



Thiruthangal Nadar College  
Knowledge is Power

NAAC CYCLE III – AQAR

2.3-RESEARCH

2.3.1 – STUDENT CENTRIC METHODS

Year: 2023-2024

## APPROVAL OF Ph. D RESEARCH SUPERVISORS

Dr.N. SanthanaVadivu, Associate Professor, PG & Research Department of Commerce, Dr.R. Bhuvaneshwaran, Assistant Professor, Thiruthangal Nadar college has been granted to supervise the Research scholars leading to award of Ph.D Degree in Commerce by University of Madras.

Grams: UNIVERSITY, Madras / Phone: 25361055 /25399402 /25399778 / Fax:91-44-25360749 It is requested that all communications should be addressed to The Registrar, University of Madras and not to any Person by name.



**UNIVERSITY OF MADRAS**  
(Established under the Act of Incorporation XXVII of 1857 -  
Madras University Act) [State University]  
Centenary Buildings, Chepauk, Chennai 600 005.



No: RPI/ Guideship/Ph.D./Approval/2023/ 1187

Date: 20 DEC 2023

From  
THE REGISTRAR  
University of Madras

To  
Dr. N.Santhana Vadivu,  
[DOB: 49 years, 14.01.1974]  
Associate Professor,  
Department of Commerce,  
Thiruthangal Nadar College,  
Selavayal, Chennai - 600051

Madam,

Sub: Recognition as a Supervisor to guide Ph.D. scholars- Reg.  
Ref: Your Application No. 20210800054  
\*\*\*\*\*

With reference to the above, I am, to inform you that permission has been granted to supervise the research scholars leading to award of Ph.D degree in Commerce subject to the conditions mentioned in overleaf vide chapter 3 of Research Regulations 2021.

Yours faithfully,

REGISTRAR



Thiruthangal Nadar College  
Knowledge is Power

NAAC CYCLE III – AQAR

2.3.1 – STUDENT CENTRIC METHODS

2.3-RESEARCH

Year: 2023-2024



# UNIVERSITY OF MADRAS

(Established under the Act of Incorporation XXVII of 1857 -  
Madras University Act) [State University]  
Centenary Buildings, Chepauk, Chennai 600 005.



No: RP/ Guideship/Ph.D./Approval/2023/ 1186

Date: 20 DEC 2023

From  
THE REGISTRAR  
University of Madras

✓ To  
Dr. R. Bhuvaneshwaran,  
[DOB: 40 years, 25.07.1982]  
Assistant Professor,  
Department of Commerce,  
Thiruthangal Nadar College,  
Selavayal, Chennai - 600051

Sir,

Sub: Recognition as a Supervisor to guide Ph.D. scholars- Reg.

Ref: Your Application No. 20190100016

\*\*\*\*\*

With reference to the above, I am, to inform you that permission has been granted to supervise the research scholars leading to award of Ph.D degree in Commerce subject to the conditions mentioned in overleaf vide chapter 3 of Research Regulations 2021.

Yours faithfully,

REGISTRAR



**PG DEPARTMENT OF COMPUTER SCIENCE**

**NATIONAL CONFERENCE ON MACHINE LEARNING & ARTIFICIAL INTELLIGENCE**

**DATE: 04.08.2023**

**Resource Person: Dr. V. Uma Devi, Principal, New Prince Shri Bhavani Arts & Science College**

**National Speakers- Dr. John Abraham and Dr. Sathees Kumaran**







### SCHOOL OF COMMERCE

## INTER NATIONAL CONFERENCE ON “TRANSFORMATION OF BANKING SECTOR – BREAKTHROUGH INNOVATION, CREATIVITY & LEADING CHALLENGES “

**DATE: 26.08.2023**

**Resource Person: Dr. P. Pandian, Senior Manager, Corporate IT ,Levi Strauss, USA. Dr.Marlene Morais, Dr. P.Pandian, Dr.G.Geetha, Dr. Maria Inigo &Dr.V.Senthil Kumaran**





## SCHOOL OF HUMANITIES

### NATIONAL CONFERENCE

“Multidisciplinary Culture in Social Sciences, Language and Literature”

**DATE: 04.03.2024**

**Resource Person: Dr. S.S Sundaram Prof & Head Department of Indian History  
University of Madras**

**National Speakers: Dr. T. Vishnu Kumaran Head Department of Tamil Language and  
Translation Studies, Dravidian University**

**Chair Persons: Dr. M. Mohana Krishnan principal Agarsen College and Dr. Faisal  
Melangadi Head Department of Criminology and criminal Justice Science**





