Army Institute of Technology
Publications (3.3.2)

Summary Sheet 2016-17

Total Number of papers						TOTAL
SCI/SCIE	ES CI	SCOPUS	WOS	UGC	OTHERS	
03	--	03			05	11

International Journal of Advance Engineering and Research Development

Volume 4, Issue 3, March -2017

A Facebook Profile Based TV Shows and Movies Recommendation System

Prof S.R Dhore[1], Abhishek Shukla[2], Anil Kumar Pal[3], Manish Kumar[4]

[1,2,3,4] Department of Computer Engineering, Army Institute of Technology, Pune, India

Abstract — *Implemented and evaluated different algorithms in the context of developing a recommendation system based on data gathered from Facebook user profiles. In particular, we are looking at a Collaborative Filtering algorithms, a Content Filtering approach, and Naive Bayes, and comparing their performance in terms of standard measures. The algorithms draw from principles and techniques in Machine Learning, Information Retrieval, as well as Graph Theory. The Facebook graph API was used to scrape friend's Facebook profile data. This results in a dataset of Facebook user profiles in XML format, listing different attributes for a particular user. The 'liked' TV show and movies sections act as the labels for our training and test data , and the rest of the sections are used as the supporting attributes.*

Keywords- Recommendation System, Collaborative Filtering, Content Filtering, Naive Bayes, Information Retrieval, Graph Theory.

I.   INTRODUCTION

The traditional TV industry is facing threats and challenges due to the development of the mobile internet. This has happened due to the evolution of Big Data which is changing the traditional industry. For traditional TV shows, audience rating is the metrics whether the show is good or not. Therefore, how to improve the audience rating is an urgent issue for traditional TV shows and movies. This paper proposes a TV shows and movies recommendation system. This system is based on the machine learning algorithms which can automatically recommend TV shows and movies to the audience in accordance to their interest.

Recommendation systems are the one which empower users to use their enormous amount of data and make some informed choices in the future. This field of recommender system has gone through a lot of innovation and research. In the same spirit, this project focuses on building a recommendation system based on the data collected from Facebook profiles of several users.

1.1 Goals and Objectives
The main aim of this project is to predict on what genre of TV shows or movies a user is likely to be interested whichwill be based on their raw Facebook data and then recommending a set of related items to the user.

The objectives of the project are as follows:
1. Gathering of data from various Facebook profiles using Graph API v2.8.
2. Pre-processing the raw data using different filtering techniques.
3. Data Analysis using different Machine learning Algorithms. Building a recommendation system for TV shows based on data collected from Facebook profiles of several users.
4. Performance measurement and comparison of different algorithms.

II.   DATA SET FOR THE SYSTEM

Data Set for the proposed system was captured using the Facebook Graph API. The Graph API is the primary way to get data out of, and put data into Facebook's platform. It's a low-level HTTP-based API that you can use to programmatically query data, post new stories, manage ads, upload photos, and perform a variety of other tasks. The Graph API is HTTP-based, so it works with any language that has an HTTP library, such as cURL and urllib.

As the newer Graph API v2.8 has a limited user profile information access policy. So, a user is only allowed to access his/her friend's user profile data. By using a python script we obtained data of our friends' profile. Most of these profiles had very less or no information. So, we discarded the profiles of people who listed less than two "likes". In the end, we had almost 900 user profiles to work with. Out of this we randomly selected 20% to be the test users.

