

Design of Hybrid Controller to Control Demand using Optimal Power Point Tracking

International Conference On
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ICMATSD-2023
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This is to certify that **Prof. Mantri L. R., Professor, Department of Electrical Engineering (Electrical Machine & Drive), M. S. Bidve Engineering College, Latur.** has Participated / Presented a paper titled **"Design Hybrid Controller to Control Demand using Optimal Power Point Tracking"** in the International Conference held on 26th & 27th May, 2023.

His/her paper has been published in Peer Reviewed Refereed & UGC Listed Journal No. 47023 Galaxy Link - ISSN - 2319-8508 with Impact Factor - 7.878.


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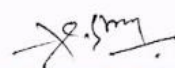
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13. Design Hybrid Controller to Control Demand using Optimal Power Point Tracking

Prof. Mantri L. R.

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Professor, Department of Electrical Engineering (Control System),
V. D. F. Engineering College, Latur.

Abstract

With the advent of grid-connected photovoltaic systems for power generation, new technologies must be created to maintain a constant and stable balance between the supply and demand of the electricity produced. Therefore, it is necessary to accurately forecast the production and consumption of solar energy. Solar power generation and electricity demand are probabilistic and non-stationary and often incompatible with each other. Supply and demand imbalances can be costly and lead to long-term inefficiencies in electricity production and distribution. The goal of this work is to suggest ways to balance the supply and demand of PV power generation and distribution systems. To achieve this, we will build and combine three different tools. 1) Predictive model for predicting solar energy production, 2) Predictive model for forecasting demand and 3) A real-time control algorithm that uses the output of a predictive model to adjust the output voltage of a PV system to maintain a balance between supply and demand.

Our prediction model is based on time series prediction tools and artificial neural networks. The control algorithm is called Optimal PowerPoint Tracking PowerPoint Tracking (OPPT) and is based on perturbation and monitoring algorithms. Use real-world data to evaluate the performance of a system that combines prediction and controller.

Keywords: OPPT (Maximum Power Point Tracking), SMC (Sliding Mode Control), SPWM (Switching Pulse Width Modulation), P&O (Perturb and Observe)

Testing Of Extract Load and transform(ETL)In Assorted Dimension and Perspective: A data science integration Approach

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Testing of Extract Load and Transform (ETL) in Assorted Dimensions and Perspectives: A Data Science Integration Approach

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This book covers key areas of engineering research. The contributions by the authors include partial discharge, electrical insulation, pd inception voltage, rise time waveform, global system for mobile communication, car theft detection, public vehicles security, frequencies identification, light fidelity, wireless networks, healthcare institutes, data communication, extract-load-testing, soft computing, big data clusters, nature inspired techniques, passive house concept, passive house, design and building process, sustainable development, energy management, renewable energy sources, microgrids control, hybrid energy storage, twisted copper cables, feature selective validation, ethernet technology, feature selective validation tool, energy dissipation structures, hydraulic jump, water energy control, channel permeability, fossil fuels, climate change, environmental impact, hydroelectric power, waste materials, natural resources, global warming, degradation in environmental conditions, power transformer reactance, finite element method, power supply, leakage reactance, primary leakage flux. This book contains various materials suitable for students, researchers, and academicians in the field of engineering research.