### TNC-INCUBATION CELL & IQAC

### DEMONSTRATION ON RESEARCH PROTOTYPES

Event Date: 09.10.2023





**Faculty Development Programme  
on  
"Quantitative and Qualitative Research Methodology"**

**Date: 02-01-2024**

**Resource Person: Dr. Geetha Suresh, a professor at the University of Louisville, Kentucky, USA,**







Thiruthangal Nadar College  
Knowledge is Power

NAAC CYCLE III – AQAR

2.3-RESEARCH

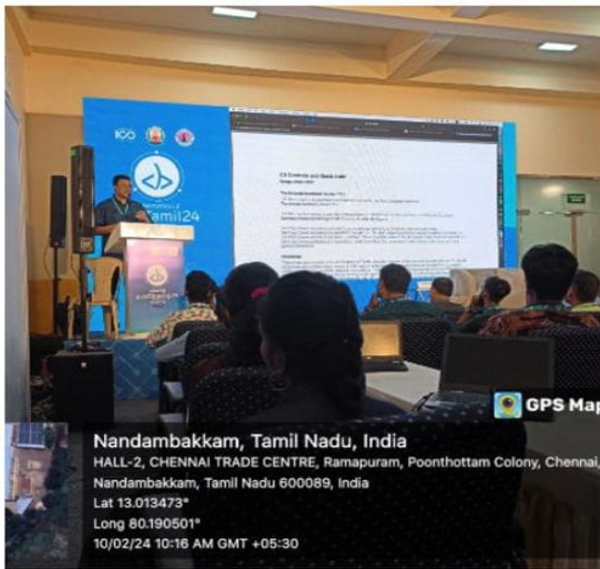
2.3.1 – STUDENT CENTRIC METHODS

Year: 2023-2024

### International Kani Tamil24 Conference

Event Date: 10.02.2024

Participants: PG Department of Computer Science and Software Applications students



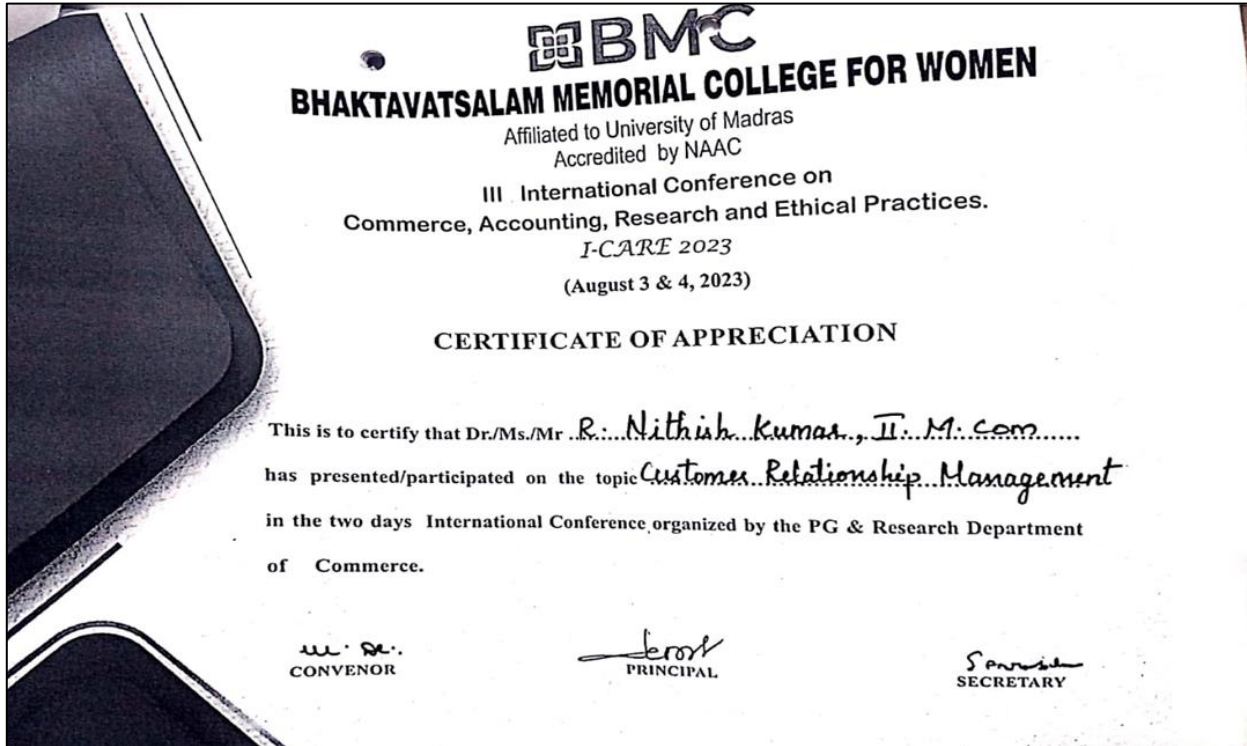
Nandambakkam, Tamil Nadu, India  
HALL-2, CHENNAI TRADE CENTRE, Ramapuram, Poonthottam Colony, Chennai,  
Nandambakkam, Tamil Nadu 600089, India  
Lat 13.013473°  
Long 80.190501°  
10/02/24 10:16 AM GMT +05:30

