

A PROJECT REPORT On

"Smart Integrated Campus Using IOT" Submitted in the partial fulfillment of the requirement for the award of Degree of

BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND ENGINEERING

By

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Under the guidance of Mrs Apoorva D Asst. Prof.,Dept. of CSE.



2017-2018

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING DR.T.THIMMAIAH INSTITUTE OF TECHNOLOGY, Oorgaum, Kolar Gold Fields-563 120



OORGAUM, K.G.F. - 563 120 (KARNATAKA)

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This is to certify that the Project work entitled

"Smart Integrated Campus Using IOT"

Is bonafied work carried out by

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In partial fulfillment for the award of degree of **BACHELOR OF ENGINEERING** in Computer Science and Engineering of **VISVESWARAYA TECHNOLOGICAL**

UNIVERSITY, Belgaum during the year 2017-2018.It is certified that all corrections suggestions indicated for internal assessment has been incorporated in the report kept in the department library. The project report has been approved as it satisfies the academic

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Abstract

This paper describes the development of smart campus using Internet of Things (IoT) technology. Through smart campus, it is possible that a campus is connected via online by the outside entity, so that the teaching approach based on technology can be conducted and monitored in real time.

This research was conducted in smart campus using all the technology based on education, parking, classroom, library and campus management. Observation and literature studies were applied as the research method with the related them for the of system design of smart campus. The result of this research is the design of smart campus system that includes smart education development, smart parking, smart classroom with monitoring attendance, smart library management and management of the campus entities which includes (garden management, bus tracking for women safety, efficient power management) within a campus of Universities, and a part of this project can also be implement in companies as well as in hospitals.

To build a smart campus, it needs to build the digital infrastructure inside campus that can give services so that it will be beneficial for surrounding citizens. IoT which bases on the internet, uses a variety of information sensing identification device and information processing equipment, such as RFID, GPS, GIS, JIT, EDI and other devices to combine with the internet to form an extensive network in order to achieve information and intelligence for entity [3]. is the design of smart campus system that includes smart education development, smart parking, smart classroom with monitoring attendance, smart library and management of the campus which includes (garden management, bus tracking for women safety, efficient power management)that are located in Universities PGRI Yogyakarta (UPY).



A PROJECT REPORT On

"SMART LIBRARY FOR COLLEGE APPLICATION"

Submitted in the partial fulfillment of the requirement for the award of Degree of

BACHELOR OF ENGINEERING In COMPUTER SCIENCE AND ENGINEERING By

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A PROJECT REPORT On

"Smart Library For College Application"

Submitted in the partial fulfillment of the requirement for the award of Degree of

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This project is developed to ease the work of students. This project involves an application which connects everyone in the same platform with an unique identity that is assigned to the data owner & student. This application can be used as and when required by the student. The work deals with the appropriate string search in large spatial database.

In our scheme we are connecting the user and books owner within our application to where the owner can upload the book details along with subject, author, publication, price and other details where user can access the uploaded data from the owner.

In this application, user are having authentication and security to access the details which is presented in the system. Before accessing, searching or uploading books both user and owner should register first to have their individual account. They will be provided with unique user ID and a password. This is very helpful for exact result from non-exact keyword.



A PROJECT REPORT On

"A HYBRID AND OPTIMIZED RESOURCE SCHEDULING TECHNIQUE USING MAPREDUCE FOR LARGER INSTRUCTION SETS"

Submitted in the partial fulfillment of the requirement for the award of Degree of

BACHELOR OF ENGINEERING In COMPUTER SCIENCE AND ENGINEERING By

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| 1GV14CS02 | 5 |
| 1GV14CS03 | 9 |

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Map reduce has become more popular in data intensive computing. In spite of efforts for designing resource efficient map reduce the existing solution focus on scheduling the jobs at task level which provide sub optimal performance. This is because the jobs use varying resource during their life time which is difficult for task scheduler to effectively utilize the given resource to reduce his execution time. We optimize the resources because the resources are highly varying which is difficult for the task level schedulers. To overcome this limitation of map reduce we use a scheduler called PRISM-the fine grained resource aware map reduce scheduler.

