICERA/ICIS)

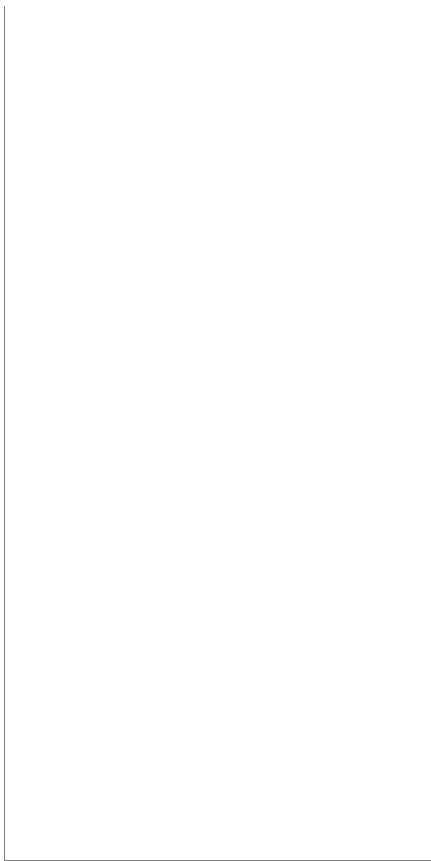
Published: 2023

An effective mechanism for early chronic illness detection using multilayer convolution deep learning predictive modelling

2021 International Conference on Technological Advancements and Innovations (ICTAI)

Published: 2021

Show More



IEEE Personal Account

CHANGE USERNAME/PASSWORD

Purchase Details

PAYMENT OPTIONS
VIEW PURCHASED DOCUMENTS

Profile Information

COMMUNICATIONS PREFERENCES
PROFESSION AND EDUCATION
TECHNICAL INTERESTS

Need Help?

US & CANADA: +1 800 678 4333
WORLDWIDE: +1 732 981 0060
CONTACT & SUPPORT

Follow



[About IEEE Xplore](#) | [Contact Us](#) | [Help](#) | [Accessibility](#) | [Terms of Use](#) | [Nondiscrimination Policy](#) | [IEEE Ethics Reporting](#)  | [Sitemap](#) | [IEEE Privacy Policy](#)

A not-for-profit organization, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.

© Copyright 2024 IEEE - All rights reserved, including rights for text and data mining and training of artificial intelligence and similar technologies.

IEEE Account

- » Change Username/Password
- » Update Address

Purchase Details

- » Payment Options
- » Order History
- » View Purchased Documents

Profile Information

- » Communications Preferences

» Profession and Education

» Technical Interests

Need Help?

» **US & Canada:** +1 800 678 4333

» **Worldwide:** +1 732 981 0060

» Contact & Support

[About IEEE Xplore](#) | [Contact Us](#) | [Help](#) | [Accessibility](#) | [Terms of Use](#) | [Nondiscrimination Policy](#) | [Sitemap](#) | [Privacy & Opting Out of Cookies](#)

A not-for-profit organization, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.

© Copyright 2024 IEEE - All rights reserved. Use of this web site signifies your agreement to the terms and conditions.