

A Bayesian Set Approach (BSM) for Segmentation of Retinal Fundus Images for Retinal Disorder Detection

D. Devarajan, PhD Scholar, E.G.S Pillay College of Engineering and Technology, Nagapattinam, Tamilnadu, India, devarajan@egspec.org

Dr. S. M. Ramesh, Professor, E.G.S Pillay College of Engineering and Technology, Nagapattinam, Tamilnadu, India, drsmramesh@egspec.org

Dr. B. Gomathy, Professor/Bannari Amman Institute of Technology, Erode, Tamilnadu, India,

gomramesh@gmail.com

Abstract: Research in medical image processing has been aggregating significant contributions and findings aided by the advent of state of the art image acquisition systems and processing algorithms. One such field of interest is the processing of retinal fundus image for detection of a series of disorders related to eye as well as diabetes prone patients. Segmentation forms the backbone behind retinal image processing as the segmentation of blood vessels in the retinal image brings out key findings about the condition of the eye. A novel Bayesian set approach/model is proposed in this research article for segmentation of blood vessels and compared with learning based model for the accuracy as well as computation time. Experimental results justify the simplicity of the proposed model with a high degree of observed precision.

Keywords —Bayesian Set Theory, Blood Vessels, Precision, Region of Convergence, Retinal Images, Segmentation

I. INTRODUCTION

In recent times, medical image processing has been found to be an integral part of almost all hospital management systems for patient disorder diagnosis and treatment [1] [15]. It could be rightly justified that the processing of such medical images greatly depends on the image acquisition methods employed. Further, in most cases, in spite of utilization of state of the art image acquisition methods, effective processing methods and algorithms employed bring about the required objective. On the other hand, these techniques are quite challenging due presence of significant amount of constraints [4]. One such field of medical image processing is the processing of retinal fundus images [6] for detection of eye related disorders. One such serious disorder observed from the literature is the diabetic retinopathy [11] [13] which is found to be prevalent among individuals with age groups ranging from teens aged around early 20's to 60's. This needs to be carefully and systematically handled supported by early detection schemes which if undetected may result in partial or even in complete blindness in individuals. This forms the motivation behind this research work and a strong detection method which could provide occurrence of the syndrome quite early could greatly aid in treatment and subsequent eradication of the disorder. Retinal fundus images play a key role in which appropriate segmentation methods may help in achieving the target objective. Blood

vessels in the retina play a vital role as they convey useful information regarding the onset of the disorder. Other related disorders may include diabetic retinopathy (DR) and a typical difference between normal and abnormal eye image is illustrated in figure 1 shown below.



Figure 1 a. Normal retinal image b. Retinal image with Diabetic Retinopathy

As clearly illustrated in figure 1, it could be seen that images with DR are well characterized by features such as aneurysms, edema, cotton wool appearances etc. In order to detect these features a clear cut and precise segmentation algorithm is required which has been taken as the primary objective of this research article. The rest of this article is categorized into a systematic literature survey highlighting various research contributions related to segmentation, followed by the proposed Bayesian set model in section 3. Section 4 presents the experimental results followed by a brief conclusion.



II. LITERATURE SURVEY

Any image segmentation and classification methods involve key steps like preprocessing, image enhancement and image segmentation which may be done in spatial or frequency domains. Many relevant literature related to preprocessing highlight superior performances with utilization of filters like median filters [5], matched filters [10] [16], hybrid combinations of median and mean filters, Gaussian filters and Wiener filters [11] which help in reduction of speckle noise [12] which is characteristic of medical images. With respect to segmentation, a wide range of techniques are available in the literature [5]. A conventional line detection method has been proposed in the literature [1] addressing the segmentation of slightly color disoriented images like pale blood vessels. Further, the segmentation has been carried out in an automated manner. The input images have been taken from DRIVE database [4] and an accuracy of 94.47% has been recorded in the literature. Comparison has been done against supervised learning methods and reduced computation time has also been observed. Images from the same data set have been taken up for investigation in the literature using Ada Boost classifier algorithms [3] with a data set of 20 images with 94.73% accuracy. But the demerit observed in this method is the variable precision of accuracy due to limited amount of retinal images taken up for study. A conventional method available in the frequency domain is the use of wavelet transforms [6] which involve the decomposition of input image into its constituent 2^k sub bands with k depicting the number of decomposition levels. An added feature in wavelet transforms is that it supports denoising as well as processing in the high frequency sub bands where noise is more prevalent. Wavelet based research advances include a number of transforms like Contourlet transform and Ridgelet transforms [11] for retinal blood vessel segmentation. Fusion based methods [8] have also been investigated in the literature which could be ideal for application over retinal images for detection of eye related disorders. Spatial domain methods involve morphological operations such as the well-known region growing method found in the literature [7] more suitable for optic disc segmentation approaches. Preprocessing and post processing filters are applied over the proposed method for smoothening the segmented output obtained through adaptive histogram equalization and blood vessel subtraction. However, the model complexity increases with increasing number of samples.

On the other hand, cluster based approaches [17] have also been implemented over retinal images using radius based clustering algorithm (RACAL) [9] using a distance based mapping method. A significant number of false positives have been observed in the experimentation and is basically a unsupervised learning based clustering. Supervised methods have also been used for retinal blood vessel segmentation using multiple kernel learning methods [13] which reduces the challenges encountered in manual segmentation approaches and is based on computation of Hessian matrix have been discussed elaborately in the literature. A drastic reduction in computation time is reduced due to the automated feature in this work. Decision based methods [14] invoking fuzzy c means method have been experimented on STARE database images and accuracy of up to 92% have been reported in the literature. From the survey of literature, it could be clearly seen that most of methods have focused towards automatic segmentation methods using cluster based approaches, line detection outlier based methods, supervised and unsupervised methods. Satisfactory levels of accuracy have been reported. On the contrary the complexity of the methods still remains to be a critical design challenge.

III. PROPOSED WORK

In this research work, the proposed work is based a simple structure of Bayesian set theory which drastically reduces the overall complexity of the segmentation method. The proposed algorithm is spatial domain based and involves concepts of regularization of distance parameter. The proposed model is progresses into three modules as pre-processing, vessel segmentation and post processing. In the pre-processing step closing operation and filtering operations are performed to remove the disc inference so that it retains the blood vessel images in the disc. It is easy to enhance the vessel information based on the variations in retinal images through the preprocessing module. The segmentation process used level set based model which includes Gaussian mixture and distance regularization terms to segment the vessels. This segmentation module reduces the energy function of the data set and in last post processing the length of the filter is defined to remove the unwanted data in the vessel due to noise and other factors.



Figure 2 Illustration of proposed Bayesian set segmentation method

The mathematical model of the proposed work used Bayesian model along with level set segmentation as a hybrid process to improve the segmentation accuracy. Figure 2 gives an illustration of proposed model.

The mathematical model of preprocessing for improving the efficiency includes vessel information for the grey level



image and closed image. Based on the variation in intensity the Gaussian curve is defined as

$$f(x,y) = GI\left(1 - re^{\frac{-pd^2}{2\alpha^2}}\right) \tag{1}$$

Where pd is the perpendicular distance, GI is the grey level intensity, r is the reflectance ratio value for blood vessel neighborhood, α is the vessel intensity. The matched filter representation for the actual image is given as

$$MF(x,y) = \left(-e^{\frac{-x^2}{2\alpha^2}}\right) \text{for}|y| \ll \frac{l}{2}$$
(2)

where *l* is the length of the vessel in a fixed direction. The filter response is suppressed due to the noise and a set of kernel filter in addition to the level set method provides better vessel information as input to the segmentation section. The hybrid segmentation process used intensity of the vessel distribution and the region information is extracted using difference images. Also distance regularization terms avoids noises due to intensity and the components used to define the parameters uses pixel intensity values. The iteration for conditional expectation is simplified into

$$Q = E_{GI}(\ln P(X, Y|\Theta|Y, \Theta^t))$$

The above equation represents all the possible labels for maximizing the parameters. While comparing the proposed model with supervised learning models the proposed model converges quickly for the given parameter training process. The Gaussian mixture term and its energy level is given as

$$E_F(\theta) = \int_0^\infty \log(P(Y|X, \Theta) \, dx \, dy$$
(4)

where Θ is the constant coefficient which is used to calculate the negative likelihood segmentation probability. The final term is obtained as

$$E_F(\theta) = v \int_0^\infty \log(P(Y|X, \Theta) \, dx \, dy \tag{5}$$

where v is the coefficient for level based segmentation process. The Dirac delta function is given as

$$\delta(\theta) = \frac{d}{d\theta} H(\theta) = \begin{cases} \frac{1}{2e} \left(1 + \cos\frac{\pi\theta}{\xi}\right) & \text{for } \leq \xi \\ 0 & (6) \end{cases}$$

The post processing module uses background values as misclassified vessel values and by investigating the results the level set method found the contours have more intensity as noise in homogeneity values. Using length filter the noises are eliminated and discards the connected graph pixels which are lesser than threshold values.

IV. RESULTS AND DISCUSSION

The proposed method was evaluated on database which includes dataset of 50 color images with 768×564

pixels in RGB channel, which were captured by a Canon CR5 camera and saved in JEPG-format. The test and training data set includes segmented images and performance of the set is compared with conventional model. In this the first set of 25 images is abnormal and second 25 images are normal. The performance is evaluated by the parameters such as true positive and false positive rate, efficiency and accuracy. The number of true negatives is obtained by measuring the values based on the image and the segmented area. Table 1 gives the performance comparison of the proposed model for normal images.

 Table 1 Performance comparison of proposed model [Normal Images]

S.No	Method	True Positive	False Positive
1	ANN	0.8245	0.0242
2	Fuzzy C means	0.8606	0.0194
3	Proposed BSM	0.8962	0.0157

 Table 2 gives comparison for abnormal images.

 Table 2 Performance comparison of proposed model

 [Abnormal Image]

[Abnormal Images]				
S.No	Method	True Positive	False Positive	
1	ANN	0.6542	0.0523	
2	Fuzz <mark>y C</mark> means	0.6844	0.03455	
3	Proposed BSM	0.7642	0.0220	

In order to provide hybrid level based terms in the proposed model the performance is compared with efficiency for the data set results obtained after the training process. In the ANN and fuzzy C based models, the learning process needs more data for training process and the experimentation takes more computation time when compared to the proposed model. Based on the training set results and data the performance particularly the efficiency of the proposed model and ANN model is defined. Figure 4 gives the detailed description of the proposed model results in terms of retinal image and segmented results and ground image for the normal sample. Figure 5 gives the same for the abnormal sample.



Figure 4 Normal Sample (a) Retinal Image (b) Proposed model Segmentation (c) Ground Image

(3)





Figure 5 Abnormal Sample (a) Retinal Image (b) Proposed model Segmentation (c) Ground Image

The next analysis involves utilizing standard deviation for quantifying the amount of difference between vessel and non vessel segmentation. It could be seen from figure 6 that the proposed BSM provides a close degree of separation indicating the efficiency of the proposed methodology to segregate a vessel from non-vessel based on minute feature details.



Figure 6 Analysis of variation between vessel and nonvessel segregation

From the segmented results the accuracy of the proposed model is using segmented results and also it defines the overall efficiency of the system. Table 3 gives the comparison of proposed model and ANN, Fuzzy C means model accuracy for normal and abnormal samples.

Table 3 Accuracy comparison					
S.No	Model	Normal	Abnormal		
		Sample	Sample		
1	ANN	0.9133	0.9024		
2	Fuzzy C	0.9455	0.9199		
	Means				
3	Proposed	0.9642	0.9542		
	BSM				

The final analysis is based on computation time required for the proposed BSM compared over the supervised and decision based segmentation models. The efficiency and reduction in computation time has been tested against increasing number of images in the dataset varying from 10 to 100 and in each case the proposed BSM model outperforms the conventional learning based models justifying the simplicity of the proposed approach which at the same time exhibiting improvement in accuracy.