In order to make effective use of the available resources to reduce the execution time of the job. PRISM is detailed resource aware map reduce scheduler, which divides the tasks into phases i.e., cycles. Where each phases has constant resources and performs the scheduling at the phase level. The importance of the phase level scheduler is that it shows the resource usage variability with a particular time of a task. As a result the phase level scheduling algorithm will improve the execution parallelism and resource utilizations such that it ensures the data's are not being lost. Hadoop is an open source framework which is written in java. In case of 7-node hadoop cluster running on standard measurement (benchmarks) prism offers high resource utilization and provides a much more improvement in job running time compared to hadoop schedulers.

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A PROJECT REPORT On

"PRIVACY PROTECTION AND INTRUSION AVOIDANCE FOR CLOUDLET-BASED MEDICAL DATA SHARING"

Submitted in partial fulfillment of the requirements for the Award of the Degree of

BACHELOR OF ENGINEERING In COMPUTER SCIENCE & ENGINEERING By

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Is a bonafide work carried out by

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In partial fulfillment for the award of degree of BACHELOR OF ENGINEERING in COMPUTER SCIENCE AND ENGINEERING of VISVESVARAYA TECHNOLOGICAL UNIVERSITY, Belgaum during the year 2017-18. It is certified that all corrections/suggestions indicated for internal assessment has been incorporated in the report kept in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

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With the advancement of wearable medical devices remote health monitoring and elderly health care has become a popular application. The data collected from patient through wearable devices (like heartbeat, blood pressure etc) has to be passed to application running in cloud to implement various services like expert advice, emergency assistance etc.

The data of patients when stored in cloud can be attacked by intruders and can be stolen or corrupted. Existing solution are based on encrypting the data and storing in cloud. By these solutions can be attacked and encryption keys can be broken and all data can be still stolen. In this project we propose a cloud let based solution for providing enhanced security to patient health care data.

The trust model also helps similar patients to communicate with each other about their diseases. we divide users' medical data stored in remote cloud of hospital and give them proper protection. Finally, in order to protect the healthcare system from malicious attacks, we develop a novel collaborative intrusion detection system (IDS) method based on cloudlet mesh, which can effectively prevent the remote healthcare big data cloud from attacks. Our experiments demonstrate the effectiveness of the proposed scheme.



A PROJECT REPORT On

"Customer-Satisfaction-Aware Optimal Multiserver Configuration for Profit Maximization in Cloud Computing"

Submitted in the partial fulfillment of the requirement for the award of Degree of BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND ENGINEERING

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This is to certify that the Project work entitled "Customer-Satisfaction-Aware Optimal Multiserver Configuration for Profit Maximization in Cloud Computing"

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Along with the development of cloud computing, an increasing number of enterprises start to adopt cloud service, which promotes the emergence of many cloud service providers. For cloud service providers, how to configure their cloud service platforms to obtain the maximum profit becomes increasingly the focus that they pay attention to.

We take customer satisfaction into consideration to address this problem. Customer satisfaction affects the profit of cloud service providers in two ways. On one hand, the cloud configuration affects the quality of service which is an important factor affecting customer satisfaction. On the other hand, the customer satisfaction affects the request arrival rate of a cloud service provider.

However, few existing works take customer satisfaction into consideration in solving profit maximization problem, or the existing works considering customer satisfaction do not give a proper formalized definition for it. Hence, we firstly refer to the definition of customer satisfaction in economics and develop a formula for measuring customer satisfaction in cloud computing. And then, an analysis is given in detail on how the customer satisfaction affects the profit.

Lastly, taking into consideration customer satisfaction, service-level agreement, renting price, energy consumption and so forth, a profit maximization problem is formulated and solved to get the optimal configuration such that the profit is maximized.

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A PROJECT REPORT On

"Design Of An IoT Based Autonomous Vehicle With The Aid Of Computer Vision"

Submitted in the partial fulfilment of the requirement for the award of Degree of

BACHELOR OF ENGINEERING In COMPUTER SCIENCE AND ENGINEERING

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"Design Of An IOT Based Autonomous Vehicle with The Aid Of Computer Vision"

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A Web controlled and partially autonomous vehicle system is presented in this paper. It highlights the idea to develop a remote controlled car which can be driven from anywhere using the Internet over a secured server.

This car will also have limited automation features like obstacle avoidance system and lane detection system so that it can drive itself safely in case of connectivity failure. The main goal here is to minimize the risk of human life and ensure highest safety during driving.

At the same time the car will assure comfort and convenience to the controller. A miniature car including the above features has been developed which showed optimum performance in a simulated environment. The system mainly consists of a Raspberry Pi, a Pi camera, IR sensor, ultrasonic sensor and L293D IC. The Raspberry Pi was mainly used in the Computer Vision algorithms and for streaming video through the Internet. The proposed system is very cheap and very efficient in terms of automation.