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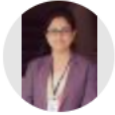
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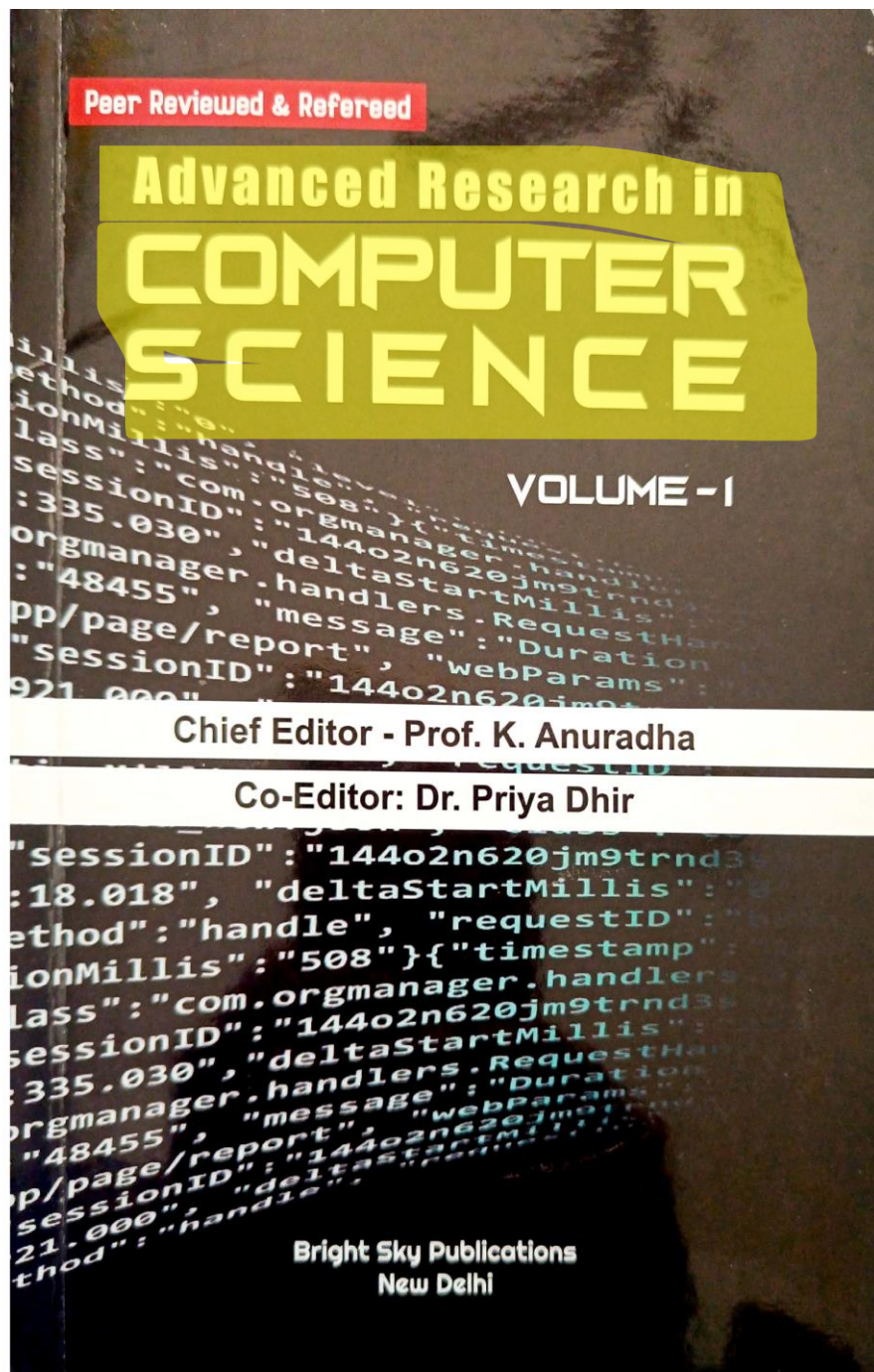
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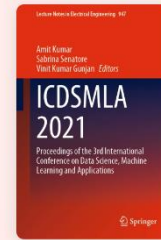
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Applications of Artificial Intelligence in Multiple Disease Detection

^{1*} Mr. Sushant Deshmukh and ^{2*} Dr. Parag Bhalchandra

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Abstract

Now a days we can use AI nearly everywhere like we can use it for education purpose, in the agriculture field, automated vehicles, finance, entertainment, robotics, social media, fraud detection, traffic management, gaming, banking applications, chatbot application, defense, business, astrology, healthcare etc. but this chapter will mainly focus on healthcare application which will be useful to detect many diseases using the AI technology. This chapter also describes how deep learning models of AI will be beneficial to detect the diseases.

1. Introduction

Artificial Intelligence can play a very vital role in the healthcare sector. As we know that due to unhealthy lifestyle i.e., poor diet, lack of physical activities or exercise, obesity number of diseases may occur and to detect the diseases or to cure the diseases there are a very few numbers of doctors. So, doctors have lot of workload and so there is lot of rush in the hospitals and doctors has very less time to check the each and every patient. Sometimes due to less time doctors could not check the patient thoroughly and they take assistance of the other doctors who are very new in the medical profession like M.B.B.S or B.A.M.S students or some B.A.M.S, or B.H.M.S doctors who have very less experience to treat the patients. After checking of these newly appointed or unskilled doctor's, patient visit to the expert doctor but he generally gives the prescription based on the unskilled or newly appointed doctor's reports or judgments.