III.   PREPROCESSING OF DATA

As an initial step, various filtering techniques were applied on the acquired data i.e. the Facebook user profiles as well as the metadata on TV shows and movies. The preprocessing step is important to be able to treat the entire data uniformly. Following are the filtering techniques that have been applied on the data:

636

International Journal of Advance Engineering and Research Development

An Intelligent Recommender System for Cloud Usage Data Using Predictive Analysis

Prof.M.B.Lonare[1], Amit Kumar[2], Krishna Chaitanya[3], Shivam Kumar Rathee[4], Yuvraj Singh[5]

[1,2,3,4, 5]Department of Computer Engineering, Army Institute of Technology, Pune, India

Abstrac*t —Cloud computing allows tenants to rent resources in a pay as-you-go fashion. It offers the potential for a more cost effective solution than in-house computing by obviating the need for tenants to maintain complex computing infrastructures themselves. To achieve this benefit, the right amounts of computing resources need to be given to the applications running in the cloud. The amount of resources needed is rarely static, varying as a result of changes in overall workload, the workload mix, and internal application phases and changes. To avoid problems, the amount of resources allocated to applications should be adjusted dynamically, which brings two main challenges: (1) deciding how much resource to allocate is non-trivial since application resource needs often change with time and characterizing runtime application behaviour is difficult; (2) application resource needs must be predicted in advance so that the management system can adjust resource allocations ahead of the needs. Furthermore, resource-management systems should not require prior knowledge about applications, historical data such as application behaviour profiles, and running the resource management system itself (including its prediction algorithms) should not be costly.*

Keywords-- *Cloud Computing, OpenStack, Data Analysis, DevStack, Linear Regression, Nova, Cinder*

I. INTRODUCTION

Cloud computing enables provisioning the user with a utility of cloud which might be a platform, software or an infrastructure as whole. Varying infrastructural and service tools may significantly impact the performance of the cloud, its overall usage and in turn, the cost an industry is expending out to purchase that cloud. Monitoring such changes is essential for the analysis of the relationship between the usage of the cloud and its users. Monitoring infrastructural resources is essential for the building up of frameworks that enables Service Level Agreements based on applications QoS requirements. Unless performance guarantees at the level of hardware resources like CPU, Memory and I/O Devices are not given, it becomes mandatory to have necessary monitors in place for the infrastructural resources . Both Cloud provider and clients are the beneficiaries of resource monitoring. Cloud providers have to monitor the current status of allocated resources in order to handle future requests from their users efficiently and to keep an eye on malicious users by identifying anomalous behaviour. The analysis of this data would help the client to buy the cloud with the optimised value of data required for the operations and cost cutting operation would be successfully implemented.

The advent of cloud computing in the 20th century, initially lead to a small scale of transfer and sharing data between various users. Soon as the time passed by, storage and security of the cloud became the most important aspects to be taken care of and many industries started using clouds for their information storage. The concept of storing data in a remote location was new to the world, and this technology was supported by construction of huge data centres underground or in buildings, supported with high transfer rates of data using fibre optics. The industries today, use data centres which constitute of millions of hard disks storage and store trillion bytes of data. On a local level, whenever a person purchases a cloud worth a particular cost, the usage is limited to his or her needs. Sometimes the user requires fewer amounts for storage and sometimes more. The irregular use of data leads to the excess purchasing of the cloud which directly suggests that a user might be purchasing a higher amount but is using it less.

II. PROBLEM DESCRIPTION

In a Cloud, hosted applications such as a multi-tier websites may run on group of VMs that span multiple physical hosts. These VMs form a resource pool. Due to initial placement and load balancing, the actual deployment of these VMs can show an arbitrary topology on physical nodes .As the number of VMs increase, the cloud infrastructure is divided into sub clusters, each of which is responsible for resource allocation of one application. In this dissertation, we aim to design, implement and evaluate a resource management mechanism that indicates the user usage of the cloud over the period of time using metrics provided by OpenStack and Ubuntu and using data analysis provide the user an optimal solution.

The goal of this project is to create an intelligent resource management scheme in a cloud platform. Uses the combined cloud utilization data, we want to create a usage model for a recommender system. Using this recommender system, the relevant modification is carried on the specific instance. A resource utilization report is presented to the user along with the model recommendations. The analysis step then uses a machine learning algorithms to make an Online Prediction Model. Using the prediction model, the needs of the particular instance are extrapolated and the necessary modifications are made for the resource allocation. Make a front-end for the user to manage his resource requirements based on the recommendations by the usage records.