Automated car is one of the latest trends which has been massively recognized by people all around the world as they want maximum security and comfort during driving. Nowadays, road accident is one of the prime concerns for the people.

It became very frequent and uncertain. Most of the road accidents occur due to lack of abidance of the traffic rules. Most of the time, the drivers become drowsy or distracted during driving and eventually hit objects ahead of them. If the driving process can be handled with the aid of Computer Vision and efficient sensors then the risk of human mistakes can be highly reduced.



A PROJECT REPORT On

"Discovery of Ranking Fraud for Mobile Apps"

Submitted in the partial fulfillment of the requirement for the award of Degree of

BACHELOR OF ENGINEERING In COMPUTER SCIENCE AND ENGINEERING By

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Ranking fraud in the mobile App market refers to fraudulent or deceptive activities which have a purpose of bumping up the Apps in the popularity list. Indeed, it becomes more and more frequent for App developers to use shady means, such as inflating their Apps' sales or posting phony App ratings, to commit ranking fraud.

While the importance of preventing ranking fraud has been widely recognized, there is limited understanding and research in this area. To this end, this project provides a holistic view of ranking fraud and proposes a ranking fraud detection system for mobile Apps. Specifically, it first proposes to accurately locate the ranking fraud by mining the active periods, namely leading sessions, of mobile Apps.

Furthermore, on investigating three types of evidences, i.e., ranking based evidences, rating based evidences and review based evidences, by modeling Apps' ranking, rating and review behaviors through statistical hypotheses tests. In addition, it also proposes an optimization based aggregation method to integrate all the evidences for fraud detection. Finally, it evaluates the proposed system with real-world App data collected from the IOS App Store for a long time period. In the experiments, it validates the effectiveness of the proposed system, and show the scalability of the detection algorithm as well as some regularity of ranking fraud activities.



A PROJECT REPORT On

"Advanced Smart Attendance Monitoring

System"

Submitted in the partial fulfillment of the requirement for the award of Degree of

BACHELOR OF ENGINEERING In COMPUTER SCIENCE AND ENGINEERING

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This article presents an approach and module by which an attendance system out by developed. Here in this system, we going to develop Brometric finger prior inclusionogy infers students as well as staff can punch there finger in brometrics (inst who, punction will be recorded as present and one who is not will be considered as alments

All the records can be displayed in 1.(1) panel as well as renorde our fix down? if the cloud using Internet of things (IOE) concept. This is very useful when higher authorities intends to check the records of particular batch or individuals attendance seconds. In these technologies, fingerprint becomes the most mature and popular biometrics technology used in automatic personal identification. The reason for the popularity of fingerprint verification is that fingerprints satisfy uniqueness, stability permanency and easily taking

In this paper, an attempt was made to look at the prevalence in the high level of imperionation experienced on a daily basis in both private and public sectors, the ghost worker syndrome which has become a menace across all tiers of government, employers concerns over the levels of absence in their workforce and difficulty in managing student attendance during lecture periods. Sequel to this, a fingerprint-based Attendance Management System was developed to provide a faster, more secure, and more convenient method of user verification than passwords and tokens can provide for a reliable personal identification.



A PROJECT REPORT On

"DESIGNING A MULTI-HOP ENERGY EFFICIENT CLUSTERING ALGORITHM USING TYPE-2 FUZZY LOGIC IN WSN"

Submitted in the partial fulfillment of the requirement for the award of Degree of

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"DESIGNING A MULTI-HOP ENERGY EFFICIENT CLUSTERING ALGORITHM USING TYPE-2 FUZZY LOGIC

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Lifetime enhancement has always been a crucial issue as most of the wireless sensor networks (WSNs) operate in unattended environment where human access and monitoring are practically infeasible. Clustering is one of the most powerful techniques that can arrange the system operation in associated manner to attend the network scalability, minimize energy consumption, and achieve prolonged network lifetime.

To conquer this issue, current researchers have triggered the proposition of many numerous clustering algorithms. However, most of the proposed algorithms overburden the cluster head (CH) during cluster formation. To overcome this problem, many researchers have come up with the idea of fuzzy logic (FL), which is applied in WSN for decision making.