Figure 7 Analysis of computation time

V. CONCLUSION

The proposed hybrid retinal blood vessel segmentation model attains better accuracy in segmentation process as 96.4% for normal sample and 95.45% for abnormal sample. Compared to conventional supervised learning model, the proposed model achieves 5% average improved accuracy by using Bayesian level set based segmentation process. Overall process has improved true positive and false positive values than supervised learning model. Proposed model provides better detection and the overall efficiency also higher than conventional model. The further scope of the research to improve the segmentation accuracy has attained using nature inspired or Meta heuristic optimization algorithm.

REFERENCES

- [1] Yue K, B. Zou, Z. Chen and Q. Liu (2018), "Improved multi-scale line detection method for retinal blood vessel segmentation", in *IET Image Processing*, 12(8): 1450-1457.
- [2] Kirbas C, F. Quek (2004), "A review of vessel extraction techniques and algorithms", ACM Computer Survey, 36(2): 81-121.
- [3] Lupascu C A, D. Tegolo and E. Trucco (2010), "FABC: Retinal Vessel Segmentation Using AdaBoost", in IEEE Transactions on Information Technology in Biomedicine, 14(5): 1267-1274.
- [4] Biswal, Birendra & Pooja, Thotakura & Balasubramanyam, N. (2017) "Robust retinal blood vessel segmentation using line detectors with multiple masks", IET Image Processing, 12(3).
- [5] Sangmesh Biradar, Jadhav A S (2015), "A survey on blood vessel segmentation and optic disc segmentation of retinal images", International journal of advanced research in computer and communication engineering, 4(5): 21 – 26.
- [6] Arnodo A, Decoster N and Roux S G (2000), "A wavelet based method for multi fractal image analysis: Methodology and test applications on isotropic and



anisotropic random rough surfaces", European journal of physics, 15: 567 – 600.

- [7] Lydia Glory Priyadharshini M and J. Anitha (2014), "A Region Growing method of Optic Disc segmentation in retinal images", in proceedings of the International Conference on Electronics and Communication Systems, 1-5.
- [8] Kathiresan N and Samuel Manoharan J (2015), "A comparative analysis of fusion techniques on multi resolution transforms", National academy science letters, 38(1): 61 – 65.
- [9] Salem S A and Nandi A K (2006), "Novel clustering algorithm and a partial supervision strategy for classification", IEEE international workshop on machine learning for signal processing, 313 – 318.
- [10] Hoover A et al. (2000), "Locating blood vessels in retinal images by piece wise threshold probing of a matched filter response", IEEE transactions on medical imaging, 19:203 – 210.
- [11] Staal J, Abramoff D, Niemeijer M, Viergever M A (2004), "Ridge based vessel segmentation in color images of the retina", IEEE transactions on medical imaging, 23: 501 – 509.
- [12] Wu D, Zhang M, Liu J and Bauman W (2006), "On the adaptive detection of blood vessels in retinal images", IEEE transactions on biomedical engineering, 53(2):341 343.
- [13] Liu X, Zeng Z and Wng X (2014), "Vessel segmentation in retinal images with a multiple kernel learning based method", proceedings of the joint conference on neural networks, 507 511.
- [14] Memari N, Ramli A R, Saripan M I B (2018), "Retinal blood vessel segmentation by using matched filtering ner and fuzzy C-means clustering with integrated level set method for diabetic retinopathy assessment", Journal of medical and biological engineering, 1 – 19.
- [15] Narain Ponraj D, Evangelin Jenifer, Poongodi P and Samuel Manoharan J (2011), "A survey on the preprocessing techniques of mammogram for the detection of breast cancer", Journal of emerging trends in computing and information science, 2(12):656 – 664.
- [16] AI-Rawi M, Qutaishat M, Arrar M (2007), "An improved matched filter for blood vessel detection of digital retinal images, Journal of Computers in Biology and Medicine, 37(2): 262-267.
- [17] Chinki Chandhok, Soni Chaturvedi and A.A Khurshid (2012), "An approach to Image Segmentation using Kmeans Clustering algorithm", International Journal of Information Technology, 1:552 - 557.

D Springer Link

Home > Soft Computing > Article

Methodologies and Application | Published: 30 March 2020

A metaheuristic optimization model for spectral allocation in cognitive networks based on ant colony algorithm (M-ACO)

B. Padmanaban 🖂 & S. Sathiyamoorthy

Soft Computing 24, 15551–15560 (2020) Cite this article 168 Accesses 8 Citations Metrics

Abstract

Cognitive radio networks have been gaining widespread attraction among researchers especially with the increasing demand for radio frequency spectrum whose availability is quite scarce. Cognitive radio networks provide an ideal solution to allocate spectrum to users on an Jio 46 Company for the second second

To: "mageshselvaraj22it@gmail.com" <mageshselvaraj22it@gmail.com> Cc: "Shanthi Abayam" <shanthi.abayam@solverminds. com>, "Ravishanker Kannan" <ravishanker.kannan@ solverminds.com>

(O) 9:07

 \sim

Dear Mageshwari,

Congratulations!!! We are pleased to inform that you have been shortlisted for the position of "Intern ".

Please treat this mail as a **"Letter of Intent"** from Solverminds. Meanwhile ,you will be part of a scheduled training program starting from **01 Dec 2020** as Intern with a stipend of INR 15000 per month. This training will comprise of both theoretical and practical assessments as per our business needs. Upon your successful completion of this program and your graduation, you will receive your Appointment Letter with the detailed break up of your annual salary. Your work location will be Chennai.

As informed during the interview, you are expected to be in our employment for a minimum period of three years from your date of joining as mentioned in your Appointment Letter.

Appreciate your confirmation & acceptance by acknowledging the same.



CERTIFICATE

O F APPRECIATION

PROUDLY PRESENTED TO

Asfar Fathima

ONEYES

INTERN

in appreciation of her successful work as an Intern at OneYes Technologies from June'20 to August'20.

Mr. Vadivelu Director OneYes Technologies





ABIRAMI. D

is here by awarded the certificate of achievement for

the successful completion of

Game development using PyGame



Certificate issued on: June 2 2020

Co-founder, CEO

Verified certificate ID: \$19NDn369A1k35095

Verify certificate at: www.guvi.in/certificate?id=51i9NDn369A1k35095







This is to certify that nithish kumar has successfully completed **Communication Skills** online course offered by TCS iON

SHJfh8 UhY: 09 Jun 2020 p 9 bX 8 UhY. 10 Jun 2020

Topics:

- Importance of Communication Process of Communication Barriers to Communication Non-Verbal Communication
 - Verbal Communication
 Effective Communication
 Summary



Head - Learning, iON Digital Learning Hub





Google Cloud Certificate of Completion

Abirami D

Has successfully completed the

Google Cloud Platform Business Professional Accreditation

Date of completion: 07/08/2020

Rochana Golani Director, Google Cloud Learning and Enablement

Louise Byrne Head of Google Cloud Training

Google Cloud

Completion ID: 54056435

















Regd.No IV/13/2017

CERTIFICATE OF APPRECIATION

This is to certify that

Ms.ELAKKIYA G

HAS ACTIVELY PARTICIPATED IN THE **REPUBLIC DAY ONLINE QUIZ** CONDUCTED BY **ASPIRE ACADEMY**, NAGAPATTINAM HELD ON 26.01.2021

ASPRDCER015

Founder - Director S.Baraneedharan Aspire Academy



Home > Soft Computing > Article

Methodologies and Application Published: 30 March 2020

A metaheuristic optimization model for spectral allocation in cognitive networks based on ant colony algorithm (M-ACO)

B. Padmanaban 🖾 & S. Sathiyamoorthy

Soft Computing 24, 15551–15560 (2020) Cite this article 168 Accesses 8 Citations Metrics

Abstract

Cognitive radio networks have been gaining widespread attraction among researchers especially with the increasing demand for radio frequency spectrum whose availability is quite scarce. Cognitive radio networks provide an ideal solution to allocate spectrum to users on an









BONAFIDE CERTIFICATE

Certified that this Thesis titled "CASE STUDY ON LOW COST HOUSING SOLUTIONS FOR VISION- 2023", is the bonafide work of J.JOHN JENISTAN RAJ (820814103039), S.KATHAMUTHU (820814103042), G.MOHANA SUNDARAM (820814103059), N.MOHANRAJ (820814103060). Who carried out the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or reward was conferred on an earlier occasion on this or any other candidate.



Dr.R.SIVAKUMAR, M.TECH., PhD.

HEAD OF THE DEPARTMENT

Department of Civil

E.G.S.Pillay Engineering College,

Nagapattinam- 611002

Ms.M.SUBITADEENESHWARI M.E., ASSISTANT PROFESSOR Department of Civil Engineering E.G.S Pillay Engineering College, Nagapattinam-611002

Submitted for the Viva-Voce examination held on ...13 04/18





BONAFIDE CERTIFICATE

Certified that this project report "EXPERIMENTAL STUDY ON PARTIAL REPALCEMENT OF COARSE AGGREGATE BY COCONUT SHELL &FINE AGGREGATE BY GLASS POWDERED IN CONCRETE" is the Bonafide work of KARTHIKESWARI.K (820814103040) , KOWSALYA.S (820814103045) , MEENATHARANI.K (820814103053) , KANIMOZHI.R (820814103503) who carried out the project under my supervision.

SIGNATURE Dr.R.SIVAKUMAR,M.Tech.,Ph.D.

HEAD OF THE DEPARTMENT

Department of Civil Engineering

INTERNAL EXAMINER

E.G.S. Pillay Engineering College, 66 Nagapattinam. SIGNATURE 119/18

N.KARTHIKA,ME.,

ASSISTANT PROFESSER

SUPERVISOR

Department of Civil Engineering

E.G.S.Pilay Engineering College,

Nagapattinam.

Submitted for VIVA-VOCE examination on 12:04:2018. at N

E.G.S.Pillay Engineering college, Nagapattinam.

Biztulie .

EXTERNAL EXAMINER

ii

ANNA UNIVERSITY, CHENNAI 600 025 BONAFIDE CERTIFICATE

Certified that this project report "AN EXPERIMENTAL INVESTIGATION ON COMPARISION OF CURING OF CONCRETE USING NATURAL RESIN AND CHEMICAL RESIN " is the bonafide work of "DHARANIDHARAN.D" who carried out the project under my supervision.



Dr.R.SIVAKUMAR. M.E., PHD. HEAD OF DEPARTMENT Department of Civil Engineering E.G.S. Pillay Engineering College Nagapattinam.611 002.

SIGNATURE

Mrs.N.KARTHIKA.M.E. SUPERVISOR Assistant Professor Department of Civi lEngineering E.G.S.Pillay Engineering College Nagapattinam.611 002.

Submitted for the Viva-Voce examination held on 12.04.2018

INTERNAL

EXTERNAL EXAMI

BONAFIDE CERTIFICATE

Certified that this project report "AN EXPERIMENTAL STUDY OF FIBRE REINFORCED GEOPOLYMER CONCRETE USING FLYASH, GGBS AND POLYPROPYLENE FIBRES WITH THE PARTIAL REPLACEMENT OF SAND BY M-SAND" is the bonafide work of " R.ASHA(820814103012),V.M.BAKIYA(820814103014),

S.GANGADEVI(820814103028), G.JAYABHARATHI (820814103035)" who carried out the project work under my supervision.



Dr.R.SIVAKUMAR, M.E, Ph.D., HEAD OF THE DEPARTMENT

Department of civil engineering

E.G.S.Pillay Engineering College Nagapattinam. P. Malin 118

SIGNATURE

Prof.P.MALLIGA.M.Tech,(Ph.D).,

SUPERVISOR

Department of civil engineering

E.G.S.Pillay Engineering College Nagapattinam.

INTERNAL E

1059 12/4/18 EXTERNAL EXAMINER

BONAFIDE CERTIFICATE

Certified that this project report "EXPREMENTAL INVESTIGATION OF GLASS FIBRE REINFORCED GEO POLYMER CONCRETE" is the bonafide work of "M.ARAVINTHAN (820814103009), V.ASWINKUMAR(820814103013),P.KUNAVASANTHAN(820814103047), B.BALAKUMARAN(820814103303)" who carried out the project work under my supervision.