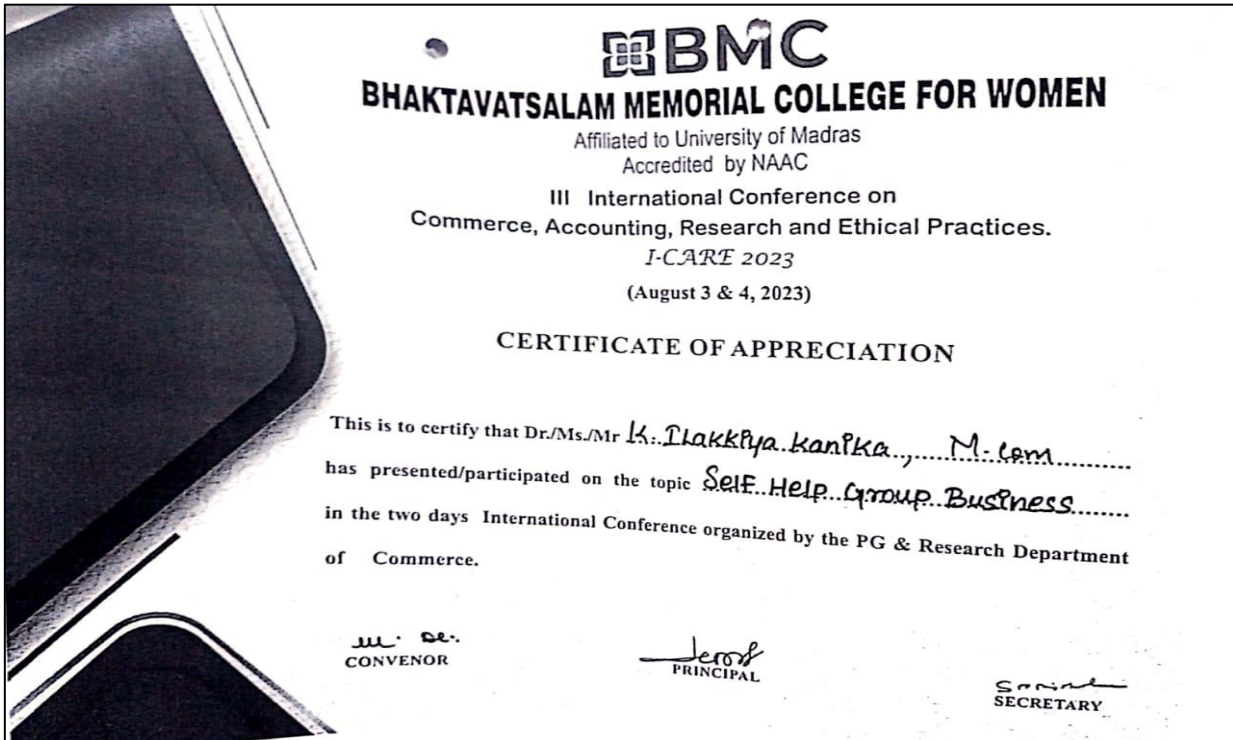
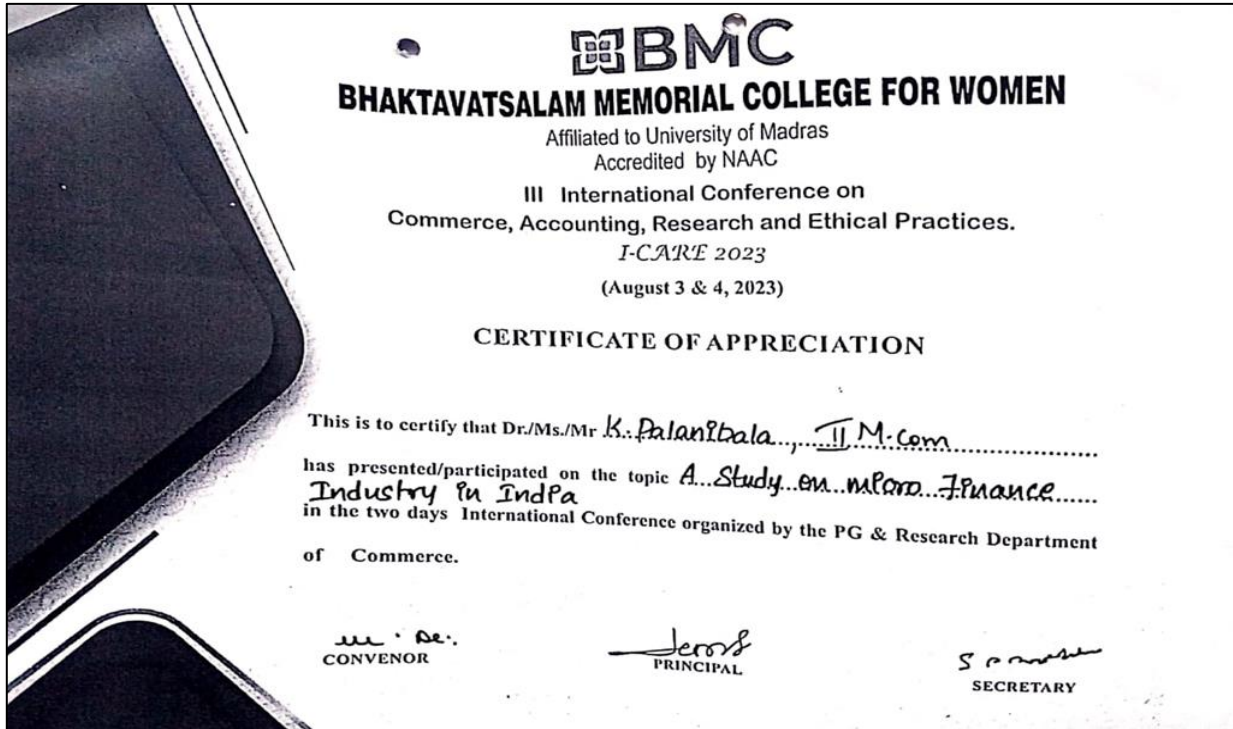
Nandambakkam, Tamil Nadu, India  
2589+R8H, IDPL Colony, Tulasisingapuram, Nandambakkam, Chennai, Tamil Nadu  
600089, India  
Lat 13.016864°  
Long 80.186983°





### Paper Presentation-Student















Thiruthangal Nadar College  
Knowledge is Power

NAAC CYCLE III – AQAR

2.3.1 – STUDENT CENTRIC METHODS

2.3-RESEARCH

Year: 2023-2024



**SAVEETHA**  
COLLEGE OF LIBERAL ARTS & SCIENCES



International Conference on  
“Information and Business Intelligence” ICIBI -2024

### Certificate of Participation

This is to certify that Dr/ Mr /Ms DHANUSH KUMAR R  
of THIRUTHANGAL NADAR COLLEGE has Participated / Presented a paper Titled  
VIDEO USING CLASSIFICATION TECHNIQUES in the “International Conference on “Information and  
Business Intelligence”(ICIBI 2024) organized by the Department of Compter Applications, Saveetha College of Liberal  
Arts and Sciences, SIMATS, Chennai, on 15th February 2024.