These algorithms focus on the efficiency of CH, which could be adoptive, flexible, and intelligent enough to distribute the load among the sensor nodes that can enhance the network lifetime. But unfortunately, most of the algorithms use type-1 FL (T1FL) model. In this paper, we propose a clustering algorithm on the basis of intervaltype-2 FL model, expecting to handle uncertain level decision better than T1FL model.



A PROJECT REPORT On

"COLLEGE COMMUNICATOR MOBILE APP"

Submitted in the partial fulfillment of the requirement for the award of Degree of

BACHELOR OF ENGINEERING In COMPUTER SCIENCE AND ENGINEERING

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To.

The Principal/H.O.D Dr. T. Thimmaiah Institute of Technology, KGF-563120

Dear Sir/Madam.

This is to certify that Ms. Aishwarya R (USN:1GV14CS001) B.E(CSE) student of Dr. T. Thimmaiah Institute of Technology, KGF, has successfully completed internship in our company for on "College Communicator". The module has been integrated by team and the application is built on MVC architecture(CodeIgniter framework), Android studio, and MySql database.

We wish her for all success in her future. During the internship period she was dedicatedly working, she is a quick learner, sincere and hard working.

Guide Name: Mr. Ashish Kumar Role: Sr. Android Developer

With best regards.

Pankaj Kumar CEO & Founder Emporis Software Solutions LLP

 Address #303, 3rd Floor, Manjunath Complex, 1st Cross, Udayanagar Entrance, Adjacent TIN to Industrial Factory, Bangalore, Karnataka-560016

 Mobile No.: +91-98843-61685,

 Email: info@mporis.com

 Website: www.mporis.com

Date: 25-05-2018

SOFTWARE SOLUTIONS

ESS HR/admin/intern/25/05/2018/02

To. The Principal/H.O.D Dr. T. Thimmaiah Institute of Technology, KGF-563120

Dear Sir/Madam,

This is to certify that Ms. Kavya KG (USN: 1GV14CS018) B.E(CSE) student of Dr. T. Thimmaiah Institute of Technology, KGF, has successfully completed internship in our company for on "College Communicator". The module has been integrated by team and the application is built on MVC architecture(CodeIgniter framework), Android studio, and MySql database.

We wish her for all success in her future. During the internship period she was dedicatedly working, she is a quick learner, sincere and hard working.

Guide Name: Mr. Ashish Kumar Role: Sr. Android Developer

With best regards,

Pankaj Kumar CEO & Founder Emporis Software Solutions LLP

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Date:25-05-2018



ESS HR/admin/intern 25 05 2018 01

To, The Principal/H.O.D Dr. T. Thimmaiah Institute of Technology, KGF-563120

🖉 🔟 Dear Sir/Madam,

This is to certify that Mr. Vignesh KM (USN: 1GV13CS405) B.E(CSE) student of Dr. T. Thimmaiah Institute of Technology, KGF, has successfully completed internship in our company for on "College Communicator". The module has been integrated by team and the application is built on MVC architecture(CodeIgniter framework), Android studio, and MySql database.

We wish him for all success in his future. During the internship period he was dedicatedly working, he is a quick learner, sincere and hard working.

Guide Name: Mr. Ashish Kuma Role: Sr. Android Developer

With best regards,

Pankaj Kumar CEO & Founder Emporis Software Solutions LLP

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Mentoring relationship involves interaction between mentors to students and parents. Mentors are needed to offer advice and guidance in academic matter. In addition, the mentors become valuable support person for the student. Each set of students are assigned to a particular mentor. Mentors can guide/counselling their students by checking their attendance and performance of the students in internal assessment and other activities of the department through the mentoring system. The mentors must also serve as resource who will answer many questions, trivial or complex that the student might pose. Most important, the mentor must serve as positive role model. Parents can interact with the mentors through the mentoring system. Advice and support from mentors are among the most important factors in determining success of students. He or She can assist the protégé in finding university resources such as funding for report support.

Effective teacher-parent-student communication is fundamental to student success. Reporting Student Learning focuses on strategies and practices that teachers can use to establish effective ongoing communication with students and their parents, particularly with respect to attendance, marks and student situation in college. One aspect of communication among teachers, parents, and students is the information teachers provide on report cards. Personalized, clear, precise, and meaningful report card comments are essential for informing students and their parents about what students have learned their strengths as learners, and the next steps for improvement.