SIGNATURE

Dr.R.SIVAKUMAR, M.E, Ph.D.,

HEAD OF THE DEPARTMENT

SUPERVISOR

Department of Civil Engineering E.G.S.Pillay Engineering College. Department of Civil Engineering E.G.S.Pillay Engineering College

Prof P.MALLIGA, M.Tech., (Ph.D).,

Nagapattinam.

Nagapattinam.

Submitted for VIVA-VOICE examination on 13:04:2012... at E.G.S PILLAY ENGINEERING COLLEGE, NAGAPATTINAM 611002.

INTER

Salou 2018

EXTERNAL EXAMINER

BONAFIDE CERTIFICATE

Certified that this project report "REMOVAL OF MICRO ALGAE BY USING RICE STRAW IN STORED WATER "is the bonafide work of (820814103003), M.HARITH KUMAR **"A.ANANTH** (820814103031), M.JAINAB (820814103034), R.JAYASURYA (820814103038)" who carried out the project work under my supervision.

alar 108

SIGNATURE

Mr.S.SHYAM SUNDAR ,M.E.,(Ph.D)

HEAD OF THE DEPARMENT

Dr.R..SIVAKUMAR, M.E., Ph.D

SIGNATURE

SUPERVISOR

Assistant Professor

Department of Civil Engineering

E.G.S.Pillay Engineering college Nagapattinam.

Department of Civil Engineering

E.G.S Pillay Engineering Nagapattinam.

Submitted to the viva voice held at E.G.S PILLAY ENGINEERING COLLEGEOn ...) 2. 04, 2018

INTERNAL EXAN

EXTERNAL EXAM

BONAFIDE CERTIFICATE

Certified that this project report "CHARACTERISTICS ANALYSIS OF VEHICLE WASH WASTEWATER USING ORANGE PEEL AS ADSORBENT "is the bonfide work of "K.ARAVINTH(820814103007), A.ARIFA BEGAM(820814103010), D.JAYAPRIYA(820814103037) A.MONICA(820814103061)" who carried out the project work under my supervision.

SIGNATURE Dr.R.SIVAKUMAR M.E.,Ph.D., HEAD OF THE DEPARMENT

Department of Civil Engineering E.G.S Pillay Engineering College

N.R. VutRanturen

SIGNATURE Mr.N.R.VETHAMOORTHY,M.E. SUPERVISOR ASSISTANT PROFESSOR Department of Civil Engineering E.G.S Pillay Engineering College

Submitted to the viva voice held at "E.G.S PILLAY ENGINEERING COLLEGE" On 12.04.18

INTERNAL EXAMINER

EXTERNAL EXAMINER

ANNA UNIVERSITY: CHENNAI 600 025 BONAFIDE CERTIFICATE

Certified that this project report "PERFORMANCE EVALUATION OF FLEXIBLE ROAD WITH WASTE PLASTICS" is the bonafide work of J.AMARNATH(820814103002), K.ANBUCHEZHIAN(820814103004), R.ARUNMOZHI (820814103011), M.ARUN (820814103302) who carried out the project work under my supervision.

SIGNATURE

Dr.R.SIVAKUMAR.M.E.,PhD., HEAD OF THE DEPARTMENT DEPARTMENT OF CIVIL ENGINEERING

URE

Mr. J.BRITTO.M.E SUPERVISOR ASST.PROFESSOR DEPARMENT OF CIVILENGINEERING

Submitted for VIVA-VOCE examination on...12...0.4...201.8...at E.G.S.Pillay Engineering College, Nagapattinam - 611002.

EXTERNAL EXAMINER

EXAMINER INTE

ANNA UNIVERSITY, CHENNAI 600 025 BONAFIDE CERTIFICATE

Certified that this project report "STRUCURAL PERFORMANCE OF WOOD BASED SANDWICH PANALS" is the bonafide work of "ARAVINDHAN.B,BALASUBRAMANIYAN.A,KARTHIKEY.K ,MOHANASUNDAR.K" who carried out the project under my supervision.

SIGNATURE Dr.R.SIVAKUMAR. M.E., PhD. HEAD OF DEPARTMENT Department of Civil Engineering E.G.S. Pillay Engineering College Nagapattinam.611 002. J. Jul 19 12/11/18

SIGNATURE MR.T.ADHAVANATHAN.M.E. SUPERVISIOR Assistant Professor Department of civilEngineering E.G.S.Pillay Engineering College Nagapattinam.611 002.

Submitted for the Viva-Voce examination held on 13.04.2018

INTER

toutzorx

EXTERNAL EXAMINER

BONAFIDE CERTIFICATE

Certified that this project report "EXPREMENTAL STUDIES ON BACTERIAL CONCRETE" is the bonafide work of "S.ARAVINDH (820814103005), R.JAGAN (820814103033), V.JAYAKESAN (820814103033), B.DHINESH KUMAR (820814103305)" who carried out the project work under my supervision.

SIGNATURE

Dr R.SIVAKUMAR, Ph.D.,

HEAD OF THE DEPARTMENT

Department of Civil Engineering

E.G.S.Pillay Engineering College.

Nagapattinam.

Ms. M.GAYATHIRI, ME., SUPERVISOR

E.G.S.Pillay Engineering College

Nagapattinam.

INTERNAL

AL EXAMINER EXTERN





E.G.S.PILLAY ENGINEERING COLLEGE NAGAPATTINAM – 611 002 (AN ISO 9001:2008 CERTIFIED INSTITUTION) APPROVED BY AICTE, NEW DELHI ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report "PERFORMANCE OF CEMENT MORTAR WITH ADDITION OF RICE BRAN" is the bonafide work of "P.MUTHURAJA (820814103308)" who carried out the project work under my supervision.

SIGNATURE Mr.R.SIVAKUMAR.M.E.,Ph.D. HEAD OF THE DEPARTMENT

Department of Civil Engineering EGS pillay Engineering College Nagapatinam-611002

SIGNATURE

Mr.V.BALASUBRAMANI.M.E., PROJECT GUIDE Asst.Professer Department of Civil Engineering EGS pillay Engineering College Nagapatinam-611002

Submitted for VIVA-VO CE examination on 19:04:2018......At E.G.S.PILLAY Engineering College, Nagapattinam 611 002.

EXTERNAL EXAMINER

aquile .

INTERNAL EXAMINER

BONAFIDE CERTIFICATE

Certified that this project report "EXPERIMENTAL STUDY ON PARTIAL REPLACEMENT OF MARBLES WASTES STONE AS COARSE AGGREGATE IN CONCRETE." Is the bonafide of "A.AMALRAJ (820814103301), V.CHANDRAMOHAN (820814103019), D.DHANESHKUMAR (820814103502), S.GUNASEELAN (820814103306)", who carried out the project work under my supervision.

SIGNATURE Dr.R.SIVAKUMAR.M.E.,Ph.D.,

HEAD OF THE DEPARTMENT Department Of Civil Engineering E.G.S.Pillay Engineering College Nagapattinam 611 002

SIGNATURE

Mr.E.VENKATESAN.M.E.,

ASSISTANT PROFESSOR Department Of Civil Engineering E.G.S.Pillay Engineering College Nagapattinam 611 002

INTERNAL EXA

north

EXTERNAL EXAMINER

BONAFIDE CERTIFICATE

Certified that this project report "EXPERIMENTAL INVESTIGATION ON REPLACEMENT OF REINFORCEMENT BY USING BANANA FIBRE AND GLASS FIBRE WITH POLYESTER RESIN" is the bonafide work of "DANIAL RAJ .S (820814103020), KIRUTHIKA .S (820814103044), MELINDA SHALI .G (820814103054), MERLIN .S (820814103055)" who carried out the project work under my supervision.

SIGNATURE

Dr. R. SIVAKUMAR M.E., Ph. D

HEAD OF THE DEPARTMENT

Department of civil Engineering

E.G.S Pillay Engineering college, NGINET II

Nagapattinam 611002.

Mr. M. ANBARASAN M.E., SUPERVISOR

ASSISTANT PROFESSOR

Department of civil engineering

E.G.S Pillay engineering college

Nagapattinam 611002.

Submitted for the VIVA-VOCE Examination held on 12. 04. 2018. at

E.G.S Pillay engineering college, Nagapattinam

INTERNAL EXAMINER

12/4/18

EXTERNAL EXAMINER

BONAFIDE CERTIFICATE

Certified that this project report"EXPERIMENTAL INVESTIGATION OF SEMI RIGID PAVEMENT" is the bonafide work of "NOORE NAZEER.S(820814103067),SANJEEV RAJAN.S (820814103088), SARAVANAN.N(820814103093),VIGNESH .K(820814103112)". Who carried out the project work under my supervision.

SIGNATURE



Dr. R.SIVAKUMAR, M.E., Ph.D.

(HEAD OF THE DEPARTMENT)

Department Of Civil Engineering, E.G.S Pillay Engineering College, Nagapattinam 611 002.

12/4/14 SIGNAT

Mr.A. ARJUNANM.E.,.

(ASST.PROFESSOR)

PROJECT SUPERVISOR

Department Of Civil Engineering E.G.S Pillay Engineering College,

Nagapattinam 611 002.

Submitted for VIVA- VOCE examination held on

INTERNAL

EXTERNAL EXAMINER

BONAFIDE CERTIFICATE

Certified that this project report UTILIZATION OF NON RECYCLED PLASTIC WASTE IN CONCRETE PAVER BLOCK is the bonafide work of NADARAJAN.S (820814103063), PAVENTHAN.M (820814103069), SANTHOSHKUMAR.C (820814103090), POOVARAJAN.M (820814103071) who carried out the project work under my supervision.

SIGNATURE

Dr.R.SIVAKUMAR

HEAD OF THE DEPARTMENT

Department of Civil Engineering

E.G.S Pillay Engineering College

Robitale

SIGNATURE

R.NEELAVENI M.Tech

SUPERVISOR

Assistant Professor

Department of Civil Engineering

E.G.S Pillay Engineering College

Submitted for the examination held on 13.04.2018

INTERNAL

BONAFIDE CERTIFICATION

project **"STUDYON** Certified that this report **STRENGTH** CHARACTERISTICSOF **CONCRETE** USING Μ SAND _ AND COCONUTFIBRE" is the bonafide work of "N. PRIYADHARSHINI (820814103085), **P**. RENUGA **SANTHOSH** (820814103075), **B**. (820814103089), V.VIJAYASIVANYA (820814103115)" who carried out the project work under my supervision.

SIGNATURE DR.R.SIVAKUMAR, M.E., Ph.D.,

Head of the deparment,

Department of Civil Engineering

- Cinimus Sillalif

SIGNATURE

Mr.V.SRINIVASAN, M.E.,

Assistant professor,

Department of Civil Engineering

INTERNAL EXAMINAR

EXTERNAL EXAMINAR

BONAFIDE CERTIFICATE

Certified that this project report "CLIMATE CHANGE AND REMEDIAL MEASURES FOR NAGAPATTINAM AREA" is the bonafide work of V.RAJADURAIPERUMAL(820814103078),B.PRAKASH(820814103309) ,R.SABARINADHAN(820814103312),A.YASHIRARAFATH(820814103

318)". Who carried out the project work under my supervision.

SIGNATURE Dr. R.SIVAKUMAR M.E., Ph.D.,

HEAD OF THE DEPARTMENT

Department Of Civil Engineering,

E.G.S Pillay Engineering College,

Nagapattinam 611 002.

youl W SIGNATURE

Mr. S.SHYAM SUNDAR M.E.,

ASST.PROFESSR

SUPERVISOR

Department of Civil Engineering

E.G.S Pillay Engineering College,

Nagapattinam 611002.

Submitted for the VIVA – VOCE examination held on .13.1.04.1.2018

INTERNAL EXAMINER

AMINER
ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report "TREATMENT OF CONTAMINATED SURFACE WATER FOR EFFECTIVE UTILISATION" is the bonafide work of "R.NITHYANANTHAM (820814103065), G.RAJESH (820814103081), R.VIGNESH KUMAR (820814103113), B.PRATHAP (820810103310)". Who carried out the project work under my supervision.

