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Gowrishankar S.
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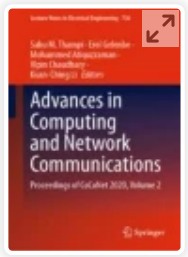

Advances in Computing and Network Communications pp 31–40

Deep Learning-Based Approach for Skin Burn Detection with Multi-level Classification

Jagannatha Karthik, Gowrishankar S. Nath & A. Veena

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Abstract

In most recent years, convolutional neural network (CNN) model is the detail of craftsmanship form fruitful for photograph investigation. In this exploration, we are incorporating CNN models for classification of skin burn based on visual investigation. The aim of this paper is to develop a computerized mechanism in classifying the burn based on severity and compare the accuracies of various CNN algorithms for the same. Rapid development in deep learning enables automated learning of semantics, deep features that are easily learnt which addresses the problems of existing traditional image processing. The proposed method

uses deep neural network, recurrent neural network and CNN model. The training is performed using dataset of 104 images classified into degree 1, degree 2 and degree 3 depending on the severity of the burn. Experimental analysis is also provided to compare the accuracies of different methods and identify the best model with better accuracy. The proposed computerized model can aid the medical experts in diagnosing the wound and suggest appropriate treatment depending on the severity of the skin burn. The proposed model could encourage telemedicine practise with the help of modern technology to remotely diagnose the patients especially in rural areas where there could be shortage of physicians.

Keywords

Convolution neural network

Deep neural network

Recurrent neural network **Degree of skin burn**

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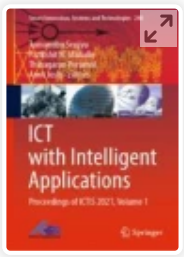

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Curiosity-Driven Dynamic Reconfiguration of Swarm Robots by Using Simple Behaviours

K. R. Shylaja & Darryl N. Davis

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Abstract

This research paper focuses on designing evolving swarm robot groups that actively learn to optimize the goal achievement. The swarm groups mimic social insect swarm and can adopt optimal behaviours over a period of time by learning the effect of behaviours on their internal and external goal states. These swarms are made to dynamically reconfigure themselves into different topologies based on their capabilities and their desired goals. The collective behaviour of swarms can be driven by special cognitive states that are attained by individual robots at microscopic levels, such as curiosity or boredom. This paper discusses an

algorithm for macroscopic swarm design that enables a robot at microscopic level to adopt a new behaviour. The curious cognitive state is exploited to explore and learn new approaches to improve the speed of convergence. This study can lead the future artificial swarms to evolve from naïve behaviours to self-learn complex behaviours with continuous evolution by adopting better learning algorithms and eliminate slowly the behaviours that are suboptimal.

Keywords

Artificial robot swarm groups **PSO**

Reactive cognitive architecture

Cognitive states **Curiosity** **Boredom**

State machines **Cognitive architectures**

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Enhancing Data Protection in Cloud Computing using Key Derivation based on Cryptographic Technique

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A Comprehensive Survey on Web Recommendations Systems with Special Focus on Filtering Techniques and Usage of Machine Learning

K. N. Asha & R. Rajkumar

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Abstract

In present scenario, to improve the consumers buying/purchasing experience, use of technological innovations like Recommender system is very prominent. This small yet powerful utility analyzes the buying pattern of a consumer and suggests which items to buy or use. Recommender systems can be applied to varied fields of consumer's interest like online shopping, ticket booking and other online contents. Most of the e-commerce sites are attracting huge number of potential customers by providing useful suggestions

regarding buying a product or service. This technique is mainly based on the use of Machine Learning, which enables the system to make decisions efficiently. Earlier, these recommendations were mainly relying on filtering process such as collaborative filtering, content based, knowledge based, demographic and hybrid filtering. These filtering techniques, which constitute the recommender system, are discussed in detail in this study. The survey is conducted to describe the various means and methods of recommendation to consumer in real time. This survey presents a comparative study among different types of recommender system based on various parameters and filtering schemes. Moreover, it shows a significant improvement in recommender system by using machine learning based approaches.

Keywords

Web recommendation **E-commerce**

Filtering techniques **Machine learning**

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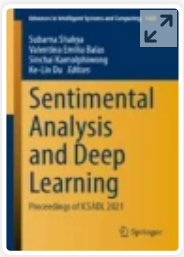

Sentimental Analysis and Deep Learning, pp 1–13

Analysis of Healthcare Industry Using Machine Learning Approach: A Case Study in Bengaluru Region

Poornima Taranath, Sweta Das & S. Gowrishankar

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Abstract

The huge collection of data under the domain of health informatics has always been of crucial importance in giving insights into human health and its sundry causes. With technology rising day after day, this data can be visualized under different lights which are depicted in the following paper. Data analysis is the answer to the challenges of the healthcare industry because of the plasticity offered in implementing its techniques in various frameworks and technologies. A notion about Machine learning and its association with big data has also been discussed here. The Machine learning techniques have always made analysis better; with a

similar analogy, the paper gives a glimpse of ameliorating the patient's lives who are looking for healthcare facilities in the Bengaluru region.