19

International Journal of Advance Engineering and Research Development

DPDK-Based Implementation Of Application : File Downloader

Prof. Anup Kadam[1],Vinay Singh[2], Rituraj Singh[3], Virendra Singh Rawat [4], Sandeep Kumar Singh[5]

[1,2,3,4, 5]Department of Computer Engineering, Army Institute of Technology, Pune, India

Abstract — *Implemented a file downloader using the DPDK network interface for rump kernel. The combined result is a userspace TCP/IP stack doing packet I/O via DPDK. DPDK is a framework used to provide a simple, complete framework for fast processing of packets in data plane development applications and the framework creates a set of libraries for specific environments. The DPDK implements a model known as run to compilation for processing of packets, where all resources must be allocated before processing pakects by calling Data Plane applications, running on logical cores as execution unit.DPDK also uses a pipeline model which passes packets or messages between different cores via the rings.*

Keywords-- *Qemu/KVM,DPDK(Data Plane Development Kit),Rump Kernel,Open v-Switch,TCP/IP Stack*

I. INTRODUCTION

DPDK is used to provide complete framework for fast processing of packets in data plane applications[1]. DPDK framework creates an Environment Abstraction Layer (EAL) with the help of set of different libraries for specific environments, which is mainly be specific to a mode of the Intel architecture, Linux user space or a specific platform [1]. Make files and configuration files are used to creating and building these environments. To create applications using DPDK,once the EAL library is created, user links his application with the EAL library [1].

The DPDK implements a model known as run to completion model for processing of packets [1]. DPDK also uses a pipeline model which passes packets or messages between cores via the rings. This allows different types of work to be performed in stages via pipeline and may allow more efficient use of code on cores. Interrupts are not used in this model because of the performance overhead imposed due to interrupt processing.

For DPDK enabled application a DPDK network interface for rump kernel is created and the combined result is a user space TCP/IP stack doing packet I/O via DPDK.A rump kernel employs a mechanism for taking an monolithic operating system kernel(existing), leaving everything out except drivers, and those drivers are used as a library components.

II. GOALS AND OBJECTIVE

The main goal of this project is to improve the performance of network application by fast packet processing using Data Plane Development Kit and better utilization of resources.At the end we will analyse and compare the Performance of Network Application working on traditional environment and a DPDK enabled environment.
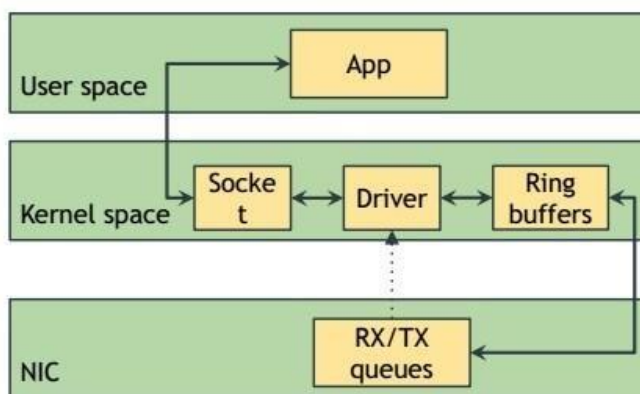

Figure 1. Packet Processing in Linux

International Journal of Advance Engineering and Research Development

Volume 4, Issue 3, May-2017

Detection of Malarial Parasite in Blood Using Image Processing

Prof. P. R Sonawane [1], Priya Bharti [2], Pinki Kumari[3], Anamika Sharma[4], Nutan Kuchhadia[5]

[1,2,3,4,5] *Department of Computer Engineering, Army Institute of Technology, Pune, India*

Abstract —*Malaria is an infectious disease of humans and other animals. It is caused by parasites (a microorganism) of Plasmodium genus. Infection is initiated by a bite from an infected female mosquito, which introduces the parasites via its saliva into the circulatory system, and ultimately to the liver where they mature and reproduce. Plasmodium species are classified into sub-genera based on their morphology, location, and host specificity. On the basis of parasites shape and structure these are identified in blood samples. This project removes the human error while detecting the presence of malaria parasites in the blood sample by using image processing and automation. We built the malaria detection system in a robust manner so that it is unaffected by the exceptional conditions and achieved high percentages of sensitivity, specificity, positive prediction and negative prediction values.*

Keywords- Grayscale Image, RBCs Extraction , Parasitemia, Edge detection technique.