SIGNATURE Dr. R.SIVAKUMAR, M.E., Ph.D (HEAD OF THE DEPARTMENT)

Department Of Civil Engineering, E.G.S Pillay Engineering College, Nagapattinam 611 002. N. R. Vethandund SIGNATURE

Mr. N.R.VETHA MOORHY., M.E.

(ASST.PROFESSOR)

PROJECT SUPERVISOR

Department Of Civil Engineering E.G.S Pillay Engineering College, Nagapattinam 611 002.

Submitted for VIVA- VOCE examination held on

INTERN

EXTERNAL EXAMINER

ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report "PARTIAL REPLACEMENET OF FINE AGGREGATE BY PONDASH AND CEMENT BY SILICAFUME IN CONCRETE" is the bonafide work of "N.RESHMA (820814103086), M.SATHIYAPRIYA (820814103097), A.SNEHA (820814103102), M.UMAVATHI (820814103110) " who carried out the project work under my supervision.

SIGNATURE DR.R.SIVAKUMAR, ME, PhD.,

Head of the department,

Department of Civil Engineering

Mr.A.PIRAKASAM, ME,

Assistant professor,

MEERIN Department of Civil Engineering

E.G.S.Pillay Engineering college, Nagapattinam 611002.

INTERNAL EXAM

EXTERNAL EXAMINER

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report "PARTIAL REPLACEMENT OF COARSE AGGREGATE WITH CERAMIC WASTE TILES IN CONCRETE" is the bonafide work of "B.NIVEDITHA (820814103066), E.RUTHRA (820814103087),T.SEEVALAKSHMI (820814103098), G.VIMALA (820814103702)" who carried out the project work under my supervision.



Dr. R.SIVAKUMAŔ,M.É.,PH.D HEAD OF THE DEPARTMENT Department of Civil Engineering, E.G.S Pillay Engineering College, Nagapattinam 611 002. SIGNATURE Mr. V.BALASUBRAMANI,M.E., SUPERVISOR Department of Civil Engineering, E.G.S Pillay Engineering College, Nagapattinam 611 002.

Submitted for VIVA–VOCE Examination on .1.3...........at E.G.S.Pillay Engineering College, Nagapattinam 611002.

INTERNAL EXAMINER

04/2018 EXTERNAL EXAMINER

ANNA UNIVERSITY : CHENNAI 600025

BONAFIDE CERTIFICATE

Certified that this project report "STUDY ON TRAFFIC MANAGEMENT INMAYILADUTHURAI"isthebonafideworkofA.SATHISH(820814103096),S.SIVABALAN(820814103101),G.SURENDAR(820814103106),G.VINOTH(820814103117)". Who carriedout the project work under my supervision.

SIGNATURE Dr. R.SIVAKUMAR M.E.,Ph.D.,

HEAD OF THE DEPARTMENT

Department Of Civil Engineering,

E.G.S Pillay Engineering College,

Nagapattinam 611 002.

SIGNATURE

Mr. T.ADHAVANATHAN M.E.,

ASST.PROFESSOR

SUPERVISOR

Department Of Civil Engineering

E.G.S Pillay Engineering College,

Nagapattinam 611 002.

INTERNAL EXAMINER

EXTERNAL EXAMINER

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report "STUDY AND EXPERIMENTAL INVESTIGATION OF LEACHATE FROM THE MUNICIPAL SOLID WASTE AT NAGAPATTINAM" is the bonafide work of "PRAVEEN K (820814103074), RAJAVEL J (820814103080), SATHAKI RAMADOSS J (820814103094), SABARI RAJAN T (820814103313)", who carried out the project work under my supervision.

SIGNATURE

Dr.R.SIVAKUMAR, M.E., PhD HEAD OF THE DEPARTMENT E.G.S Pillay Engineering College, Nagapattinam-611002.

Ms.M.GAYATHŔI, M.E., SUPERVISOR Assistant Professor, E.G.S Pillay Engineering College, Nagapattinam-611002.

INTERN

J-81699 1244/18

EXTERNAL EXAMINER

ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report "EXPERIMENTAL STUDY ON BITUMEN PAVEMENT USING RECYCLED FILLERS" is the bonafide work of "PARTHIBAN .V (820814103068), SATHEESHKUMAR .M (820814103095), VIVEK .R (820814103118), RAGHAVAN .R (820814103311)". Who carried out the project work under my supervision.

SIGNATUR Dr. R.SIVAKUMAR M.E., Ph.D

SIG

SUPERVISOR

Mr. G.PRAKASH M.E.,

HEAD OF THE DEPARTMENT

Department of Civil Engineering,

E.G.S Pillay Engineering Colleges FRING Nagapattinam 611 002 ASSISTANT PROFESSOR

Department of Civil Engineering E.G.S Pillay Engineering College, Nagapattinam 611 002.

INTER EXAMINER

12/4/18.

EXTERNAL EXAMINER

Certified that this project titled "A STUDY ON EMPLOYEES SAFETY AND WELFARE MEASURES IN GANESH DIE CASTING PVT LTD AT CHENNAI" is a bonafide work of Ms.A.AARTHI, Registration Number: E20BAR002, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

ii

Supervisor/Director Dr. R. KARTHI, MSA. M. Phil. Ph.D.

Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07.07. 2022

Certified that this project titled "A STUDY ON HUMAN RESOURCE POLICIES IN JYOTHY LABS LTD AT KARAIKAL" is a bonafide work of Ms. AARTHI.R, Registration number: E20BAR003, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Dr. R. KARTHI, HBA. M.Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07/07/2022

Internal Examiner

External Examiner Flow

Certified that this project titled "A STUDY ON JOB SATISFACTION AMONG EMPLOYEES IN POOMPUHAR ART AND METAL CENTER AT SWAMINALAI TK" is a bonafide work of Ms. K. ABIRAMI, Registration number: E20BAR004, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director

Dr. R. KARTHI, MBA. M. Phil Pr D. Director/MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07 | 07 1 20 23

nternal Exan

Supervisor

ternal Examiner

Certified that this project titled "A STUDY ON PERFORMANCE APPRASIAL IN OIL AND NATURAL GAS CORPORATION LIMITED AT KARAIKAL" is a bonafide work of Ms.A.ABISHA, Registration number: E20BAR005, who carried out the research under my upervision. Certified further, that to the best of my knowledge the work reported herein does not orm part of any other project report or dissertation on the basis of which a degree or award was onferred on the earlier occasion on their or any other candidate.

pervisor

Director

Dr. R. KARTHI, NBA. M. Phil. Ph. D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 811 002.

va voice examination held on 7.07.22

I Examiner

ernal Examin

Certified that this project titled "A STUDY ON IMPACT OF JOB SATISFACTION ON PRODUCTIVITY IN TOPI VAPPA FOODS PVT. LTD., CHENNAI." is a bonafide work of Mr.AHAMED HAALIDH.T Registration number: E20BAR006, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

an dusike Supervisor

Dr. S. CHANDRASEKAR, M.Com., MBA., M.Phil., NET(UGC), Ph.D., Professor Department of Management Studies E.G.S. Pillay Engineering College Nagapattinam - 611 002.

Viva voce examination held on 01/07/ 2022

Dr. R. KARTHI, MBA. M.Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 902.

11/22 **Internal Examiner**

External Exam

Certified that this project titled **"A STUDY ON LEADERSHIP STYLE IN SVS OIL MILLS PRIVATE LIMITED., CHENNAL."** is a bonafide work of **Mr.AHMED FARHAN.M** Registration number: **E20BAR007**, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, MBA. M.Phil., Ph.D. Director / MBA L.C.S. Pillay Engineering College, Nugapattinam - 611 002.

Viva voce examination held on OHO712022

Examiner

Eternal Examin

Certified that this project titled "A STUDY ON FINANCIAL PERFORMANCE ANALYSIS IN SUPREME STEEL AT TRICHY is a bonafide work of Ms. R. AJANTHA, Registration number: E20BAR008, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Dr. R. KARTHI, MBA, M phil. of 0. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07.07.2022

Internal

Certified that this project titled "A STUDY ON PERFORMANCE APPRAISAL EFFECTIVENESS ANALAYSIS AT SPACE DESIGNERS AND CONSTRUCTION PVT LTD IN CHENNAI" is a bonafide work of Mr. G.AJAY, Registration Number: E20BAR009, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

rvisor

Director Dr. R. KARTHI, NBA.M.Phil 25 0, Director / MBA E.G.S. Pillay Engineering College, Nagepattinam - 511 002.

Viva voce examination held on D7 07 2022

rnal Examiner

Certified that this project titled "A STUDY ON LABOR ABSENTEEISM IN PRISM JOHNSON PVT. LTD., KARAIKAL." is a bonafide work of Mr. AJWADH AHMED.M Registration number: E20BAR010, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director

Dr. R. KARTHI, MBA., M.Phil 24 0. Director / MBA E.G.S. Pillay Engineering College, Nogsperlinam - 611 002.

Viva voce examination held on 07/07/2022

Internal Examiner

External Examiner

tified that this project titled "A STUDY ON THE IMPACT OF JOB SATISFACTION IN PRISM HNSON PVT. LTD., CHENNAI." is a bonafide work of Mr. AKASH. R Registration number: DBAR011, who carried out the research under my supervision. Certified further, that to the best of my owledge the work reported here in does not form part of any other project report or dissertation on the his of which a degree or award was conferred on the earlier occasion on their or any other candidate.

1 Landow 4 Supervisor

Dr. S. CHANDRASEKAR, M.Com., MBA., M.Phil., NET(UGC), Ph.D., Professor Department of Management Studies E.G.S. Pillay Engineering College Nagapattinam - 611 002.

Dr. R. KARTHI, N84. M.Phil., Ph.B. Director / MBA E.G.S. Pillay Engineering College, Nagapartinam - 611 002.

Viva voce examination held on D7.01. 2022

Examiner

Eternal Examiner

Certified that this project titled "A STUDY ON EMPLOYEE MOTIVATION IN NEYCER INDIA PRIVATE LIMITED AT CHENNAI" is a bonafide work of Mr.ARAVINTH. D, Registration number: E20BAR013, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, MBA. M. Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07 07 2022

External Examiner [R. GowR1]

Certified that this project titled "A STUDY ON EMPLOYEE WELFARE IN TVARUR DILS AND FATS PVT LTD AT THIRUVARUR" is a bonafide work of Ms. K.ARCHANA, Registration number: E20BAR014, who carried out the research under my supervision Certified arther, that to the best of my knowledge the work reported herein does not form part of any ther project report or dissertation on the basis of which a degree or award was conferred on the arther occasion on their or any other candidate.

Director and Supervisor

Dr. R. XARTHI, MBA. M. Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

iva voce examination held on 07 07 2022

nal Examiner

External Exam

Certified that this project titled "A STUDY ON EMPLOYEE ENGAGEMENT IN AKR INDUSTRY AT TRICHY" is a bonafide work of Mr. ARUL AROKIAM MILTON, Registration number: E20BAR016, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Jusile Supervisor CHANDRASEKAR, M.Com., MBA., M.Phil., NET(UGC), Ph.D., Professor Department of Management Studies E.G.S. Pillay Engineering College Nagapattinam - 611 002.

Director

Dr. R. KARTHI, MBA. M.Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapathuman - 311 002.

Viva voce examination held on 07.07.2022

xamine

Certified that this project titled "A STUDY ON FINANCIAL STATEMENT ANALYSIS AND WORKING CAPITAL MANAGEMENT IN SRI VEERABATHIRA BENEFITS FUND LIMITED AT NAGAPATTINAM" is a bonafide work of Ms. R. ARUL KEERTHIKA, Registration number: E20BAR017, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director

Dr. R. KARTHI, NBA. M. PHI PH D. Director / MBA E.G.S. Filley Fauineering College, Magapathian - 814 602.

Viva voce examination held on _

07 . 07 . 2022

ü

Internal Examiner

External Examin

Certified that this project titled "A STUDY ON WORKING CAPITAL MANAGEMENT N KAMALAMBIKA CO-OPERATIVE URBAN BANK LTD AT THIRUVARUR" is a conafide work of Ms. T. ATCHAYA, Registration number: E20BAR018, who carried out the research ander my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was onferred on the earlier occasion on their or any other candidate.