Keywords

Data analysis **Big data** **Machine learning**

Web scraping **Healthcare**

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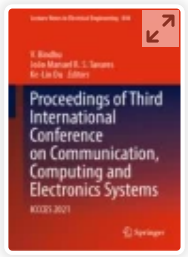

Proceedings of Third International Conference on Communication, Computing and Electronics Systems pp 401–408

Fish Species Detection Using Deep Learning for Industrial Applications

K. Yashaswini, A. H. Srinivasa & S. Gowrishankar

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Abstract

In this world, almost 50% depend on sea food which serves as a major protein source and also one of the important sources of the economic considering for countries from all over the world. Directly, the seafood can be used for many of the applications which will be processed further to a very high functional and also as well as the products of the nutraceutical food which will affect the health of the human beings. In many of the examples, skin of the fish and fins is used in order to extract collagen and gelatin. In the fishing industry, for the classification purpose it is necessary to identify the fish species is very important. Our proposed methodology is based on

the CNN and faster RCNN technique for the fish species identification in the industrial applications. In this proposed work, CNN and faster RCNN almost show 95 and 98% of the accuracy.

Keywords

Deep learning **CNN** **RCNN**

Fish species **Gelatin** **Collagen**

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A Deep Learning-Based Detection of Wrinkles on Skin

H. Deepa, S. Gowrishankar & A. Veena

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Abstract

Aging is a natural process that affects the human body. The primary focus of this research work is to study the appearance of face wrinkles, which is considered as one of the most noticeable changes that happen as people become older. In any medical cosmetology, skin analysis becomes an important procedure for the wrinkle detection or any other medical problems. Maximum of the conventional wrinkles examination schemes is semi-automatic. Also, these methods require a lot of human interference. Since different applications are available for estimating the age based on the facial images and other skin-related factors, the main aim of this research study is to use deep CNN for

detecting the wrinkles in the human skin. The proposed work describes a novel method for predicting age and wrinkles by using image processing and other advanced technologies. The proposed method is more focused on the wrinkles detection based on convolution neural network. The wrinkles on the skin, which gets increased based on the age, are being used as the discriminating factor to predict the age of the human being by using the images. AI, deep learning and CNN techniques are incorporated to achieve fast performance system. Also, this research work will provide a detailed description about the selected test images and database. The software design of the front end and the backend details is displayed along with the result screenshots. The proposed method initially detects the wrinkles by using facial images. Based on noticed wrinkles on the skin, the facial structures are removed to find ROI. Previously, wrinkles in the ROI were identified by using a pattern recognition algorithm. A classifier is intended to offer improved accuracy for identification when it is targeted at a specific problem. The proposed technique can efficiently diagnose the skin illness using restricted features mined as ROI, assess the stage of wrinkles and analyze the stage of wrinkles.

Keywords

Deep learning **Image segmentation**

Edge detection **Hough transformer**

Region of interest **Neural networks**

Texture features

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Advance System for Driving Assistance Using Arduino and Proteus Design Tool

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In the recent years, the automobile industry has improved a lot for modifying and adding more advanced features to make more protective safe environment for the drive and the vehicle on the road which inter reduces road accidents. As the major cause of road accidents are due to the fault in the system or ignorance of the driver. This paper presents the digital framework, which works as a control system along with some sensors connected to the centralized microcontroller for proper alert information to the driver. The main idea is to make the driver more comfortable by providing digital driver warning and control system in Realtime with the help of CAN protocol which is incorporated with the controller. The major advantage of this system is to provide the user with relevant information like status of traffic light ahead of the vehicle, leakage of gas in the vehicle and glaring effect of lights from the upcoming vehicles to control the high beam and low beam of the vehicle.

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As observed, the world is changing very rapidly and in the same way the different technologies are also being developed for the comfort of human lives. It also makes life easier and fails to prove. Presently, this research work focuses on the vehicle protection and driver comfort [1]. It also being improvised continuously for any elimination of errors in the system. In this paper we focus on the mechanism framework where in the driver feels more comfortable during the driving with add-on control over the vehicle. Here, the system consists of a transceiver section which are controller via the microcontroller which intern connected to the CAN bus [2]. The same is interlinked with some sensors like LDR, Temperature sensor, Gas Sensor, buzzer and light dimmer circuit. At the receiver side it is incorporated with RF module to receiver the traffic signal status [1,3]. Most of the accidents are happening in a regular interval and people are getting injured, this is because of the ignorance of the driver or less awareness or not obeying the traffic signals or losing control of the vehicle [3]. This paper compromises a digital system to caution the driver related to the information of the traffic signals which is ahead of the vehicle with safety features like knowing the status of any leakage of gas in the gas-powered vehicles [4]. The system is designed to not only display the information related to traffic signal and any leakage of gas it also controls the high-beam and low-beam of the vehicle automatically without interruption of the driver [5]. This adds an advantage to the user while driving without any hassle. The control system is situated in the vehicle where in driver has more interaction with the vehicle for safer driving.