Dr. H. Anwer Basha  
Organizing Secretary

Dr. D Akila  
Convener

Dr. Gunita Arun Chandhok  
Principal



**SAVEETHA**  
INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES  
(Deemed to be University by order Section 3 of DGCI Act 1956)





## RESEARCH PROJECT

**A STUDY ON CONSUMER BEHAVIOUR AND SATISFACTION OF GOLD  
JEWELLERY INVESTMENT WITH SPECIAL REFERENCE TO CHENNAI CITY**

DISSERTATION SUBMITTED TO THE  
**UNIVERSITY OF MADRAS**

In partial fulfilment of the requirement for the Award of the degree of  
**MASTER OF PHILOSOPHY IN COMMERCE**

**BY**

**M.VAISHNAVI**

**REGISTER NO: MPS22018**

Under the Supervision and Guidance of

**DR.R.BHUVANESWARAN, M.Com., M.Phil., B.Ed., Ph.D .,**

Assistant Professor

PG & Research Department of Commerce

**THIRUTHANGAL NADAR COLLEGE,**

**SELAVAYAL, CHENNAI -600051**



**PG & RESEARCH DEPARTMENT OF COMMERCE**

**THIRUTHANGAL NADAR COLLEGE,**

**SELAVAYAL, CHENNAI -600051**






PG and Research Department of Commerce  
THIRUTHANGAL NADAR COLLEGE,  
SELAVAYAL, CHENNAI -600051


**BONAFIDE CERTIFICATE**

It is to certify that the Project Report entitled "A STUDY ON CONSUMER BEHAVIOUR AND SATISFACTION OF GOLD JEWELLERY INVESTMENT WITH SPECIAL REFERENCE TO CHENNAI CITY" is a Bonafide record of original work done by Mrs. S. VAISHNAVI (Register No. MPS22018) student of M.Phil., (Full time) THIRUTHANGAL NADAR COLLEGE Under my guidance and supervision during the year 2022– 2023.

The VIVA – VOCE Examination was conducted on 20/7/2023

  
Dr. B. JAGADEESWARAN  
M.Com., M.Phil., B.Ed., Ph.D.,  
RESEARCH GUIDE ASSISTANT PROFESSOR  
& RESEARCH DEPARTMENT OF COMMERCE

  
Dr. B. JAGADEESWARAN  
M.Com., M.Phil., NET, Ph.D.,  
HEAD  
PG & RESEARCH  
DEPARTMENT OF  
COMMERCE

  
Dr. V. DEVI  
M.B.A., M.C.A., M.Phil., Ph.D.,  
PRINCIPAL  
THIRUTHANGAL NADAR COLLEGE,  
SELAVAYAL, CHENNAI-600 051.

Head of the Department  
PG & Research Department of Commerce  
Thiruthangal Nadar College



**A STUDY ON THE EFFECTS OF TRAINING AND DEVELOPMENT ON  
EMPLOYEE RETENTION IN ORGANIZATIONS**

DISSERTATION SUBMITTED TO THE  
UNIVERSITY OF MADRAS

In partial fulfilment of the requirement for the Award of the degree of

**MASTER OF PHILOSOPHY IN COMMERCE**

BY

**A.MAHALAKSHMI**

REGISTER NO: MPS22016

Under the Supervision and Guidance of

**Dr.N.SANTHANAVADIVU, M.com,M.B.A,Mphil,Ph.D**

Associate Professor

PG & Research Department of Commerce

**THIRUTHANGAL NADAR COLLEGE,**

**SELAVAYAL, CHENNAI -600051**



**PG & RESEARCH DEPARTMENT OF COMMERCE**

**THIRUTHANGAL NADAR COLLEGE,**

**SELAVAYAL, CHENNAI -600051**



PG and Research Department of Commerce

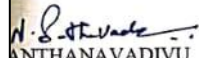
THIRUTHANGAL NADAR COLLEGE,

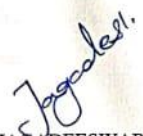
SELAVAYAL, CHENNAI -600051


**BONAFIDE CERTIFICATE**

is to certify that the Project Report entitled “A STUDY ON THE EFFECTS OF TRAINING AND DEVELOPMENT ON EMPLOYEE RETENTION IN ORGANIZATIONS” is a Bonafide record of final work done by Ms. A.MAHALAKSHMI (Register No. MPS22016) student of M.Phil., (Full time) THIRUTHANGAL NADAR COLLEGE Under my guidance and supervision during the year 2022– 2023.

VIVA – VOCE Examination was conducted on 20/07/2023.

  
N. S. SATHYANADIVU  
, M.B.A., M.Phil., Ph.D.,  
TECHNICAL GUIDE, ASSOCIATE PROFESSOR  
RESEARCH DEPARTMENT OF COMMERCE

  
Dr.B.JAGADEESWARAN  
M.Com., M.Phil., NET, Ph.D.,  
HEAD  
PG & RESEARCH  
DEPARTMENT OF COMMERCE

  
Dr.V.DEVI  
M.B.A., M.C.A., M.Phil, Ph.D.,  
Principal  
THIRUTHANGAL NADAR COLLEGE  
SELAVAYAL, CHENNAI-600 051.