507/202

Supervises istant Professor Dartment of Management Studies S Pillay Engineering College Negapattinam - 611 002. Mobile: 99433 11192

Viva voice examination held on_ 7.7.22

Internal Examiner

Director

Or. R. KARTHI, MALM.Phil. Phil Director / Mea E.G.S. Pilley Engineering College, Negopathinene - St 1 202.

External Examiner

ii

ied that this project titled "A STUDY ON EMPLOYEE RELATIONSHIP MANAGEMENT IARUTI SERVICE MASTERS AT CHENNAI" is a bonafide work of Ms. B.BAVISTI, stration number: E20BAR020, who carried out the research under my supervision. Certified er, that to the best of my knowledge the work reported herein does not form part of any other ct report or dissertation on the basis of which a degree or award was conferred on the earlier sion on their or any other candidate.

1 July 191-

Supervisor

Director

Dr. R. KARTHI, MBA. M. Phil P Director/MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07/07/2022

ii

ernal Examiner

Certified that this project titled "A STUDY ON EMPLOYEE'S RETENTION STRATEGY WITH SPECIAL REFERENCE INSOLUTION AT CHENNAI" is a bonafide work of MR.BHARATHKUMAR R, Registration number: E20BAR021, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. P. KAPTHI, HBA. M.Phil. Phil Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 902

Viva voice examination held on 07.07.2022

Internal Examiner

Certified that this project titled "A STUDY ON TRAINING AND DEVELOPMEN IN AHASH NISSAN, THANJAVUR" is a bonafide work of Ms. A. BHAVANISHA, Registration number: E20BAR022, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Directo

Or. R. KARTHI, Mai M Phil Po II. Glassor / MBA E.G.S. Philop Inglessing College, Negapattices - 511 002,

Viva voice examination held on <u>7-7-2022</u>

Internal Examiner

External Example

Certificate that this project titled "A STUDY ON EMPLOYEES JOB SATISFACTION IN OIL AND NATURAL GAS CORPORATION LIMITED AT NERAVY, KARAIKAL" is the bonafide work of Ms. G. BRUNDHA, Registration Number: E20BAR023, who carried out the project work under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation based based on which a degree or award was conferred on an earlier occasion on their or any other candidate.



Director

Or. R. KARTHI, NBA.M.Phil.,Ph.Q. Director/MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on _

07.07.2012

ii

Internal Examiner

2/2/12 **External Examiner**

Certified that this project titled "A STUDY ON PERFORMANCE APPRAISAL IN OIL AND NATURAL GAS CORPORATION LIMITED IN NERARY(Po) KARAIKAL" is a bonafide work of R. CHELLAMMAL, Registration number: E20BAR024, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.



Director

Dr. R. KARTHI, M84. M.Phil., Ph.O. Director / M8A E.G.S. Pillay Engineering College, Prograttinam - 611 002,

Viva voce examination held on 07.07.2022

Internal Exam

1 Examiner GowR17

Certified that this project titled "A STUDY ON EMPLOYEE WELFARE MEASURE IN AMMAIYAR MILK DAIRY AT KARAIKAL" is a bonafide work of Ms.S.DIVYA, Registration Number : E20BAR025, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

07/25 AKASH, B.Tech., MBA.,

Assistant Professor Department of Management Studies E.G.S Pillay Engineering College Nagapattinam - 611 002. Mobile: 99433 11192

Director

Dr. R. KARTHI, MBA. M.Phil., Ph D. Director / MBA E.G.S. Alikay Engineering College, Nagencologiam - 611 002.

Viva voice examination held on 07.07.2022

Site

Internal Examiner

Externs

Certified that this project titled "A STUDY ON EMPLOYEE'S TRAINING AND DEVOLPMENT IN VISION PLUS PRIVATE LIMITED AT CHENNAI" is a bonafide work of MR.FARISH AHAMED S, Registration number: E20BAR026, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, MBA., M. Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voice examination held on 07.07.2022

Internal Examiner

External Exan

ertified that this project titled "A STUDY ON ANALYSIS OF FINANCIAL TATEMENTS IN KUMBAKONAM CENTRAL COOPERATIVE BANK LTD AT AGAPATTINAM" is a bonafide work of Ms. Y.FOUZIA, Registration number: 20BAR027, who carried out the research under my supervision. Certified further, that to the est of my knowledge the work reported herein does not form part of any other project report or ssertation on the basis of which a degree or award was conferred on the earlier occasion on eir or any other candidate.

upervisor

Director

Dr. R. KARTHI, MBA., M. Phil., Ph.D. Director / MBA E.G.S. Filley Engineering Callego, Nagapattinam - C1:

Viva voce examination held on 1/1/22

nternal Examine

External Examiner [R.Gowei]

Certified that this project titled "A STUDY ON EMPLOYEE STRESS MANAGEMENT IN RAMTEC CONSTRUCTION COVERS AND BLOCKS PRIVATE LIMITED AT THIRUVARUR" is a bonafide work of Ms.M.GOWRI, Registration number: E20BAR028, whocarried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basisof which a degree or award was conferred on the earlier occasion on their or any other candidate.

07/22 upervisor

Mr. I. ARULPRAKASH, B.Tech., MBA., Assistant Professor Department of Management Studies E G.S. Pillay Engineering College Nagapattinam - 611 002. Mobile: 99433 11192

Viva voice examination held on ______

Internal Examine

Director

Dr. R. KARTH!, HBA.M.Phil.,Ph.B. Director / MBA E.G.S. Pillay Engineering College, Negepattinam - 611 002.

Ga **Examin**

Certified that this project titled "A STUDY ON EMPLOYEE ABSENTEEISM IN GRANITE PRIVATE LIMITED AT SALEM " is a bonafide work of Mr.GUHAN.K,Registration number: E20BAR029, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of anyother project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director

Dr. R. KARTHI, Haa. M.Phil. Ph.J. Director / MBA E.G.S. Pillay Engineering College, Magupattinam - 611 002.

Viva voce examination held on____

7.2022 7.

Alstrow Internal Examine

Certified that this project titled "A STUDY ON EMPLOYEES SAFETY AND HEALTH IN TVARUR OILS AND FATS PRIVATE LIMITED AT THIRUVARUR" is a bonafide work of Ms. K.GUNA, Registration number: E20BAR030, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director

Dr. R. KARTHI, MBA. M.Phil. Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on _____ 07.07.2022

Internal

Certified that this project titled "A STUDY ON TRAINING AND DEVELOPMENT IN TECHGRADER SOLUTIONS AT WEST TAMBARAM" is a bonafide work of Mr.HARI PRASATH . R, Registration number: E20BAR031, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Dir

Dr. R. KARTHI, MBA., M. Phil., Ph.D. Director/MBA E.G.S. Pillay Engineering College, Nagapatrinam - 611 002.

Viva voce examination held on 07/07/2022

ExternalExan



Certificate that this project t title "A STUDY ON STRESS AND ITS IMPACTS AMONG EMPLOYEES IN RECRUITMENT INDUSTRY IN VHR SOLUTION PVT LTD, AT BANGALORE ". Is the bonafide work of Ms. S. HEMA, Registration Number : E20BAR032, who carried out the project work under my supervision. Certificate further, that to the best of my knowledge the work reported here in does not from part of any other project report or dissertation based on which a degree or award was confessed on an earlier occasion on their or any other candidate.

5.9 Supervisor

Dr. R. KARTHI, MBA. M.Phil 25 D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on : D7/07/2022

nal Examiner

External Examiner

Certified that this project titled "A STUDY ON EMPLOYEE PARTICIPATION IN MANAGEMENT DECISION MAKING IN PRAGATHI OILS AT MAYILADUTHURAI" is a bonafide work of Ms. A. HEMALATHA, Registration number: E20BAR033, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director and Supervisor

Dr. R. KARTHI, MBA. M. Phil. Ph.L. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 202.

Viva voce examination held on <u>DT. DT. 2022</u>

Examiner

Certified that this project titled "EMPLOYEES PERCEPTION IN RECRUITMENTI" is a bonafide work of Mr. INDHIARASAN.T, Registration number: E20BAR034, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, MBA. M Phil. Ch.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Internal Examiner

Viva voice examination held on 07/07/2022

Extern
Certified that this project titled "A STUDY ON CAPITAL BUDGETING IN TASTY FOODS AT NAGAPATTINAM" is a bonafide work of Mr. J. JASHAR AHAMED, Registration number: E20BAR036, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

PRAKASH, B.Tech., MBA.,

Supervisor Assistant Professor Department of Management Studies E.G.S. Pillay Engineering College Nagapattinam - 611 002. Mobile: 99433 11192

Director Dr. R. KARTHI, M84, M.Phil., Ph.B. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002,

Viva voce examination held on 07/07/2022

Internal Examiner

Certified that this project titled "A STUDY ON EMPLOYEE'S PERCEPTION ON AND SELECTION PROCESS INGRANITE PRIVATE LIMITED AT SALEM" is a bonafide work of MR.JEAN VERGHES J, Registration number: E20BAR037, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, MBA. M.Phil., Ph.D. Director / MBA E.G.S. Piliay Engineering College, Nagapattinam - 611 002.

Viva voice examination held on 07/07/2022

1. spron

Internal Examiner

Exami

Certified that this project titled "A STUDY ON EMPLOYEE ENGAGEMENT IN KHARIF CROP SOLUTION INDUSTRY AT THANJORE" Is a bonafide work of Mr. JONES ALEN.J, Registration number: E20BAR039, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Dr. R. KARTHI, MSA. M Phil Ph.D. Director / MBA E.G.S Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07.07.2022

kaminer

Flores **External Examiner**

Certified that this project titled "A STUDY ON EMPLOYEE ABSENTEEISM IN SHRIRAM CHITS INDIA PVT LTD IN NAGAPATTINAM" is a bonafide work of MR.KABILAN, Registration number: E20BAR040, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

upervisor

Dr. R. KARTHI, MBA. M. Phil., Ph.B. Director / MEA E.G.S. Pillay Engineering College Nagapattinam - 511 002.

Viva voce examination held on 07107/2022

rnal Examiner

nal Examiner

Certified that this project titled "A STUDY ON EMPLOYEE'S MOTIVATION IN TECH ZONE PVT.LTD. PERUNGALATHUR, CHENNAI" is a bonafide work of Mr.T. KARTHIK Registration number: E20BAR041 who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Al.P Supervisor

Viva voce examination held on $\mathcal{T}(\mathcal{T}_{22})$

Dr. R. KARTHI MRA N Phil Ph B. Diractor / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

External Exa

Certified that this project titled "A STUDY ON PERFORMANCE APPRAISAL SYSTEM OF MODERN PIPES LTD AT PALLADAM" is a bonafide work of Ms. K. KARTHIKA, Registration number: E20BAR042, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

erviso

Director

Dr. R. KARTHI, MBA. M. Phil. Ph.B. Director / MBA E.G.S. Piliay Engineering College, Hagapattinam - 611 002.

Viva voce examination held on 07/07/2022

al Examiner

External Examiner

Certified that this project titled "A STUDY ON EMPLOYEE RETENTION STRATEGY IN STANDARD ELECTRICAL PVT. LTD., COIMBATORE." is a bonafide work of Mr.KARUNAKARAN.N Registration number: E20BAR043, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director

DE R. KARTHE MRA M. Phil. Ph.D. Director/MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Supervisor

Viva voce examination held on 07/07/2022

Internal Examiner

[01]2022 ernatExami

Certified that this project titled "A STUDY ON EMPLOYEES' PERSPECTIVE TOWARDS E-RECRUITMENT IN REDINGTON PVT LTD, CHENNAI" is a bonafide work of Ms. R. KARUNYA, Registration number: E20BAR044, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director

Dr. R. KARTHI, MBA. M.Phil., Ph.D. Director / MBA E.G.S. Pilley Engineering College, Nagropoliticam - 611 902.

is her un the best

Viva voce examination held on 07.07.2022

Rognon

Internal Examiner

External Examiner 10 1000

Certified that this project titled "A STUDY ON EMPLOYEE MOTIVATION IN

AHASH NISSAN, THANJAVUR" is a bonafide work of Ms. R.KAVITHA, Registration number: E20BAR045, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, MBA., M.Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07(0712022

ernal Examiner

aminer

Certified that this project titled "A STUDY ON EMPLOYEE WORK LIF BALANCE IN TECH GRADER SOLUTIONS PVT. LTD. AT TAMBARAM WEST- CHENNAL." is a bonafide work of Mr.KAVIYARASAN.M

Registration number: E20BAR046, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier beccasion on their or any other candidate.