A PROJECT REPORT On

"MAPBLOGS - An Efficient Multimedia Transmitter"

Submitted in the partial fulfillment of the requirement for the award of Degree of

BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND ENGINEERING

By

PAVANI S PRATHIMA C REVATHY C V ROOPA G

1GV14CS036 1GV14CS037 1GV14CS046 1GV14CS048

Under the guidance of Mrs. LEELAVATHY S R Asst.Prof., Dept. of CSE.



2017-2018

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING DR.T.THIMMAIAH INSTITUTE OF TECHNOLOGY, Oorgaum, Kolar Gold Fields-563120



OORGAUM, K.G.F. – 563120 (KARNATAKA)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Technical Seminar work entitled

"MAPBLOGS - An Efficient Multimedia Transmitter" Is bonafied work carried out by

| PAVANI S | 1GV13CS036 |
|-------------|------------|
| PRATHIMA C | 1GV13CS037 |
| REVATHY C V | 1GV13CS046 |
| ROOPA G | 1GV13C8048 |

In partial fulfillment for the award of degree of BACHELOR OF ENGINEERING in Computer Science and Engineering of VISVESWARAYA TECHNOLOGICAL UNIVERSITY, Belgaum during the year 2017-2018. It is certified that all corrections suggestions indicated for internal assessment has been incorporated in the report kept in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said

degree.

Signature of Guide

(Mrs. Leelavathy S.R)

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Signature of Principal

(Dr. Syed Ariff) - PRIMCIPAL Dr. T. Thimmelah & culture of Technology Signature with Date

Signature of H.O.D (Mrs. Vinutha B.A) External Viva

Name of the Examiners

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Scanned with CamScanner

Mapblogs is an efficient method to deliver multimedia content from a sender to a group of receivers. Mapblogs is gaining popular applications such as real-time stock quotes, interactive games, video conference, live video broadcast, or video on demand. Authentication is one of the critical topics in securing Mapblogs in an environment attractive to malicious attacks. Mapblogs authentication may provide the security services like Data integrity, Data origin authentication, Non-repudiation, Live Blogging system.

Data integrity -Each receiver should be able to assure that received packets have not been modified during transmission. Data origin authentication - Each receiver should be able to assure that each received packet comes from the real sender. Non repudiation - The sender of the packet should not be able to deny sending the packet to receivers in case there is dispute between the sender and receivers.

All the above three services is supported by asymmetric key technique called signature. In this case the sender generates a signature for each packet with its private key which is called signing, and each receiver checks the validity of the signature with the sender's public key, which is called verifying. If the verification succeeds the receiver knows the packet is authenticated. Live Blogging system is used to communicate between clients using parallel computing where the queries of other clients can be requested and responded by group of clients within the network.



OORGAUM, K.G.F. – 563 120 (KARNATAKA)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the project work entitled

"MINIMIZING ELECTRICITY THEFT BY INTERNET OF THINGS"

Is bonafied work carried out by

PUNITH KUMAR U RAKESH KUMAR SANJAY KUMAR M SHERLY J

| 1GV | 14CS | 5043 |
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| 1GV | 14CS | 6045 |
| 1GV | 15CS | 5408 |
| 1GV | 13CS | 5055 |

In partial fulfillment for the award of degree of BACHELOR OF ENGINEERING in Computer Science and Engineering of VISVESWARAYA TECHNOLOGICAL UNIVERSITY, Belgaum during the year 2017-2018. It is certified that all corrections suggestions indicated for internal assessment has been incorporated in the report kept in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said

degree.

Signature of Guide (Mrs. A Mercy Flora)

13/6/18

Signature of H.O.D (Mrs. Vinutha B.A) External Viva

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Signature of Principal

Signature with Date

Name of the Examiners punathsingly.H

IOT use things to things connection to access the internet of things, allow data to store and access services. Services over internet of things development according to need of person to person and thing to person, machine to machine interaction without human interaction. As there is limited non-renewable resources are present in our daily life, Electricity is one of them which utilized in every country that results abundant losses due to electricity larceny.

Power theft is going to be the key challenges. A smart energy meter is used to minimize the electricity larceny. Basically energy meter is a device that calculates the cost of electricity consumed by homes, business, or an electrical device. It reduces the theft of electricity.

In this paper a government person can find the dishonest user by showing the status of energy meter at the back end of electricity office. To attain this, energy meter communicate with raspberry pi through GPIO pins. GPIO pins fetch the effective data from energy meter and it send effective data to the raspberry pi and connect raspberry pi with the internet. At the backend, government person can see the status of energy meter in the form of graphs.