Head of the Department  
PG & Research Department of Commerce  
Thiruthangal Nadar College





**A STUDY ON THE WOMEN EMPLOYEE SATISFACTION IN IT SECTORS**

**IN CHENNAI CITY**

**DISSERTATION SUBMITTED TO THE**

**UNIVERSITY OF MADRAS**

In partial fulfilment of the requirement for the Award of the degree of

**MASTER OF PHILOSOPHY IN COMMERCE**

**BY**

**M.HEMAVATHI**

**REGISTER NO: MPS22015**

**Under the Supervision and Guidance of**

**DR.N.SANTHANAVADIVU, M.Com., MBA.,M.Phil.,Ph.D.,**

**Associate Professor**

**PG & Research Department of Commerce**

**THIRUTHANGAL NADAR COLLEGE,**

**SELAVAYAL, CHENNAI -600051**



**PG & RESEARCH DEPARTMENT OF COMMERCE**

**THIRUTHANGAL NADAR COLLEGE,**

**SELAVAYAL, CHENNAI -600051**



PG and Research Department of Commerce  
THIRUTHANGAL NADAR COLLEGE,  
SELAVAYAL, CHENNAI -600051

**BONAFIDE CERTIFICATE**

is is to certify that the dissertation entitled "A STUDY ON THE WOMEN EMPLOYEE SATISFACTION IN IT SECTORS IN CHENNAI CITY" is a Bonafide record of original work done by Ms. M.HEMAVATHI (Register No. MPS22015) student of M.Phil., (Full time) THIRUTHANGAL NADAR COLLEGE Under my guidance and supervision during the year 2022– 2023.

The VIVA – VOCE Examination was conducted on 20/07/2023

*N. S. R. V. S.*  
SANTHANAVADIVU  
M.B.A, M.Phil., Ph.D.,  
ARCH GUIDE,  
CIATE PROFESSOR  
RESEARCH DEPARTMENT OF COMMERCE

*Jagadeeswaran*  
Dr.B.JAGADEESWARAN  
M.Com., M.Phil., NET, Ph.D.,  
HEAD  
PG & RESEARCH DEPARTMENT  
OF COMMERCE

*V. Devi*  
17/7/23  
Dr.V.DEVI  
M.B.A., M.Com., M.Phil., Ph.D.,  
Principal  
THIRUTHANGAL NADAR COLLEGE  
SELAVAYAL, CHENNAI-600 051.

Head of the Department  
PG & Research Department of Commerce  
Thiruthangal Nadar College



## National Conference on Multidisciplinary Culture in Social Sciences, Language and Literature-NCMCSLL-2024

Mr.U.P.ASWIN , UG - II Year, Department of Criminology and Police Administration, Thiruthangal Nadar college

### CONTEMPORARY: ROLE OF TECHNOLOGY IN REDUCTION OF WOMEN'S VULNERABILITY

Mr.AKASH JOSEPH<sup>1</sup> Ms.HEMALATHA S<sup>2</sup> Mr.U. P. ASWIN<sup>3</sup>

<sup>1</sup>Assistant Professor, Department of Criminology and Police Administration, Thiruthangal Nadar college, Chennai, Tamil Nadu, India. Email id: [akashjoseph333@gmail.com](mailto:akashjoseph333@gmail.com)

<sup>2</sup>UG - II Year, Department of Forensic Science, Kristu Jayanti college, Bengaluru, Karnataka, India. Email id:[hema132005@gmail.com](mailto:hema132005@gmail.com)

<sup>3</sup>UG - II Year, Department of Criminology and Police Administration, Thiruthangal Nadar college, Chennai, Tamil Nadu, India. Email id: [aswinup04@gmail.com](mailto:aswinup04@gmail.com)

#### ABSTRACT

The use of technology to reduce women's vulnerability is still in its early stages, but there is a growing body of evidence that shows that it can be an effective in future.technology plays a pivotal role and holds significant importance in various aspects of our lives. Its influence spans across different sectors, transforming how we live, work, communicate, and interact. Women vulnerability is a pervasive issue that affects millions of women worldwide. It refers to the increased susceptibility and exposure to various risks, discrimination, and violence faced by women solely based on their gender. Despite significant progress in gender equality, women continue to experience unique challenges and vulnerabilities in different aspects of life. This vulnerability is deeply rooted in historical, cultural, and systemic factors, and understanding its causes is essential to address and mitigate its impact on women's lives. The vulnerabilities of women in India require a comprehensive approach that involves legal reforms, awareness campaigns, education, and efforts to challenge patriarchal norms and cultural attitudes. Effective implementation of existing laws, improved access to education and healthcare, economic empowerment, and stronger support systems for survivors of violence are crucial steps towards enhancing the safety and well-being of women in India. Additionally, fostering a culture of gender equality and promoting women's participation in decision-making processes are essential for achieving lasting change.