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Proceedings of International Conference on Computational Intelligence and Data Engineering, pp 265–275

OntoYield: A Semantic Approach for Context-Based Ontology Recommendation Based on Structure Preservation

G. Leena Giri, Gerard Deepak, S. H. Manjula & K. R. Venugopal

Conference paper | First Online: 21 December 2017

571 Accesses | **31** Citations

Part of the Lecture Notes on Data Engineering and Communications Technologies book series (LNDECT,volume 9)

Abstract

With the introduction of the Web 3.0 standards on the World Wide Web, there is a need to include semantic techniques and ontologies in the Web based Recommendation Systems. In order to build query relevant domains and make information retrieval more efficient, it required recommending ontologies based on the query. Most ontology recommendation systems do not preserve the associations and axioms between them rather ontology matching and clustering algorithms tend

to deduce logics dynamically. In this paper, a semantic algorithm for ontology recommendation has been proposed, where query-relevant ontologies are recommended by preserving the relationships between the ontological entities. The semantic similarity is computed using the query and the concepts initially and further between the query and description logics which makes it a context-based ontology recommendation system. A strategic approach called as SemantoSim is proposed to compute the semantic similarity.

Keywords

Ontologies **Ontology recommendation**

Recommender systems **Semantic similarity**

Web 3.0

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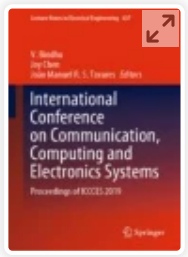

International Conference on Communication, Computing and Electronics Systems pp 645–653

Efficient Utilization of Resources of Virtual Machines Through Monitoring the Cloud Data Center

H. Priyanka & Mary Cherian

Chapter | First Online: 05 March 2020

661 Accesses | **1** Citations

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 637)

Abstract

In cloud computing paradigm, the management and utilization of infrastructural resources are a challenging process to service providers as well as the cloud users. A cloud user accesses services based on the service provider's pay and use strategy. In this case, the users fail to utilize the computational resources effectively; it does not only lead to paying more, but also degrade the performance of the cloud data center. To overcome these inopportune situations, we propose a conceptual framework with a heterogeneous environment in a cloud data center. This model is proposed to enhance the management of

infrastructural resources by provisioning virtual machines effectively and to improve the efficiency of resource utilization of applications running inside virtual machines (VMs). This paper presents the initial framework for data center setup with the results.

Keywords

Cloud data center **Virtual machine**

Resource utilization

Computer and control systems

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Analysis and Exploitation of Twitter Data Using Machine Learning Techniques

Ganeshayya Shidaganti, Rameshwari Gopal Hulkund & S. Prakash

Conference paper | First Online: 28 December 2017

704 Accesses | **2** Citations

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Abstract

In the present era, Internet is a well-developed technology that supports most of the social media analysis for various businesses such as marketing of a product, analysis of opinions of different customers, and advertising most of the brands. This gathered huge popularity among different users with a fresh way of interaction and sharing the thoughts about the things and materials. Hence, social media comprises of huge data that categorizes the attributes of Big Data, namely volume, velocity, and variety. This leads to the research work of this huge data related to different

organizations and enterprise firms. To analyze the demands, customer's efficient data mining techniques are required. Nowadays, twitter is the one among the social networks which is dealing with millions of people posting millions of tweets. This paper exemplifies the data mining with machine learning techniques such as TF-TDF and clustering algorithms such as hierarchical clustering, *k*-means clustering, *k*-medoid clustering, and consensus clustering along with their efficiencies.

Keywords

Twitter data **Machine learning technique**

Consensus clustering **Big data**

Social media **TF-IDF** ***K*-medoid clustering**

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In modern life, people are more concerned about their health and thus are more interested in managing a healthy lifestyle through the information provided by wearable health trackers [1]. Health assessment of a person can be carried out through the combination of mobile handset and wearable health trackers.

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Needed to guide people by analyzing the collected dataset to better manage their health. The data is acquired through the biosensors like heart rate sensor, sleep monitoring sensors, movement recognition sensors and other sensors which are integrated within the wearable health trackers [2].

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Pre-processing of user behaviour for e-commerce

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In today's highly used internet considering approximately 205 million online shoppers each day, entrepreneurs are falling into online business. Hence to draw attention to a e-commerce store, Online Advertising is one of the best ways to reach new leads. Recommendation system have attracted nowadays in the field of web application systems and online information retrieval. These systems are applied in various domains such as movies, news, and online e-commerce. For better online e-commerce, personal recommendation is very important. In this paper, we focus on pre-processing of the user behaviour towards products which is the first step for designing a good personal recommendation system. The proposed work which consists of 4 steps: Data Collection, pre-processing, statistical analysis of the user's behaviour to predict user's interest based on their order history and Summarization.

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1. Introduction

In the highly used internet, recommendation system have attracted nowadays in the field of web application systems and online information retrieval. These systems are applied in various domains such as movies, news, online e-commerce to provide benefits to users and providers. For better online e-commerce, such as amazon. com etc., personal recommendation system is very important. [6] Buying behavior prediction is one of the

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important issues for the marketing of e-commerce companies. The main aim is to give statistical analysis of the user's behaviour to predict user's interest based on their order history. For the design of good recommendation system, user behaviour analysis is a vital role.

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