A PROJECT REPORT On

"IMPLEMENATION OF MACHINE LEARNING ALGORITHM FOR PREDICTING USER BEHAVIOUR AND SMART ENERGY MANAGEMENT"

Submitted in the partial fulfillment of the requirement for the award of Degree of

BACHELOR OF ENGINEERING In COMPUTER SCIENCE AND ENGINEERING By

RONISHA BASKER SANGEETHA S SHILPA JP M SHRUTHI NIGADE 1GV14CS047 1GV14CS051 1GV14CS053 1GV14CS054

Under the guidance of MS. REVATHI.S Asst. Prof.,Dept. of CSE.



2017-2018

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OORGAUM, K.G.F. - 563 120 (KARNATAKA)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Project work entitled

"IMPLEMENATION OF MACHINE LEARNING ALGORITHM FOR PREDICTING USER BEHAVIOUR AND SMART ENERGY MANAGEMENT"

Is bonafied work carried out by

RONISHA BASKER SANGEETHA S SHILPA JP M SHRUTHI NIGADE 1GV14CS047 1GV14CS051 1GV14CS053 1GV14CS054

In partial fulfillment for the award of degree of BACHELOR OF ENGINEERING in Computer Science and Engineering of VISVESWARAYA TECHNOLOGICAL UNIVERSITY, Belgaum during the year 2017-2018. It is certified that all corrections suggestions indicated for internal assessment has been incorporated in the report kept in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

Signature of Guide

Name of the Examiners

G.A.

(Ms Revathi S)

Signature of H.O.D

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(Mrs. Vinutha B.A) External Viva

(Dr. Syed Ariff) PRINCIPAL

Signature of Principal

Or. T. Thimmalah Institute of Technology Signature with Date 63 120.

A greater interest arises in reducing our energy needs as electrical energy becomes more costly and the environmental effects of fossils become more deceptive. Objectives to find new ways of making our everyday lives more energy efficient have now became an essential part of the tussle to sustain our present quality of living. The existing system is smart metering which does not give any future prediction on unit consumption and failure occurrence. This project targets domestic usage which has a more direct approach in changing the way energy is consumed. House Hold Loads is taken as the application but can also be applied to large industrial loads.

Smart energy metering and normalized energy data on load usage are one of the major goal setters for the future smart grid and improved energy efficiency in smart homes. To obtain appliance-specific energy consumption statistics that can further be used to formulate load scheduling strategies for optimal energy utilization, disaggregation of Load is essential. Non-Intrusive Load Monitoring (NILM) is an alternative and best method for Load Disaggregation, as it can distinguish devices from the aggregated data measured at only a centralized location. An idea is taken up of using NILM technology by actually implementing sub-metering system for each load to forecast its futuristic development on the basis of Machine Learning Algorithm to consume energy efficiently.

The users load and failure data are collected and machine learning algorithm is applied to this data to get the future usage and failure. This information is displayed to the user via alerts. The user can also set a threshold, once threshold value is crossed the user gets an alert, this allows the user to manage their use of electricity and allows them to conserve energy.



A **PROJECT REPORT** On

"IOT Based Futuristic Trolley for Intelligent Billing with Amalgamation Of RFID And ARMLPC 2148"

Submitted in the partial fulfillment of the requirement for the award of Degree of

BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND ENGINEERING

By

SHRUTHI R SNEHA M SOWMYA L N SUNIL P V

1GV14CS055 1GV14CS056 1GV14CS059 1GV14CS061

Under the guidance of Mrs. CHITHRA G Asst. Prof., Dept. of CSE.



2017-2018

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OORGAUM, K.G.F. - 563 120 (KARNATAKA)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Project work entitled

"IOT Based Futuristic Trolley for Intelligent Billing with Amalgamation of RFID and ARMLPC 2148"

Is bonafied work carried out by

SHRUTHI R SNEHA M SOWMYA L N SUNIL P V

1GV14CS055 1GV14CS056 1GV14CS059 1GV14CS061

In partial fulfillment for the award of degree of BACHELOR OF ENGINEERING in Computer Science and Engineering of VISVESWARAYA TECHNOLOGICAL UNIVERSITY, Belgaum during the year 2017-2018. It is certified that all corrections suggestions indicated for internal assessment has been incorporated in the report kept in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

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Signature of Guide (Mrs. Chithra G)