Keywords: Women's vulnerability,poverty,violence,discrimination

#### INTRODUCTION:

Women around the world face a variety of vulnerabilities, including poverty, violence and discrimination. Technology can play a role in reducing these vulnerabilities by providing women with access to information, resources and support.Tamil Nadu, a progressive state in India, recognizes the critical importance of addressing women's vulnerability and promoting gender equality. To combat the challenges faced by women, the state has embraced





## RESEARCH ARTICLE

### Image Processing Video using Classification Techniques

Dhanush Kumar R, Aravindhan V

III<sup>rd</sup> year, B.Sc. Software Applications, Thiruthangal Nadar College,

Selavoyal, Chennai – 600051.

rdhanushkumar2580@gmail.com

v.aravindhan542003@gmail.com

**Abstract**—Today's rapidly growing internet era has also increased the data in a very large amount for which the classification of the data has become more important than ever before. As daily millions of videos are been uploaded on the internet usually it is been classified based on the title of the video, which is not enough as the content of the video may be different than that of the title. Thus, this research paper highlights a system that would classify the video based on real-time data which takes the content of the video as the input and accordingly it gives the output. The major crux of this system is the usage of deep learning, in which the collection of the image is been taken from the video and compared with the pre-trained model and accordingly the result showed.

#### I. INTRODUCTION.

Video classification refers to the technique of classifying the video based on image extraction from the video. Usually, the video playing software is more likely to show the content of the video based on the title of the video not based on the content of the video, which usually video player software doesn't do. Without any classification of the content of the video playing on the screen due to which any malfunction is done on the content of the video can't be recognized. In this proposed system video will be taken as input via a camera of the system and live output will be generated.

The concept of video classification is the process by which a computer program creates a collection of data that is in the image format and it is compared with the pre-trained model of the data set which is the collection of the data for the present data. The algorithm used in the system is detect Multiscale which from the library of the OpenCV which is been coded in python.

The process of video classification is done using the OpenCV library which converts an image into a single value by subtracting the sum of pixels. The main aim of this project is to classify the content of the video based on the gender, age using the facial node as the reference. Paul Viola provides the paper in which Rapid Object Detection using a Boosted Cascade is done for reference.

#### II. NEED OF STUDY.

Increased upload of data on the internet has made the classification of the data in a very systematic way made very necessary. Classifying the video based on a facial image has encroached the facial lock in the mobile phone for the lock as a security purpose. There are numerous ways to secure the mobile by keeping the phone lock by alphabet pin, numeric pin, pattern lock system but all of them take quite a bit of time but the facial lock

recognizes the face faster and it is much faster than any of the locking system. Hence, this paper highlights a system that would classify the gender and predicate the age of the person, which can be further updated to full-length video as an input in the system. This would save one's time required for checking the entire video.

#### III. LITERATURE SURVEY.

Rasha Ragheb Atallah, Amir Rudin Kamsin, Maizatul Akmar Ismail, Sherin Ali Abdelrahman "Face Recognition and Age Estimation Implications of Changes in Facial Features: A Critical Review Study". In this paper, we learned the important nodes in the face which connect the all the key point in the face which includes wrinkles, forehead hair length along with the basic node eyes, nose, mouth, ears. Detecting facial expression by a change in the moment of the following key nodes of the face. Changing the shape of the face based on the moment of the face.

Xingfang Yuan, Tony X. Han, Zhenbing Zhao, Baogang, Ce Gao, Miao Sun "Age Group and Gender Estimation in the Wild with Deep RoR Architecture". In this paper, they have proposed the CNN-based method which would classify the person on the age group of particular range and prediction of age is done leveraging residual networks of residual networks (RoR).

Jiale Chen, Sen Liu, Zhibo Chen "Gender Classification in Live Video" Nowadays the majority of time video or image is a capture from a mobile device rather than that of professional camera equipment, so in this paper, they have explained the fetching of data from camera and processing in the real-time so as the get the output immediately. In this paper, they have used the CNN technology which collects the image frame by frame from the video and compares it with the dataset and makes the following result.

Gil Levi and Tal Hassner "Age and Gender Classification using Convolutional Neural Networks" This convolutional technology has referred to the use of deep-convolutional neural network (CNN).

Filex Anda "Evaluating Automated Facial Age Estimation Techniques for Digital Forensics" This paper documents cognitive age prediction in which it helps the police, detectives and investigators to identify the undignified person which are involved in the child abuse. In this case the change in the facial shape in one of the major key which is taken into consideration in this document using various automated machine learning-based techniques.



### RESEARCH ARTICLE

#### National Conference on Machine Learning & Artificial Intelligence

Ms.M.Kamimalar, UG - II Year, Department of Criminology and Police Administration, Thiruthangal Nadar college