Or. R. KARTHI, NB4, M Phil. Phil. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on

Supervisor

oportion

Examiner

Certified that this project titled "A STUDY ON TRAINING AND DEVELOPMENT IN VELICHAM FINANCE PRIVATE LIMITED AT THIRUVARUR" is a bonafide work of Ms. R. KAVYA, Registration number: E20BAR047, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

ü

04/07/2022 Mr. I. ARULPRAKASH, B.Tech., MBA.,

Mr. 1. AROLI RARADI, Steam and Supervises tant Professor Department of Management Studies E.G.S. Pillay Engineering College Nagapattinam - 611 002. Mobile: 99433 11192

Viva voce examination held on 07. 07. 2022

ernal Examiner

Director Dr. R. KARTHI, HBA. M.Phil Phil Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Certified that this project titled "A STUDY ON RECRUITMENT AND SELECTION PROCEDURES IN BHARATHI WOMEN DEVELOPMENT CENTRE AT THIRUVARUR" is a bonafide work of Ms.S.KAYALVIZHI, Registration number: E20BAR048, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director Dr. R. KARTHI, HSA. M.Phil., Ph.D. Director / MB.A E.G.S. Pillay Engineering College, Nagapacinam - 611 002.

Viva voce examination held on 07.07. 2022

Internal Examiner

miner 12022 External H

Certified that this project titled "A STUDY ON EFFECTIVENESS OF RECRUITMENT AND SELECTION PROCESS IN TATA CONSULTANCY SERVICES" is a bonafide work of Ms.KIRUTHIKA, Registration number: E20BAR049, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

ervisor

Director

Dr. R. KARTHI, KBA. M.Phil., Ph.D. Director / MBA E.G.S. Filley, E.g. antring College, Nagaparty and - S11 002.

Viva voce examination held on 07.07.2022.

Internal Examiner

Examiner

Certified that this project titled "A STUDY ON ORGANISATION CULTURE IN SUPREME STEEL COMPANY AT TRICHY" is a bonafide work of Ms. R.MAHALAKSHMI, Registration number: E20BAR051, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director Dr. R. KARTHI, MBA., M.Phil., Ph.D. Director / MBA E.C.S. Pillay Engineering College, Nagapattinam - 811 002.

Viva voce examination held on 07.07. 2022

Internal Examin

External Examiner

Certified that this project titled "A STUDY ON EMPLOYEES JOB SATISFACTION IN ADITHIYA FERRO ALLOYS PVT.LTD., KARAIKAL" is a bonafide work of Mr. H. MOHAMED ABDUL BASITH, Registration number: E20BAR052, who carried out the research inder my supervision. Certified further, that to the best of my knowledge the work reported herein oes not form part of any other project report or dissertation on the basis of which a degree or ward was conferred on the earlier occasion on their or any other candidate.

1 Willion 10722

upervisor

Dirèctor Dr. R. KARTHI, MBA., M.Phil., Ph.D. Director/MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

iva voce examination held on 07/07/2022

External Examiner [R. Go WR1]

Certified that this project titled "A STUDY ON EFFECTIVENESS EMPLOYEE WELFARE MEASURES IN DECCAN PUMPS PRIVATE LIMITED AT COIMBATORE" is a bonafide work of Mr. Mohamed Azarudeen.S, Registration number: E20BAR053, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor Dr. S. CHANDRASEKAR, M.Com., MBA., M.Phil., NET(UGC), Ph.D., Professor Department of Management Studies E.G.S. Pillay Engineering College Nagppattinam - 611 002.

Viva voce examination held on 07/07/2022

Director

Dr. R. KARTHI, MBA. M.Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 811 602.

26/22 **External Examiner**

Certified that this project titled **"A STUDY ON TRAINING AND DEVELPOMENT IN SQUARE ONE INFOSOLUTIONS PVT. LTD., CHENNAL."** is a bonafide work of **Mr. MOHAMED EHSAN.J** Registration number: **E20BAR054**, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Directo

Dr. R. KARTHI, MEA., M. Phil., Ph. 8. Director / MBA E.G.S. Pillay Engineering College, Nugapathinam - 611 002.

Viva voce examination held on 7/7/2022

Internal Examiner

le rnal Examiner

Dertified that this project titled "A STUDY ON WORK LIFE BALANCE IN TOPIVAPPA FOODS PVT. LTD., CHENNAI." is a bonafide work of Mr. MOHAMED SIRAJUDEEN.A Registration number: E20BAR055, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

1 11 1/22

Supervisor

Mr.S.MOHAMED NAINA MARICAR, MBA., Assistant Professor Department of Management Studies E.G.S. Pillay Engineering College Nagapattinam - 611 002. Mobile: 79040 19933

Viva voce examination held on 07/07/2020

Dire

Bracieri MBA Diracieri MBA 2.0.3. Allay Englimening College, Nagapailinam - 811 002.

Internal Examiner

Mis Carati Eternal Examiner 71

Certified that this project titled "A STUDY ON PERFORMANCE APPRAISAL IN SUNTECH ENERGREEN PVT LTD" is a bonafide work of Mr.R.NANDA KUMAR, Registration number: E20BAR057, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate

11

Juster

Supervisor S. CHANDRASEKAR, M.Com., MBA., M.Phil., NET(UGC), Ph.D., Professor Department of Management Studies E.G.S. Pillay Engineering College Nagapattinam - 611 002.

5. **Internal Examiner**

Director

Dr. R. KARTHI, MSA. M.Phil., Ph.B. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 - 600

External

Certified that this project titled "A STUDY ON WORKLIFE BALANCE OF EMPLOYEES IN JYOTHY LABS LTD AT KARAIKAL" is a bonafide work of Ms. R. NANDHINI, Registration number: E20BAR058, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor & Director

Dr. R. KARTHI, MRL M. Phil. Phil. Director / MBA 5.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07.07.2022

Examiner

External Examiner 772

Certified that this project titled "A STUDY ON EMPLOYER AND EMPLOYEE RELATIONSHIP IN AMMAIYAR MILK DAIRY AT KARAIKAL" is a bonafide work of Ms. K. NESHIKA, Registration number: E20BAR059, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director & Supervisor

Dr. R. KARTHI, MBA., M.Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinarn - 611 002.

Viva voce examination held on 07-07-2022

22 **External Examiner**

ertified that this project titled "A STUDY ON TRAINING AND DEVELOPMENT IN HARATHI WOMENS DEVELOPMENT CENTER AT KATTUR" is a bonafide work of s. K. NILA OLI, Registration number : E20BAR060, who carried out the research under my supervision. rtified further, that to the best of my knowledge the work reported herein does not form part of any other oject report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on eir or any other candidate.

ii

Director

Dr. R. KARTHI, MRA. M. Phil. Ph.B. Director/MBA E.G.S. Pillay Engineering College, Nagapattinam - 011 002.

Viva voce examination held on 07-07-2022

22 Examiner Interna

External Examiner R. Gowel

Certified that this project titled "A STUDY ON STRESS MANAGEMENT SIVASAKTHI NUTRITION INDUSTRIES AT PERAMBALUR" is a bonafide work of Ms.R.Nisha Registration number: E20BAR061, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

18

Supervisor

Director

Dr. R. MARTHI, MBR., M. Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Negapattinam - 611 002.

Viva voce examination held on 07.07.2022

xaminer

External Examine

Certified that this project titled "A STUDY ON RECRUITMENT AND SELECTION IN OIL AND NATURAL GAS CORPORATION LIMITED AT KARAIKAL" is the bonafide work of Ms. K. NISHANTHINI, Registration number: E20BAR062, who carried out the research under under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project or dissertation on the basis of which a degree or award was conferred on earlier occasion on their or any other candidate.

isor

Director

Dr. R. KARTHI, MBA. M.Phil. Ph.B. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 811 002.

Viva voice examination held on 07/07/2022

Internal Examine

External Examine

ii

Certified that this project titled "A STUDY ON EMPLOYEE TRAINING AND DEVELOPMENT EFFECTIVENESS AT SRI VELLINGIRI ANDAVAR CERAMICS IN ERODE" is a bonafide work of Mr. D. NITHESH KUMAR, Registration Number: E20BAR063, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director Dr. R. KARTHI, MRA. M. Phil. Ph.D. Director / MBA E.G.S. Pillay Engineering College, Naganakham - 511-662.

Viva voce examination held on 07/07/22

Examiner

External Examiner

Certified that this project titled **"A STUDY ON EMPLOYEE HEALTH AND SAFETY IN OPG METAL PVT.LTD, MAYILADUTHURAI"** is a bonafide work of **Mr.NITHISH.V**, Registration number: **E20BAR064**, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor Director Dr. R. KARSTAL, MAANTERI Ph. Director (ALEA C.C.S. Gillow-Roinaeriag College, Naganasilasin 1411.002.

Viva voce examination held on 070722

Internal Examine

External Examiner [R. GOWEI

Certified that this project titled "A STUDY ON TRAINING AND DEVELOPMENT IN KOTHARI SUGARS AND CHEMICALS LTD AT ARIYALUR is a bonafide work of Ms.R.PARAMESWARI, Registration number: E20BAR066, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Dr. R. KARTHI, MSA. M.Phil. Ph.O. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 511 002.

Viva voce examination held on 01/07 12022

Internal Examiner

External Examiner

Certified that this project report titled "A STUDY ON WORKING CAPITAL MANAGEMENT AND RATIO ANALYSIS IN SRI LAKSHMI NARAYANA CO-OPERTATIVE URBAN BANK LTD AT THIRUVARUR." is the bonafide work of Ms. PRADEEPA.R Registration Number: E20BAR068 who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein dose not form part of any other summer training report on the basis of which a degree or award was conferred on an occasion on their or any other candidate.

i

Supervisor

Director Dr. R. KARTHI, MBA. M. Phil. Ph D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Internal viva voice examination held on _7.07.2022

ernal Examiner

P. T. Internal Examiner.

NIVER

BONAFIDE CERTIFICATE

Certified that this project titled **"A STUDY ON RECRUITMENT AND SELECTION PROCESS TOWARDS KOTHARI SUGARS AND CHEMICALS LTD AT ARIYALUR DISTRICT** " is a bonafide work of **Ms. R. PRASANNADEVI**, Registration number: **E20BAR069**, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

ector

Dr. R. KARTHI, M34, M Phil Phil Director / MBA E.G.S. Pillay Engineering College, Nagapatilities - 611 002.

Viva voce examination held on 07/07 / 2022

Examiner

visor

Certified that this project titled "A STUDY ON EMPLOYEE ENGAGEMENT IN PRAGATHI OIL AT MAYILADUTHURAI" is a bonafide work of Ms. P. PRIYADHARSHINI, Registration number: E20BAR071, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director

Drs. HARTHI, MBA. M. Phil. Ph.D. Director / MBA LES Play Engineering College, Normalinam - 611 664.

Viva voce examination held on _______

Examiner

717/22 **External Examiner**

Certified that this project titled "A STUDY ON EMPLOYEE TRAING AND DEVELOPMENT FORTIS HEALTH CARE LTD AT BANGALORE" is a bonafide work of Mr.RAJESH S ,Registration number: E20BAR072, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Mr.S.MOHAMED NAINA MARICAR, MBA. Assistant Professor Department of Management Studies E.G.S. Pillay Engineering College Nagapattinam - 611 002. Mobile: 79040 19933

Dr. R. KARTHI, MMA.M.Phil.,Ph.D. Director / MB/A E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07.07.2022

Internal Examiner

External

Certified that this project titled "A STUDY ON EMPLOYEE WORK LIFE BALANCE OF EMPLOYEES IN MASTORWIN PHARMACEUTICAL AT CHENNAI" is a bonafide work of Ms.RAJESWARI, Registration number: E20BAR073, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

rector

Dr. R. KARTHI, MSA. M. Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapatiliness - 611 002.