I.   INTRODUCTION

Malaria is a life-threatening parasitic disease, caused by the protozoan parasites of the Plasmodium genus. It is transmitted through the bite of a infected female Anopheles mosquito. Once the parasites are introduced inside the humanbody, they undergo a complex life cycle in which it grows and reproduces. In this process, the red blood cells (RBCs) areused as hosts and are destroyed afterwards. Hence, the ratio of RBCs infected cells to the total number of red blood cells called parasitemia is important in determinant in selecting the appropriate treatment and drug dose. Present diagnosis of malaria infection is done by searching for parasites in blood slides (films) through a microscope manually which introduces human errors and results in low accuracy and sensitivity for the malaria detection.

WHO reported that there were 304 million new cases of malaria worldwide. The WHO accounted African Region for most global cases of malaria (90%), followed by the South-East Asia Region (7%) and the Eastern Mediterranean Region(2%). Last year, approximately 429 000 malaria deaths (range 235 -639) worldwide. Most of these deaths occurred in the African Region (92%), followed by the South-East Asia Region (6%) and the Eastern Mediterranean Region (2%). Malaria killed an estimated 303 000 under-fives globally, including 292 000 in the African Region. Malaria claims the life of 1 child every 2 minutes and remains a major killer of under-fives.

II.   RELATED WORK

”World Health Organization what is malaria?” Illustrate a technique for identifying the malaria for blood cell images. This paper involves the counting of Blood cell using an adaptive OTSU thresholding technique which use to segment the image and separate the RBC and WBC for Counting? The paper also considers the area of cells to declare severity. The paper uses SVM as Classifier for Paper ID: SUB156521 declaring the result of whether the patient is affected by Malaria or Not. The proposed automated method of segmentation and classification of cell is simple. An approach is proposed to detect red blood cells with consecutive classification into parasite infected and normal cells for estimation of parasitemia. The extraction of red blood cells achieves a reliable performance and the actual classification of infected cells. Sensitivity of system is 93.12%, and Specificity is 93.17%. Shape based and statistical features are generated for classification. The features are selected for recognition of two classes only. This approach leads to the high specialization of each classifier and results in an overall increase in accuracy.

In ”Analysis of Detecting the Malaria Parasite Infected Blood Images Using Statistical Based Approach ” introduces a blood image processing for detecting and classifying malarial parasites in images of Giemsa stained blood slides, in order to evaluate the parasitemia of the blood. To detect the red blood cells that are infected by malarial parasites, statistical based approach is used. To separate automatically the parasites (trophozoites, schizonts and gametocytes) from the rest of an infected blood image, color, shape and size information are used and later the image is compared with infected images after transformation of image by scaling, shaping to reconstruct the image. The images returned are statistically analysed

1

Indonesian Journal of Electrical Engineering and Computer Science

HOME ABOUT LOGIN REGISTER SEARCH CURRENT ARCHIVES ANNOUNCEMENTS

Prioritized Sweeping Reinforcement Learning Based Routing for MANETs

Rahul M Desai, B P Patil

Abstract

In this paper, prioritized sweeping confidence based dual reinforcement learning based adaptive network routing is investigated. Shortest Path routing is always not suitable for any wireless mobile network as in high traffic conditions, shortest path will always select the shortest path which is in terms of number of hops, between source and destination thus generating more congestion. In prioritized sweeping reinforcement learning method, optimization is carried out over confidence based dual reinforcement routing on mobile ad hoc network and path is selected based on the actual traffic present on the network at real time. Thus they guarantee the least delivery time to reach the packets to the destination. Analysis is done on 50 Nodes Mobile ad hoc networks with random mobility. Various performance parameters such as Interval and number of nodes are used for judging the network. Packet delivery ratio, dropping ratio and delay shows optimum results using the prioritized sweeping reinforcement learning method.