So, in order to increase the accuracy of disease detection & do detection fastly there is need of some computerized automated system which will detect the disease more accurately and speedily. Sometimes doctors or technicians can also make mistakes in detection so to avoid that man made mistakes also we require some expert system which will assist in the automatic disease detection fast.

Critical Disease Setection Using Deep Learning

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Critical disease detection using deep learning

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Abstract: Critical diseases if not treated at an early stage, then it may cause the death of patient or disability of any organ. There are some diseases if we do not take care at an early stage that also cause death or temporary or permanent disability of some organs. This research mainly focuses on regional critical disease detection using deep learning model. The regional critical diseases are diseases which occurs in the particular region or city that causes most of the deaths or disability. Regional critical diseases used for this study like Pneumonia, Malaria, Alzheimer, Brain Tumor, Covid, Diabetes, Breast Cancer, Heart Disease, Chronic Kidney Disease, Dengue are selected by consulting with the doctors through knowledge transfer mechanism and also by taking the base of some news. This research uses different deep learning models like Dense Net, Res Net 50, CNN, deep ANN model to train the model.

Keywords: CNN, Deep ANN

1. Introduction

Critical diseases can be more dangerous if we do not take care at an early stage but most of the time peoples who suffer from the critical disease has very less or no knowledge regarding how these diseases are occurred and what precaution should be taken in order to avoid these kinds of diseases. This research tries to convey some very introductory information regarding how theses regional critical disease is occurred what are the risk factors and the technologies by which these diseases can be detected fastly and accurately.

1.Penumonia: - Pneumonia is an infection of the lungs produced by bacteria, viruses, or other microorganisms. Main risk factor for Penumonia is a weakened immune system.

2.Malaria: - It is a serious blood illness caused by Anopheles mosquitos. People who have little or no immunity to malaria, such as young children and pregnant women are more likely to become very sick and die.

3.brain tumor: - It is caused by abnormal cell growth in the brain or spinal cord

7.heart disease: -A heart attack occurs when the flow of blood to the heart is severely reduced or blocked. Risk factors include a poor diet, lack of exercise, obesity etc.

which changes the functioning of the brain. In general, men are more likely than women to develop a brain tumor Home and work exposures. Exposure to solvents, pesticides, oil products, rubber may increase the risk of developing a brain tumor.

4.Alzheimer: - This disease is a brain disorder that slowly destroys memory and thinking skills and, eventually, the ability to carry out the simplest tasks. Age is the single most significant factor. The likelihood of developing Alzheimer's disease doubles every 5 years after you reach 65.

5.Corona virus disease (COVID-19): - is an infectious disease caused by the SARS-CoV-2 virus. The disease can spread from person to person through small droplets from the nose or mouth which are spread when a person with COVID-19 coughs or exhales.

6.Diabetes: -It is a disease which is caused by a high blood sugar level in the body. Risk factors for developing diabetes include overweight, lack of physical activity, history of other diseases, age etc.

8.Breast cancer: - It is defined as the abnormal reproduction of breast cells which grows into a malignant mass of tissue known as a tumor. Most breast

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A REVIEW ON NATURAL LANGUAGE PROCESSING APPLICATIONS

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ABSTRACT

The area of computer science known as "Natural Language Processing," or "NLP," focuses on making it possible for computers to comprehend and process human language. The primary goal of NLP is to programme computers to process and analyse vast amounts of natural language data. In this essay, we've looked at a few NLP applications, including chatbots, spam detection, machine translation, spelling checks, speech recognition, and information retrieval. Our research goes even farther to determine the significance of NLP in the modern world and to foresee potential NLP application fields in the future.

Keywords: AI, NLP, Spam Detection, Sentiment Analysis.

INTRODUCTION

The technique known as natural language processing allows machines to comprehend, examine, manipulate, and interpret human languages. In order to execute tasks like translation, automatic summarization, named entity recognition (NER), speech recognition, relationship extraction, and topic segmentation, it aids developers in organising knowledge. NLP processes human language and produces computer understandable output or human understandable response as part of artificial intelligence application / implementation [10]. The main components of Natural Language Processing are:

1. Natural Language Understanding

By removing metadata from text, such as concepts, entities, keywords, emotions, relations, and semantic roles, natural language understanding (NLU) enables computers to comprehend and analyse human language.

2. Natural Language Generations

The process of translating electronic data into natural language representation is known as natural language generation (NLG). Text planning, Sentence planning, and Text Realization are the three key components.