Viva voce examination held on DI . 07 . 2029,

Internal Examiner

External Examiner 712/22 CDA: M'S. GAYOTI+RC)

Certified that this project titled "A STUDY ON RECRUITMENT AND SELECTION PROCESS IN VHR SOLUTIONS PRIVATE LIMITED, BANGALORE" is a bonafide work of Mr. RAMESH T, Registration number: E20BAR074, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, MBA. M. Phil. Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Vivavoceexaminationheldon 07-07-2022

CV InternalExaminer

Certified that this project titled "A STUDY ON STRESS (PROFICIENT) MANAGEMENT AMONG PRO KNITS PRIVATE LTD AT TIRUPUR" is a bonafide work of Ms. R. RAMKUMAR, Registration number: E20BAR075, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI HRA M. Mill, 25 D. Director: MBA E.G.S. Pilley Engineering College, Negapattinam - 511 002.

Viva voce examination held on 07/07/22

1 Also Internal Examiner

His herall External Examiner 7/2

Certified that this project titled "A STUDY ON EMPLOYEE MOTIVATION SUNRISE KNITTING MILLS AT TIRUPUR" is a bonafide work of MR. S. RANJITHKUMAR Registration number: E20BAR076, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

irector

Dr. R. KARTHI, MBR. M. Thill M.L. Director / MGA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voice examination held on 07.07.2022

Internal Examiner

+ 17 /22 **External Examiner**

Certified that this project titled "A STUDY ON EMPLOYEE WELFARE IN PRISM JOHNSON LIMITED, KARAIKAL" is a bonafide work of Ms.RENISHA .R,Registration number: E20BAR077, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor /Director

Dr. R. KARTHI, MBA., M.Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voice examination held on _____

07/ 07/2022

Internal Examiner
rtified that this project titled "A STUDY ON RECRUITMET AND SELECTIONN PROCESS VELICHAM FINANCE PRIVATE LIMITED AT THIRUVARUR" is a bonafide work of s. V. SANGAVI, Registration number: E20BAR078, who carried out the research under my pervision. Certified further, that to the best of my knowledge the work reported herein does not rm part of any other project report or dissertation on the basis of which a degree or award was inferred on the earlier occasion on their or any other candidate.

Director

Dr. R. KARTHI, MBA. M. Phill, Phill. Director / MBA E.G.S. Pillay Engineering College, Nagapatinam - 611 602.

Viva voce examination held on

07.07.2022

Internal Examiner

0

R. Gowen

Certified that this project titled "A STUDY ON TRAINING AND DEVELOPMENT OF THE EMPLOYEE IN PURE & CURE AQUAA FOODS AT TRICHY" is a bonafide work of Ms. R.SANGEETHA, Registration number: E20BAR079, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director

Dr. R. KARTHI, MBA. M Phil. Ph D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 511 002.

Viva voce examination held on 7.7.22

Internal Ex

Certified that this project titled "A STUDY ON EMPLOYEE ENGAGEMENT IN NATIONAL INSTITUTE OF INFORMATION TECHNOLOGY AT CHENNAI" Is a bonafide work of Mr. SANKARANARAYANAN, Registration number: E20BAR080, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

visor

Director Dr. R. KARTHI, MBA..M.Phil..Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07.07.2022

Internal Examiner

Exter

Certified that this project titled "A STUDY ON EMPLOYEE ABSENTEEISM IN PRAVEEN CHEM INDUSTRY AT PVT. LTD., KARAIKAL" is a bonafide work of Mr. SHAIK ABDULLA.A Registration number: E20BAR081, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, MBA. M. Phil. Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07/07/8022

nternal Examiner

717122 xternal Examiner

ii

Certified that this project titled A STUDY ON EMPLOYEE MOTIVATION IN

MARUTHI

SERVCE mates, Chennai is a bonafide work of Ms. M. Shalini, Registration number: E20BAR082, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

upervisor

Director

ST. & KARTHI, HPA. M. Phil. Ph. D. Girector / MEA E.G.S. Pillay Engineerith College Nagapattinam - 611 wild

Viva voce examination held on 7.07.2022

Internal Examiner

2/1/2 External Examiner

Certified that this project titled **"A STUDY ON EMPLOYEE MOTIVATION IN PRANAR OIL AND CHEMICAL PVT. LTD., COIMBATORE."** is a bonafide work of **Mr. SHAMEER AHMED.S** Registration number: **E20BAR083**, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director

Dr. R. KARTHI, MBA. M.Phil. Ph 8. Director / MBA E.G.S. Pillay Engineering College.

Mananattiruma - 611 002.

Viva voce examination held on 07.07. 2022

Internal Examine

Supervisor

External Examiner

Certified that this project titled "A STUDY ON EMPLOYEE'S SATISFACTION IN INFOSYS SOLUTION AT CHENNAI" is a bonafide work of MR.SHANMUGARAJ R, Registration number: E20BAR084, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. H. A. F. H. M. M. Phil., Ph. D. Director / MBA E.G.S. Pillay Engineering College,

Nagapattinam - 611 002.

Viva voce examination held on 7. 7. 2022

1 .

Interna

External Examiner 7 CDR H.S. GAYATHRY A.V.C. Willy & Eng

Certified that this project titled "A STUDY ON HR POLICY AND EFFECTIVE STRATEGY IN GAIL INDIA LIMITED AT KARAIKAL" is a bonafide work of Ms. k .SIVASANKARI Registration number: E20BAR085, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

11.

Supervision Mr. S. MOHAMED NAINA MARICAR, MBA., Assistant Professor Department of Management Studies E.G.S. Pillay Engineering College Nagapattinam - 611 002. Mobile: 79040 19933

irector

Dr. R. KARTHI, MBA. M Phil Sh D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07/07/2022

Internal Examiner

Certified that this project titled "A STUDY ON EMPLOTEE RELATIONSHIP MANAGEMENT" is a bonafide work of Ms. A.SOWNTHARIYA, Registration number: E20BAR086, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

ii

No Supervisor

Director

Director Dr. R. KARTHI, MBA. M.Phil. Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 511 002.

Viva voce examination held on 07.07. 2022

ernal Examiner

aminer

Certified that this project titled "A STUDY ON EMPLOYEE'S PERCEPTION ABOUT ORGANIZATIONAL HR PRACTICES AND CULTURE IN VHR SOLUTION PVT LTD AT BANGALORE" is a bonafide work of Ms.SRI ROSHIYA, Registration number: E20BAR087, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, MBA. M.Phil., Ph.D. Director / MBA E.G.S. Pilwy Engineering College, Negropatilinam - 611 002.

Viva voce examination held on 07.07.2022

External Examiner

Certified that this project titled "A STUDY ON LABOR WELFARE IN OIL AND NATURAL GAS CORPORATION LIMITED NERAVY AT KARAIKAL" is a bonafide work of M.SRIDHAR, Registration number: E20BAR088, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

ii

Super sor

Director

Dr. R. KARTHI, MBA. M.Phil. Ph.B. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 511 002.

Viva voce examination held on 07-07-2022

Examiner

External Examiner

Certified that this project titled "A STUDY ON EMPLOYEE WELFARE MEASURES IN MAYAVARAM PRAGATHI OILS is a Bonafide work of Ms. SRIMATHI, Registration number: E20BAR089, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.



Director

Dr. R. KARTHI, M8A. M.Phil Ph 0. Director / M8A E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on ____Oit、 01、 2022

103/2022

Internal Examiner

External Examiner 717 CDR M.S. GAYAMRS

Certified that this project titled "CHALLENAGES FACED BY THE MSME WHILE COVID CRISIS" is a bonafide work of Ms. R. SRIRAMPRAKASH Registration number: E20BAR090, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

rembusch apervision

Dr. S. CHANDRASEKAR, M.Com., MBA., M.Phil., NET(UGC), Ph.D., Professor Department of Management Studies E.G.S. Pillay Engineering College Nagapattinam - 611 002.

Director Dr. R. KARTHI, MBA. M.Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on _____ OT. 07. 2022

nal Examiner

External Examiner

ii

Certified that this project titled "A STUDY ON JOB SATISFACTION AMONG EMPLOYEES IN PRO KNITS PVT LTD., AT TIRUPPUR, Dt" is a bonafide work of Ms. M. SRI SUBRAMANIYAN, Registration number: E20BAR091, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, MBA. M.Phil.,Ph.D. Director/MBA E.G.S. Pilizy Engineering College, Magapatrician - 611 002.

Viva voce examination held on 07/07/2022

Internal Examiner

M. S. Conjahn External Examiner 7/20 (PA: Higs GAMATORS

Certified that this project titled "A STUDY ON EMPLOYEES JOB SATISFACTION WITH SPECIAL REFERENCE IN SUNRISING MILLS AT TIRUPUR. is a bonafide work of MR.SUBRAMANIYAN. G Registration number: E20BAR093, who carried out the research under my upervision. Certified further, that to the best of my knowledge the work reported here on does not from part of ny other project report or dissertation on the basic of which a degree or award was conferred on the earlier ccasion on their or any other candidate.

Director

Dr. R. KARTHI, MBA.M.Phil.,Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voice examination held on 07 - 07 - 22

11-122 Internal Examiner

Supervisor

Certified that this project titled "A STUDY ON PERFORMANCE APPRAISAL

IN HIGH Q SOLUTION PVT LTD AT THANJAVUR" is a bonafide work of Ms.S.SUVETHA, Registration number: E20BAR094, who carried out the research under my supervision. Certified Further, that to the best of my knowledge the work reported herein does not form part of any other Project report or dissertation on the basis of which a degree or award was conferred on the earlier Occasion on their or any other candidate.

S. Supervisor

Director

Dr. R. KARTHI, MBA. M. Phil. St. B. Director / MBA E.G.S. Pillay Engineering Colora, Nagapattinam - 611 002.

Viva voce examination held on 07.07.2022

Certified that this project titled "A STUDY OF EMPLOYEE RELATIOSHIP MANAGEMENT AT ITEL COMPUTERS BUSINESSS SOLUTIONS IN THIRUVARUR" is a bonafide work of Miss. B. SWETHA, Registration Number: E20BAR095, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, MBA. M. Phil. Ph. B. Director / MBA E.G.S. Pillay Engineering College, Nagapattinam - 611 002.

Viva voce examination held on 07/07/2022

l Examiner

External Examiner

Certified that this project titled "A STUDY ON TRAINING AND DEVELOPMENT IN AMIRTHAM INDUSTRIES AT THANJAVUR is a bonafide work of Mr.THANUSHU.L, Registration number: E20BAR096, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

C.A Supervisor

Director

Dr. R. KARTHI, MBA., M PHIL PE 9. Director / MBA E.G.S. Pillay Engineering Collage, Nagapattinam - C11 002.

Vivavoceexaminationheldon 07/07/2022

ternalExaminer

ExternalExaminer

II

Certified that this project titled "A STUDY ON EFFECTIVENESS OF E-RECRUITMENT AND SELECTION PROCESS IN VHR SOLUTIONS PRIVATE LIMITED, BANGALORE" is a bonafide work of Mr. THIRUMURUGAN T, Registration number: E20BAR097, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Jusekus CHANDRASEKAR, Supervisor S M.Com., MBA., M.Phil., NET(UGC), Ph.D., Professor Department of Management Studies E.G.S. Pillay Engineering College Nagapattinam - 611 002.

Director

Dr. R. KARTHI, MBA.M.Phil.,Ph.D. Director/MBA E.G.S. Pillay Engineering College, Negapatilnam - 611 002.