Full Text:

PDF

USER

Username

Password

☐ Remember me

Login

CITATION ANALYSIS

- Dimensions
- Google Scholar
- Microsoft Academic
- Scimagojr
- Scinapse
- Scopus

QUICK LINKS

- Author Guideline
- Editorial Boards
- **Online Paper Submission**
- Publication Fee
- Abstracting and Indexing
- Publication Ethics
- Visitor Statistics
- Contact Us

ScienceDirect

Journals & Books   Register   Sign in

View PDF   Access through Army Institute of Technol...   Purchase PDF   Search ScienceDirect

Article preview

Abstract

Introduction

Section snippets

References (39)

Cited by (6)

Recommended articles (6)

Evaluation of alumina incorporated combined ceramic layer thermal barrier coating

Pritee Purohit, S.T. Vagge

Show more ∨

+ Add to Mendeley   ⟨ Share   99 Cite

Get rights and content

Abstract

In present work the coatings having lanthanum-titanium-aluminium oxide that is $LaTi_2Al_9O_{19}$ (LTA) in combination with yttria stabilized zirconia (YSZ) and alumina (Al_2O_3), were developed using plasma spray method. Thus the top coat comprises of $LTA/YSZ/Al_2O_3$ ceramic top layer. The coatings were tested for type I hot corrosion in presence of Na_2SO_4 and NaCl salts in 3:1 mass proportion at 900 °C for 100 h. LTA 150 (having LTA top coat of thickness 150 μm) as-sprayed and annealed samples have shown excellent hot corrosion resistance upto 100 h. XRD patterns indicate that the LTA and Al_2O_3 phases were retained even after 100 h of isothermal hot corrosion with slight decrease in their peak intensity. Hot corrosion of alumina incorporated LTA coating resulted in the formation of $LaAlO_3$, $Na_2Al_2O_4$, $NaAlO_2$

ScienceDirect

Journals & Books   Q ⑦   Register   Sign in

🔤 View PDF   🏛 Access through **Army Institute of Technol...**   Purchase PDF   Search ScienceDirect 🔍

Outline

Show full outline ∨

Cited By (3)

Figures (14)

Experimental Thermal and Fluid Science

Volume 83, May 2017, Pages 37-46

ELSEVIER

Experimental investigation of heat transfer enhancement factors in the oscillating flow heat exchanger using Kurzweg's and Nishio's correlations

Jintendra D. Patil [a] ✉, B.S. Gawali [b] ✉

Show more ∨

+ Add to Mendeley   ⤸ Share   🔗 Cite

Highlights

- Experimental study of the Oscillating Flow Heat Exchanger (OFHE) is carried out.

- Performance of the OFHE is strongly influenced by f, S, $\sigma \chi$ and L_o/S.

- An empirical correlation is proposed for experimental effective thermal diffusivity.

Recommended articles

Experimental and simulation studies on the per...
International Journal of Refrigeration, Volume 36, Issu...
🔤 Purchase PDF   View details ∨

A study of the flow structures generated by oscil...
Chemical Engineering Science, Volume 171, 2017, pp. ...
🔤 Purchase PDF   View details ∨

Exergy analysis of a shell-and-tube heat exchan...
Experimental Thermal and Fluid Science, Volume 83, 2...
🔤 Purchase PDF   View details ∨

1 2 Next >

Article Metrics

Citations

Citation Indexes: 3

Captures

Readers: 17

⦿PLUMX   View details >

FEEDBACK 💬

Taylor & Francis Online

Log in | Register | Cart

Home ▶ All Journals ▶ Experimental Heat Transfer ▶ List of Issues ▶ Volume 30, Issue 4 ▶ Experimental study of heat transfer char ....