Name of the Examiners iyunath Singh H

Signature of H O D

Head of the Department Dept dE Gemputeriegience T Thimmalah Institute of Technology Corgaum, K G F - 563 120

116/18

Signature of Principal

(Dr Syed Ariff) PRINCIPAL Dr. T. Thimmalah Institute of Technology Signature wi

The rapid growth of shopping malls and retail sectors every year, there is a need to improve the people flow in malls and advance the billing pattern steeply. Product procurement represents a complex process. Each time Customer requires a item of his interest, he has to pull the trolley or bag from rack to rack for collecting the items and simultaneously the expense computation has to be estimated. At the billing counter, each product with the barcode is fed to the scanner and final bill is generated. Large numbers of cashiers are required for this purpose. This process is very tedious and it becomes worst during holidays, weekends or special offers.

The product is an initiative to design an intelligent bag using Advanced RISC machine (ARM) LPC2148, Radio Frequency Identification (RFID) and Internet of Things (IoT). It also includes Liquid Crystal (LCD) to display cost and name of the product with total price of all the products enabling the customers to manage their budget. This information is stored in ARM memory, which will be transferred to main computer using Wi-Fi module. The proposed work has been coded in Embedded C and processed by Keli vision and Philip's Utility. The product saves time and evades long queues at the billing counter.

Each product of shopping mall, super markets will be provided with a RFID tag, identifies its type. Each shopping cart is implemented with a Product Identification Device (PID) it contains Microcontroller, LCD, an RFID reader. Purchasing product information will be read through a RFID reader on shopping cart and it is displayed in LCD which is interfaced to the controller. At billing counter, the total bill will be transferred to PC by Wi-Fi module.



A PROJECT REPORT On

"IoT Driven Automated Object Detection Algorithm For Urban Surveillance System and Smart Parking System In Cities" Submitted in the partial fulfillment of the requirement for the award of Degree of

> BACHELOR OF ENGINEERING In COMPUTER SCIENCE AND ENGINEERING By

TEJAS T R VALENTINE B AMBIKA B

1GV13CS063 1GV13CS064 1GV11CS002

Under the guidance of Mrs. VINUTHA B A Asst. Prof., Dept. of CSE.



2017-2018

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING DR.T.THIMMAIAH INSTITUTE OF TECHNOLOGY, Oorgaum, Kolar Gold Fields-563 122



OORGAUM, K.G.F. - 563 120 (KARNATAKA)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Project work entitled

"IoT Driven Automated Object Detection Algorithm For Urban Surveillance System and Smart Parking System In Cities" Is bonafied work carried out by

TEJAS T R VALENTENE B AMBIKA B

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| 1 | GV1 | 3CS064 |
| 1 | GV1 | 1CS002 |

In partial fulfillment for the award of degree of BACHELOR OF ENGINEERING in Computer Science and Engineering of VISVESWARAYA TECHNOLOGICAL UNIVERSITY, Belgaum during the year 2017-2018.It is certified that all corrections suggestions indicated for internal assessment has been incorporated in the report kept in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

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Signature of H.O.D

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Signature of Guide (Mrs. Vinutha B.A)

(Mrs. Vinutha B.A) **External Viva**

Name of the Examiners

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Signature of Principal (Dr. Syed Ariff) PRINCIPAL Dr. T. Thiramalah Institute of Technology fratile with Date 503 120.

Automated object detection algorithm is an important research challenge in intelligent urban surveillance systems for IoT and smart cities applications. In particular, smart vehicle license plate recognition (VLPR) and vehicle detection are recognized as core research issues of these IoT-driven intelligent urban surveillance systems.

They are key techniques in most of the traffic related IoT applications, such as road traffic real-time monitoring, security control of restricted areas, automatic parking access control, searching stolen vehicles, etc. In this paper, we propose a novel unified method of automated object detection for urban surveillance systems.

We use this novel method to determine and pick out the highest energy frequency areas of the images from the digital camera imaging sensors, that is, either to pick the vehicle license plates or the vehicles out from the images. Our proposed method can not only help to detect object vehicles rapidly and accurately, but also can be used to reduce big data volume needed to be stored in urban surveillance systems.

Locating a parking spot during peak hours in most populated areas like shopping malls, universities, exhibitions or convention centers is difficult for the drivers. The difficulty rises from not knowing where the available spots may be at that required time. Smart parking is a solution to metropolitan cities to reduce congestion, cut vehicle emission totals and save persons' time by helping them in finding a spot to park.