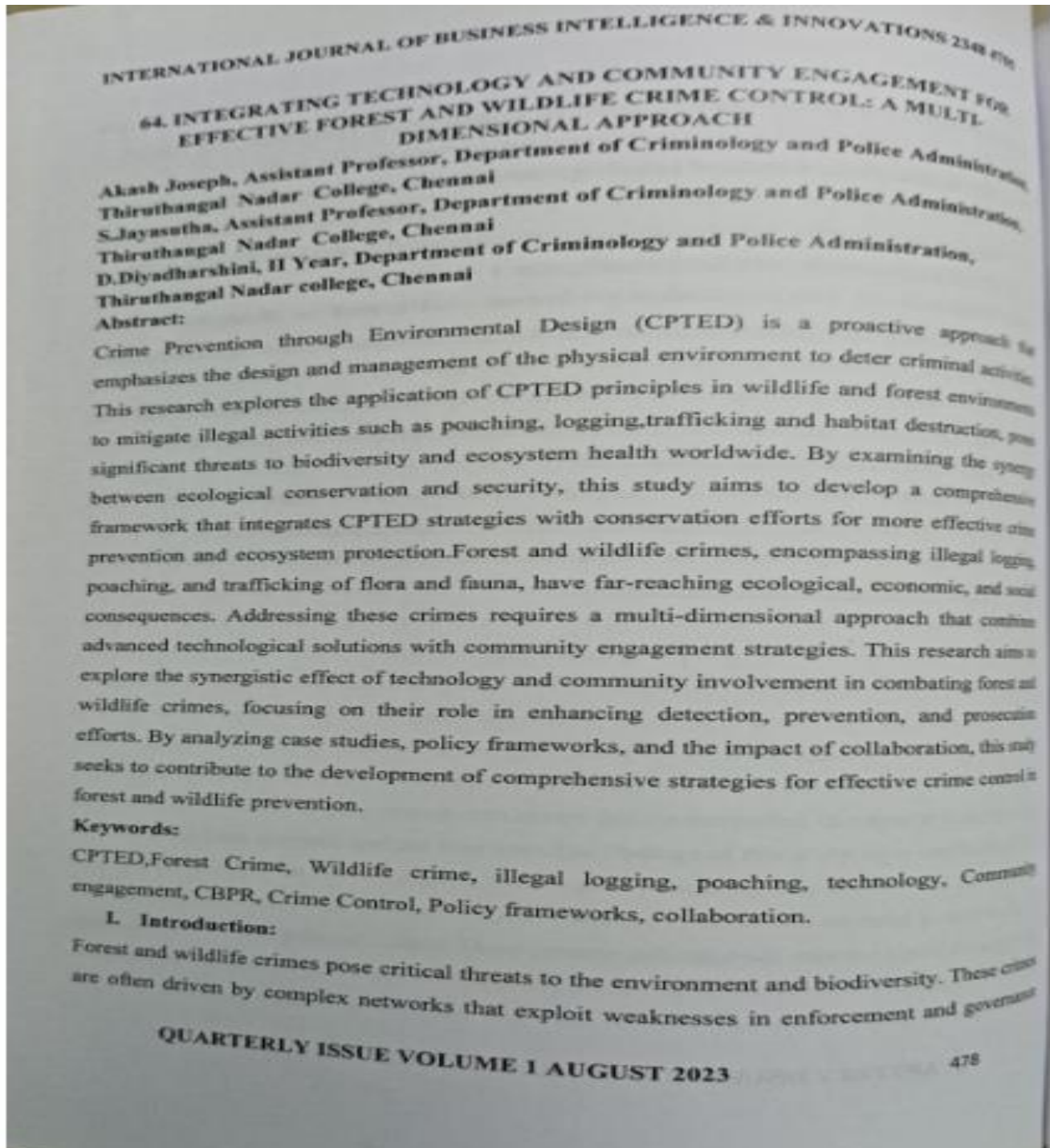




## RESEARCH ARTICLE

### International Journal of Business Intelligence & Innovations

Ms.D.Divyadharshini, UG - II Year, Department of Criminology and Police Administration, Thiruthangal Nadar college