Phases of NLP:

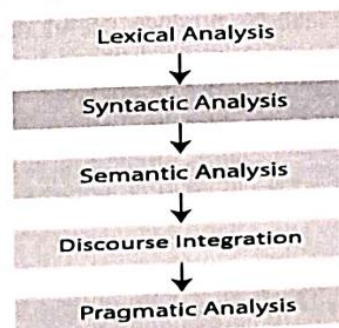


Fig1 – Phases of NLP

A Compact Asymmetric Coplanar Strip (ACS) Antenna for WLAN and Wi-Fi Applications

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I. Introduction

II. Antenna

Abstract:

An asymmetric coplanar strip (ACS)-based compact antenna for multiband applications is presented in this paper. Antennas are miniaturized using ACS methods. The antenna is dimension is $14 \times 25 \times 1.6 \text{ mm}^3$, making it exceedingly small. The suggested antenna is made of FR4 material with a $\epsilon_r = 4.4$ and a thickness of 1.6. To achieve multiband features, the monopole antenna is modified by including semi-circle and 5-shaped pieces in the

Authors

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Citations

Keywords

Metrics

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Multiple critical disease detection using deep learning model

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Multiple critical disease detection using deep learning model

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ABSTRACT

Diseases become critical diseases when we do not take care of them in the very primary stage. There are several critical diseases all can be detected in an automated way using different deep learning models with the help of the flask web app. Out of that this research studies 10 diseases like Pneumonia, Malaria, Alzheimer's, Covid, Brain tumour, Heart disease, Diabetes, Breast cancer, kidney disease, and Dengue. Pneumonia & Alzheimer's disease is detected using Dense Net model with accuracy of 95.67% and 97.77% respectively. Malaria, Covid, Brain tumour disease are detected using Resnet 50 model with accuracy of 99.60%, 95.57%, 96.69% respectively. Heart disease, Diabetes, Breast cancer, kidney disease detected using deep ANN model and accuracy got is 85.54%, 78.86%, 96.49% and 85.09% respectively. Dengue disease is detected using deep CNN model and accuracy got is 99.75%.

KEYWORDS

Driver smoking; feature selection; logistic regression; support vector classifier

1. INTRODUCTION

Critical diseases are the most hazardous diseases if we do not take attention to the disease at an early stage then that becomes very complex, and the patient may not survive, or some parts of the body are badly affected due to the disease and that body part can be permanently damaged.

There are near about 32 critical diseases available that are categorized as critical diseases but there are some diseases that we do not take care of at the very beginning then that become critical diseases. This research uses both types of diseases that are already known as critical diseases and other diseases which become critical if not taken precautions at a primary stage.

In an existing study, doctors check the patients physically according to their timing, and if the doctor feels some critical symptoms present in the patient's body, then the doctor sends the patient to the pathology lab or diagnostic centre. The patient gets the report from the lab and again patient goes to the hospital. Due to distance, the time required, and a lot of rush in the hospital patient avoids going to the hospital. Sometimes patient also does not get appointment according to their timing so patients avoid going to hospitals.

This research may be useful to detect the disease at anytime and anywhere using the flask web application with the help of different deep learning models. This application can be used to detect the 10 diseases like Pneumonia, Malaria, Alzheimer's, Covid, Brain tumour, Heart disease, Diabetes, Breast cancer, kidney disease, and Dengue currently.

If you want to add any disease that can be added into this web application. There are a number of research done so far before this web application but no there is no application that detects 10 diseases at the same time using a deep learning model. There are some applications like multi diseases, but these applications use machine learning techniques and only 4 to 5 diseases are detected using these applications.

Machine learning application has accuracy, but it needs to select input features that are most important manually. Machine learning uses fewer layers to train the network so accuracy may get affected that's why deep learning models are used to train the network automatically using CNN models and use more layers as we go deep more, we get the accuracy in the deep learning model.

Currently, some doctors or diagnostic centres, etc. use Computer-aided systems to diagnose the patient correctly. Doctors use computer-aided systems to confirm the disease if they feel the patient may suffer from the disease, they give instructions to do some kind of tests based on that test and the CAD system doctors confirm the disease. But doctors use only one application for one disease which is also costly. If any patient wants to diagnose many diseases at the same time it is not possible to use these kinds of applications.

This research detects 10 diseases at the same time using a single platform. This works like a super specialty hospital in which patients get the facility of treating many diseases under one roof. Using this web application one can detect nearly diseases neatly and correctly.