External Exami

Viva voce examination held on 07/07/2022

Internal Examiner

ii

Certified that this project titled "A STUDY ON EMPLOYEE'S SATISFACTION IN KMR INDUSTRIES, AT PERUNDURAL." is a bonafide work of Ms. A. UDHAYA KUMAR, Registration number: E20BAR098, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

ii

Supervisor

Viva voce examination held on 07/07/2022

nternal Examin

Director

Dr. W. MARFINE MOR. I MIL PL S. Dractar/198556 E.O.S. Pillay Engineering College, Nagapathem - 611 002.

External Examiner

Certified that this project titled "A STUDY ON EMPLOYEES PERFORMANCE APPRAISAL SYSTEM IN PRISM JOHNSON LIMITED, KARAIKAL" is a bonafide work of Ms. G.VARSHINI, Registration number: E20BAR100, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director

Dr. R. KARTHI, HBA. M.Phil Ph D. Director / MBA E.G.S. Pilley Engineering Coloria, Nagapattinam - 611 004

Viva voce examination held on DT-0T-2022

Internal Examiner

07/2022

Certified that this project titled "A STUDY ON ORGANIZATIONAL SWOT ANALYSIS OF HRM AT RAY TECHNOLOGY AND BUSINESS SOLUTIONS IN THIRUVARUR" is a bonafide work of Mr. N. VENGADESHWARAN, Registration Number: E20BAR101, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Super

Dr. R. KARTHI, MSA. M. Phil., Ph D. Director / MBA E.G.S. Piliay Engineering College, Negapatrinam - 511 002.

Viva voce examination held on 07/07/2022

Internal Examine

Certified that this project titled "A STUDY ON FINANCIAL STATEMENT ANALYSIS AT AMIRTHAM INDUSTRIES, THANJAVUR" is a bonafide work of Mr. VIGNESH P, Registration number: E20BAR102, who carried out the research under my supervision. Certifiedfurther, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

Director Dr. R. KARTHI, MBA. M.Phil., Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagepatrinam - 611 002.

Viva voce examination held on 07-07-2022

58 Internal Examiner

mine External

Certified that this project titled "A STUDY ON EMPLOYEES LEADERSHIP STYLES ON THE TECH ZONE PRIVATE LIMITED Chennai" is a bonafide work of Ms.S.VIGNESH Registration number: E20BAR013 who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Supervisor

ARTHI, MBA. M. Phil Ph Dr. R. K Director/MBA E.G.S. Pillay Engineering Nagapottinam - 611

Viva voce examination held on 07.07.2022

apron Internal Examiner

Certified that this project titled **"A STUDY ON SELECTION AND RECRUITMENT FORTIS HEALTH CARE MANAGEMENT-NAGARBHAVI,BANGALORE** work of **MR.GVIMALKUMAR** Registration number: **E20BAR105**, who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on the earlier occasion on their or any other candidate.

Director

Dr. R. KARTHI, HSA. M.Phil. Ph.D. Director / MBA E.G.S. Pillay Engineering College, Nagopartheam - 851 002.

Viva voce examination held on 07.07.2022



E.G.S. PILLAY ENGINEERING COLLEG (Autonomous)

Nagapattinam - 611 002



Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi An ISO 9001:2015 Certified Institution www.egspec.org DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "BUS LOCATION TRACKING AND PASSENGER COMPLAINT SYSTEM" is the bonafide work of Ms.V.ARAVINDA (E18CAR001) who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

SUPERV



Dr.H. MANYFITH, MCA., MPHIMAND., Professor / HOD

Department of MCA E.G.S.Pillay Engineering College, (Autonomous)

Submitted to paper and Viva Examination held on D3: 04.2027 Nagapattinam.

(Internal Examiner) 3/4/2)

(External Examiner)





E.G.S PILLAY ENGINEERING COLLEGE (AUTONOMOUS) NAGAPATTINAM – 611 002

Provisionally Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi An ISO 9001:2015 Certified Institution www.egspec.org DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "REGULARITY OF STINT DIRECTORATE" is the bonafide work of Ms.BRUNDHA.S (E18CAR002) who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which degree or award was conferred on an earlier occasion on this or any other candidare.J. VANITHA, MCA., M.Phil., Ph.D.,

SUPERVISOR

Professor / HOD Department of MCA E.G.S.Pillay Engineering College, (Autonomous) HEAD OF THE DEPARTMENT

Submitted to Project and Viva Examination held on 03.104.12021

dineer

Internal Examiner

External Examiner



E.G.S. PILLAY ENGINEERING COLLEGE (Autonomous) Nagapattinam – 611 002



Provisionally Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi An ISO 9001:2015 Certified Institution

www.egspec.org

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "MULTI STORYED APARTMENT MANAGEMENT SYSTEM" is the bonafide work of MS. ELAMPARVATHI E (Reg. E18CAR003) who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

SUPERVISOR

Dr. J. VANITHA, MCA., M.Phit., Ph.D., Professor / HOD Department of MCA E.G.S.Pillay Engineering College, (Autonomous) Nagapattinam. HEAD OF THE DEPARTMENT

Submitted to project and Viva Examination held on . 0.3. . 04 .: 2021

quattin

(Internal Examiner)

(External Examiner)





E.G.S PILLAY ENGINEERING COLLEGE (AUTONOMOUS) NAGAPATTINAM - 611 002

Provisionally Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi An ISO 9001:2015 Certified Institution www.egspec.org DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "THE COLLECTIVE TRADE TYPE REVOLUTION USING QUINTUPLE ECOLOGY" is the bonafide work of Ms.GEETHA.S (E18CAR004) who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this

or any other candidate.

SUPE



Dr. J. VANITHA, MCA., M. Phil., Ph.D., Professor / HOD Department of MCA E.G.S.Pillay Engineering Co loge (Autors)

HEAD OF THE DEPARTMENT

Submitted to Project and Viva Examination held on .03.10.4.1202)

infiner Internat

External Examiner





E.G.S. PILLAY ENGINEERING COLLEGE (AUTONOMOUS) NAGAPATTINAM – 611 002

Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi An ISO 9001:2015 Certified Institution Phone No: 04365-251112, 251114, Fax No: 04365-251114, <u>www.egspec.org</u>

DEPARTMENT OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "PRIVACY PRESERVING VOTING SCHEME BASED ON BLOCK CHAIN TECHNOLOGY " is the bonafide work of JAFRIN J Reg.No.E18CAR005 who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

sor

(Internal Examiner)

Submitted to Project and Viva Examination held on 03.04.2021

Head of the Department

Department of E.G.S.Pillay Engineering College, (Automotion), Nagapattinam.





ii

E.G.S PILLAY ENGINEERING COLLEGE (AUTONOMOUS)

NAGAPATTINAM -611002

Accredited by NBA| Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai Approved by AICTE, New Delhi An ISO 9001:1015 Certified Instituion

www.egspec.org

(AN ISO 9001-2015 CERTIFIED INSTITUTION)

DEPARTMENT OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "ONLINE EMPLOYEE SERVICE BOOK MANAGEMENT SYSTEM" is the bonafide work of Ms. JANISHA M (E18CAR006) who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this qinee or any other candidate.

nal

14121 Supervisor

Submitted to Project and Viva Examination held on 0.3. 94:2021

(Internal Examiner)

Dr. J.VA rtment Phil., Ph.D., Professor / HOD Department of MCA College, (Autonomous) 31421 (External Examiner)



E.G.S. PILLAY ENGINEERING COLLEGE, (Autonomous) Nagapattinam – 611 002



Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi An ISO 9001:2015 Certified Institution

www.egspec.org DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "SCRUTINIZING THE DISEASE BASED ON OMICS" is the bonafide work of Ms. L .NANDHINI (Reg. No. E18CAR008) who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HEAD OF THE DEPARTMENT

Submitted to project and Viva Examination held on .0.3/04/21.

(Internal Examiner)

Dr. J. VANITHA, MCA., M. Phil., Ph.D., Professor / HOD Department of MCA E.G.S.Pillay Engineering College. Mi gapettina (External Examine





E.G.S PILLAY ENGINEERING COLLEGE (AUTONAMOUS) NAGAPATTINAM – 611 002

Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi an ISO 9001:2015 Certified Institution www.egspec.org DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "MENTORING SYSTEM FOR ADVANCEMENT OF INSTITUTIONAL AND EDUCATIONAL SYSTEM" is the bonafide work of Mrs. NIVEGEETHA E (E18CAR009) who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.





HEAD OF THE DEPARTMENT Dr. J. VANITHA, MCA., M.Phil., Ph.D., Professor / HOD Department of MCA AG.S.Pillay Engineering College, (Autonomous

Submitted to Project and Viva Examination held on 03:04:04.04 G.S.Pillay Engineering College. (Autonomous) Nagapattinam.

miner

External Examine



E.G.S. PILLAY ENGINEERING COLLEGE (Autonomous) Nagapattinam - 617 002



Provisionally Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi An

> ISO 9001:2015 Certified Institution www.egspec.org

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "ENTERPRISE RESOURCE PLANNING FOR EGS PILLAY ENGINEERING COLLEGE "is the bonafide work of Mr. SARANRAJ M (E1CAR010) who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this

or any other candidate.

Supervisor

Solution and a state of the sta

Dr. J. VANITHA. MODAL PROTESSOR / HOD

Submitted to Project and Viva Examination held on 03: 04.21. ESSPillay Engineering College, (Autonomous) Nagapattinam.

painer) (Into

(External Examiner





ii

E.G.S PILLAY ENGINEERING COLLEGE (AUTONAMOUS) NAGAPATTINAM – 611 002

Provisionally Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi An ISO 9001:2015 Certified Institution www.egspec.org DEPARTMENT OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "OWN PICTURE BASED GRAPHICAL PASSWOF FOR SECURE ATM ACCESS WITH HYBRID PIN" is the bonafide work of SATHIYAPRIYA (E18CAR011) who carried out the project under my supervision. Certified further, that to the best of n knowledge the work reported here in does not form part of any other project report or dissertation on t basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

RVISOR HEAD OF THE DEPARTMENT

Submitted to Project and Viva Examination held on .03 04 20 21

(Internal Ex miner

(External

Dr. J. VANITHA, MCA. M Phil DL D Professor Departmen

Naga

E.G.S.Pillay Engineerin

ii





E.G.S PILLAY ENGINEERING COLLEGE (AUTONOMOUS) NAGAPATTINAM - 611 002

Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi An ISO 9001:2015 Certified Institution www.egspec.org DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "ASPECT BASED LOGICAL ACCESS OVER CONCEAL OUTSOURCED INPUT" is the bonafide work of Ms.SEETHA.S (E18CAR012) who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this DeA. M. Phil. Ph.D.

Dr. J. VANITRA

Professor / HOD Department of MCA E.G.S.Pillay Engineering College, (Autonomous) HEAD OF THE DEPARTMENT

or any other candidate.



Submitted to Project and Viva Examination held on .0.3.04/2021

Internal


E.G.S. PILLAY ENGINEERING COLLEGE (Autonomous)

Nagapattinam - 611 002



ii

Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi An ISO 9001:2015 Certified Institution www.egspec.org DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "ONLINE HELPLINE PROJECT FOR AGRICULTURE PEOPLE "is the bonafide work of Mr. R. SIVASAKHTIVEL (E18CAR013) who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.



HEAD OF Phil. Ph.D., Professor / HOD **Department of MCA** Submitted to project and Viva Examination held on 3/41.2021 Nagapattinam.

(Internal Ex

(External Examine





E.G.S PILLAY ENGINEERING COLLEGE (AUTONAMOUS) NAGAPATTINAM - 611 002

Provisionally Accredited by NBA | Accredited by NAAC with 'A' Grade Affiliated to Anna University, Chennai | Approved by AICTE, New Delhi An ISO 9001:2015 Certified Institution www.egspec.org DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

BONAFIDE CERTIFICATE

Certified that this project report titled "A ONLINE TAILORING MANAGEMENT SYSTEM" is the bonafide work of Ms.M.SUVATHIKA (E18CAR014) who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Engineering Collaga

IE DEPARTMENT

Dr. J. VANITHA, MCA., M.Phil., Ph.D., Professor / HOD Department of MCA E.G.S.Pillay Engineering College, (Autonomous) 2001 Nagapattinam.

0

External Examine

niner