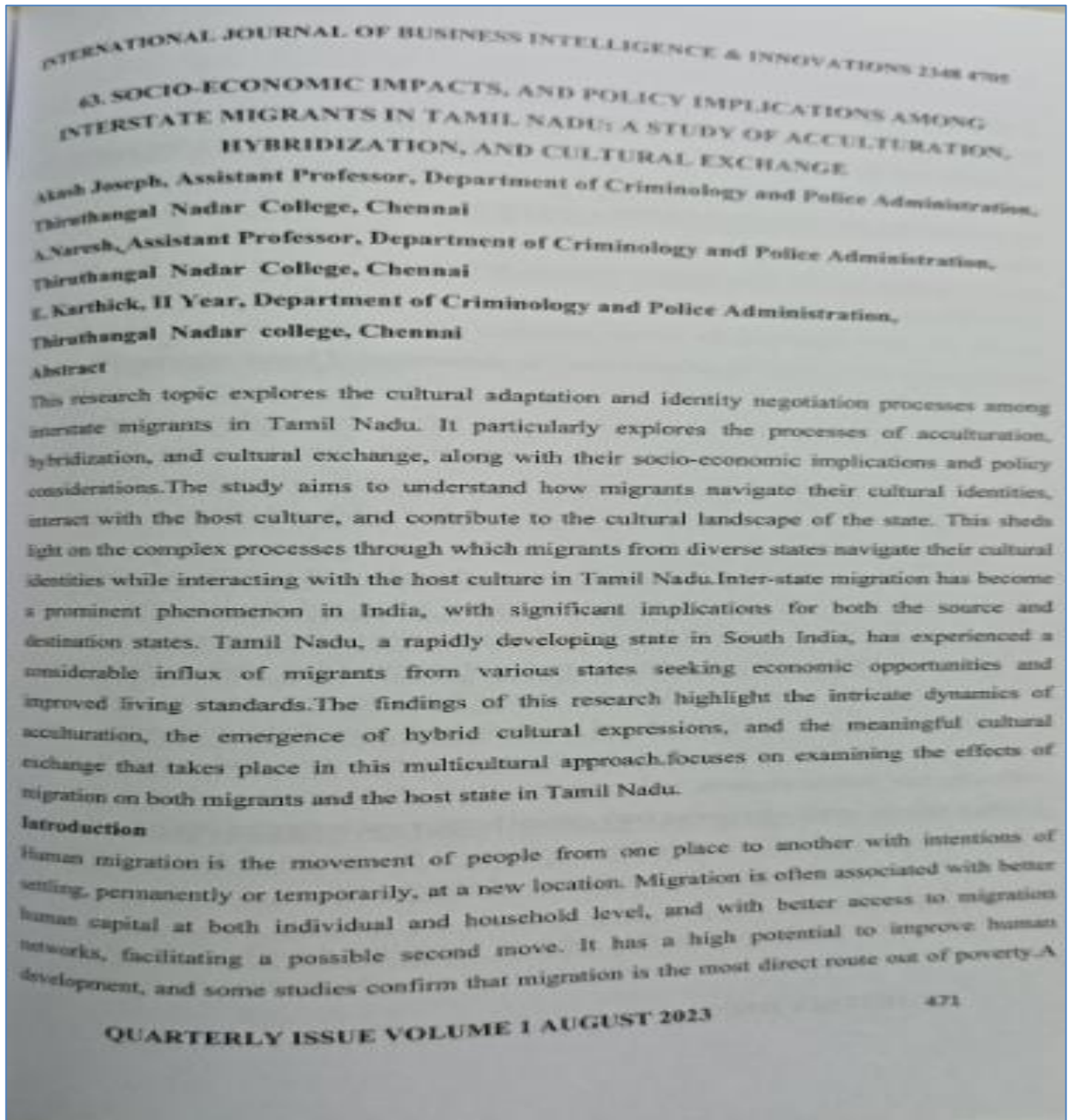




## RESEARCH ARTICLE

### International Journal of Business Intelligence & Innovations

Mr.E.Karthick, UG - II Year, Department of Criminology and Police Administration,  
Thiruthangal Nadar college





## RESEARCH ARTICLE

### International Journal of Business Intelligence & Innovations

Mr.Dhanush Kumar R & Aravindan V, UG –III Year, Department of Software Application , Thiruthangal Nadar college

#### Image Processing Video using Classification Techniques

Dhanush Kumar R, Aravindhan V

III<sup>rd</sup> year, B.Sc. Software Applications, Thiruthangal Nadar College,

Selavoyal, Chennai – 600051.

rdhanushkumar2580@gmail.com

v.aravindhan542003@gmail.com

**Abstract**—Today's rapidly growing internet era has also increased the data in a very large amount for which the classification of the data has become more important than ever before. As daily millions of videos are been uploaded on the internet usually it is been classified based on the title of the video, which is not enough as the content of the video may be different than that of the title. Thus, this research paper highlights a system that would classify the video based on real-time data which takes the content of the video as the input and accordingly it gives the output. The major crux of this system is the usage of deep learning, in which the collection of the image is been taken from the video and compared with the pre-trained model and accordingly the result showed.

#### I. INTRODUCTION.

Video classification refers to the technique of classifying the video based on image extraction from the video. Usually, the video playing software is more likely to show the content of the video based on the title of the video not based on the content of the video, which usually video player software doesn't do. Without any classification of the content of the video playing on the screen due to which any malfunction is done on the content of the video can't be recognized. In this proposed system video will be taken as input via a camera of the system and live output will be generated.

The concept of video classification is the process by which a computer program creates a collection of data that is in the image format and it is compared with the pre-trained model of the data set which is the collection of the data for the present data. The algorithm used in the system is detect Multiscale which from the library of the OpenCV which is been coded in python.

The process of video classification is done using the OpenCV library which converts an image into a single value by subtracting the sum of pixels. The main aim of this project is to classify the content of the video based on the gender, age using the facial node as the reference. Paul Viola provides the paper in which Rapid Object Detection using a Boosted Cascade is done for reference.

#### II. NEED OF STUDY.

Increased upload of data on the internet has made the classification of the data in a very systematic way made very necessary. Classifying the video based on a facial image has encroached the facial lock in the mobile phone for the lock as a security purpose. There are numerous ways to secure the mobile by keeping the phone lock by alphabet pin, numeric pin, pattern lock system but all of them take quite a bit of time but the facial lock

recognizes the face faster and it is much faster than any of the locking system. Hence, this paper highlights a system that would classify the gender and predicate the age of the person, which can be further updated to full-length video as an input in the system. This would save one's time required for checking the entire video.

#### III. LITERATURE SURVEY.

Rasha Ragheb Atallah, Amir Rudin Kamsin, Maizatul Akmar Ismail, Sherin Ali Abdelrahman "Face Recognition and Age Estimation Implications of Changes in Facial Features: A Critical Review Study". In this paper, we learned the important nodes in the face which connect the all the key point in the face which includes wrinkles, forehead hair length along with the basic node eyes, nose, mouth, ears. Detecting facial expression by a change in the moment of the following key nodes of the face. Changing the shape of the face based on the moment of the face.

Xingfang Yuan, Tony X. Han, Zhenbing Zhao, Baogang, Ce Gao, Miao Sun "Age Group and Gender Estimation in the Wild with Deep RoR Architecture". In this paper, they have proposed the CNN-based method which would classify the person on the age group of particular range and prediction of age is done leveraging residual networks of residual networks (RoR).

Jiale Chen, Sen Liu, Zhibo Chen "Gender Classification in Live Video" Nowadays the majority of time video or image is a capture from a mobile device rather than that of professional camera equipment, so in this paper, they have explained the fetching of data from camera and processing in the real-time so as the get the output immediately. In this paper, they have used the CNN technology which collects the image frame by frame from the video and compares it with the dataset and makes the following result.

Gil Levi and Tal Hassner "Age and Gender Classification using Convolutional Neural Networks" This convolutional technology has referred to the use of deep-convolutional neural network (CNN).

Filix Anda "Evaluating Automated Facial Age Estimation Techniques for Digital Forensics" This paper documents cognitive age prediction in which it helps the police, detectives and investigators to identify the undignified person which are involved in the child abuse. In this case the change in the facial shape in one of the major key which is taken into consideration in this document using various automated machine learning-based techniques.