Experimental Heat Transfer ›
A Journal of Thermal Energy Generation, Transport, Storage, and Conversion
Volume 30, 2017 - Issue 4

Enter keywords, authors, DOI, ORCID etc | This Journal

Advanced search

Submit an article   Journal homepage

274 Views
3 CrossRef citations to date
0 Altmetric

Articles

Experimental study of heat transfer characteristics in oscillating fluid flow in tube

Jitendra D. Patil ✉ & B. S. Gawali

Pages 328-340 | Received 26 Oct 2016, Accepted 01 Nov 2016, Accepted author version posted online: 10 Nov 2016, Published online: 15 Feb 2017

❝ Download citation   ▶ https://doi.org/10.1080/08916152.2016.1258018   Check for updates

📄 Full Article   🖼 Figures & data   📑 References   ➕ Supplemental   ❝ Citations   📊 Metrics   🖨 Reprints & Permissions   Get access

ABSTRACT

Transform Based Techniques for ECG Signal Compression, Mrs. Surekha KS, Dr .B P Patil

Transform Based Techniques for ECG Signal Compression

Article *in* International Journal of Applied Engineering Research · January 2016

Using Open CV over MATLAB for Implementing Image Processing Application on CUDA GPU to achieve better execution speedup.

Using OPENCV over MATLAB for Implementing Image Processing Application on CUDA GPU to Achieve Better Execution Speedup

Shraddha Oza[1],
E&Tc Department,
Army Institute of Technology,
Pune, India

Dr. (Mrs.) K. R. Joshi[2]
E & Tc Department,
PES Modern College of Engineering,
Pune, India

Abstract – Digital Image Processing is significant for correct interpretation, analysis and enhancement of digital images. It has varied applications in the domain of computer vision, medical imaging, astronomical imaging, photography. Matlab and OpenCV are the two most popularly used toolkits for building the image processing applications. The purpose of the work presented here is to compare and analyse performance of these two platforms in the context of execution speed. A color (RGB color space) to gray converter was implemented using Matlab as well as OpenCV with CPU at the backend executing the code sequentially. The conversion speed was found to be much higher in case of OpenCV. The same converter was implemented using CUDA GPU, which gave higher speed up over its CPU version due to its extensively parallel architecture. The work highlights use of OpenCv library to be used alongside CUDA C for pre and post image processing functions executed by CPU, to achieve maximum speed up. In future, different optimization techniques for CUDA may be used to enhance the speed up.

Keywords : Matlab, OpenCV, CUDA, Color to gray converter

INTRODUCTION

Digital image processing has a wide range of applications

Considering the performance efficiency of Graphics processor for data parallel computations [5][6][10], in the proposed work, the color to gray converter was implemented also using CUDA C with GPU at backend. The speed up achieved was much higher as compared to CPU OpenCV version.

The work is presented in seven sections. The first three sections explain the basis for Matlab, OpenCV platforms and their comparison. Section IV briefly describes CUDA architecture. Section V gives details of the mathematical model used to implement color to gray converter. Section VI describes the experimental set up and section VII elaborately discusses the observations and conclusions drawn.

I.   MATLAB
MATLAB stands for MATrixLABoratory and the software is built around vectors and matrices. It has
tool boxes which can be used for developing signal processing and image processing applications.

Matlab is an interpreted language. The Matlab code is

Get Access

Search ScienceDirect

Outline

Swelling behavior of cross-linked dextran hydrogels and preliminary Gliclazide release behavior

Dr. S.K. Bajpai [a] [✉], Navin Chand [b], Seema Tiwari [c], Shweta Soni [a]

Show more ∨

+ Add to Mendeley   ⊄ Share   ⟩⟩ Cite

Recommended articles

1   2

FEEDBACK