



SENGUNTHAR ARTS AND SCIENCE COLLEGE

(AFFILIATED TO PERIYAR UNIVERSITY, SALEM AND APPROVED BY AICTE, NEW DELHI)
AN ISO 9001:2015 CERTIFIED INSTITUTION
(RECOGNISED UNDER SECTION 2(F) AND 2(BB) OF UGC ACT 1956 AND ACCREDITED BY NAAC
(TRICHY CAMPUS - 620002)



AQAR – 2023 -2024

3.4.2 Number of functional MoUs with national and international institutions, universities, industries, corporate houses etc. during the year



Since 1991

SENGUNTHAR ARTS AND SCIENCE COLLEGE

Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)

an ISO 9001:2008 Certified Institution

Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and

Accredited by NAAC

TIRUCHENGODE – 637205



S.No	Name of the institution/ industry/ corporate house	Year of signing MoU	Duration	List the actual activities under each MOU year wise	Number of students/teach ers participated under MoUs	PAGE No
1	Noop Tron Private Ltd	2023	5 Years	M.Sc., PROJECT	09	1
2	CR Mushroom Farms and LAB	2023	5 Years	INTERSHIP TRAINING	08	47
3	Remura Biologicals	2023	5 Years	GUEST LECTURE	80	60
4	AWE- Care Private LTD	2023	1-Year	INTERSHIP TRAINING	07	85

MEMORANDUM OF UNDERSTANDING (MoU)

between



SENGUNTHAR ARTS AND SCIENCE COLLEGE

Affiliated to Periyar University, Salem & Approved by AICTE, New Delhi.

An ISO 9001:2015 Certified Institution

Recognised U/s 2(f) and 12(B) of the UGC Act, 1956 & Accredited by NAAC A+

Salem Road, Tiruchengode, Namakkal, Tamil Nadu 637 205

&



NoobTron Pvt. Ltd

NoobTron Pvt. Ltd.,

No. 74, Satrapathi Sivaji Street, Shanmuga Nagar, Kanchipuram,
Chitlapakkam, Chennai, TN - 600 064

For

**SKILL DEVELOPMENT, R&D SERVICES, INDUSTRIAL
TRAININGS, INTERNSHIP PROGRAMMES, PATENT FILINGS,
PLACEMENTS, CONSULTANCY AND OTHER RELATED SERVICES**

On

20.12.2023

For Sengunthar Arts and Science College
Salem Road, Tiruchengode,
Namakkal, Tamil Nadu - 637 205

For NoobTron Pvt. Ltd
Chennai, TN

Authorized Signatory

PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE,
TIRUCHENGODE - 637 205.



Authorized Signatory

Chief Executive Officer
NoobTron Private Limited, India

भारतीय गैर न्यायिक

बीस रुपये

रु.20

Rs.20

TWENTY
RUPEES



INDIA NON JUDICIAL

தமிழ்நாடு தமில்நாடு TAMIL NADU

19.12.2023 Sengunthar Arts and Science
College, Tiruchengode
637205

28AC 712247

T.N.D. சுந்தராமூர்த்தி,
முத்திரைத்தாள் விடுபடையாளர்,
L.No. 6 / 1997
திருச்செங்கோடு-637 211.

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (herein after called as the 'MoU') is entered into on this
Wednesday, 20.12.2023 by and between

Sengunthar Arts and Science College, Salem Road, Tiruchengode, Namakkal, Tamil Nadu
- 637 205, the First Party represented herein by The Principal, Dr. S. Ravikumar, (herein
after referred as 'First Party', the Institution which expression, unless excluded by or
repugnant to the subject or context shall include its successors-in-office, administrators and
assigns).

AND

NoobTron Pvt. Ltd., No. 74, Satrapathi Sivaji Street, Shanmuga Nagar, Kanchipuram,
Chitlapakkam, Chennai, TN - 600 064, the Second Party, and represented herein by its Chief
Executive Officer, Mr. Balaji Ramachandran, (herein after referred to as "Second Party",
company which expression, unless excluded by or repugnant to the subject or context shall
include its successors - in-office, administrators and assigns).

(First Party and Second Party are hereinafter jointly referred to as 'Parties' and individually as
'Party')

[Signature]

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



[Signature]
20/12/2023

WHEREAS:

- A) First Party is a Higher Educational Institution named:
Sengunthar Arts and Science College, Salem Road, Tiruchengode, Namakkal, Tamil Nadu - 637 205.
- B) First Party & Second Party believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.
- C) The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Education, Research Activities, Journal & Conference support, Industrial training programme, Internships and Training Programme, Hands-on Campus Training programme, Lab - Training programme, Clinical Research programme, Out-reach programme, Hospital Training programme, Patent and Copyrights filings, Guest Lectures, Workshops, Faculty Development Programme, Funded projects support, Placement support and other relevant businesses.
- D) Both Parties, desire to sign this MoU for advancing their mutual interests.
- E) **NoobTron Pvt. Ltd., Chitlapakkam, Chennai, TN,** the Second Party is engaged in Research and Development, New Product Development, Industrial Support, Design and Development, Prototyping, Industrial and Institutional Research Activities, Patent filings, Copyrights filings, Research Trainings, Internships, Industrial Visits, Placement support, Government Funded Project support, Book of Record Support, Journal Publication support, Conference support, Faculty Development Programme support, Award Programme support, Corporate Wellness Programme support, Academic Admission support, Consultancy Projects support, Entrepreneurship Cell Development support and other relevant services and support.

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES SET FORTH IN THIS MOU, THE PARTIES HERE TO AGREE AS FOLLOWS:

1. CO-OPERATION

- 1.1. Both Parties are united by common interests and objectives, and they shall establish channels of communication and co-operation that will promote and advance their respective operations within the Institution and its related wings. The Parties shall keep each other informed of potential opportunities and shall share all information that may be relevant to secure additional opportunities for one another.
- 1.2. First Party and Second Party co-operation will facilitate effective utilization of the intellectual capabilities of the faculty of First Party providing significant inputs to them in developing suitable teaching / training systems, keeping in mind the needs of the industry by acting as ambassadors to promote the industry.

2. SCOPE OF THE MoU

- 2.1. The budding graduates from the institution could play a key role in technological up-gradation, innovation and competitiveness of an industry. Both parties believe that close

3
20/12/23

co-operation between the two would be of major benefit to the student community to enhance their skills and knowledge.

- 2.2. **Curriculum Design:** Second Party will give valuable inputs to the First Party in teaching / training methodology and suitably customize the curriculum so that the students fit into the industrial scenario meaningfully.
- 2.3. **Industrial Training & Internship programme:** Industry and Institution interaction will give an insight into the latest developments / requirements of the industries; the Second Party to permit the Faculty and Students of the First Party to visit its group companies and also involve in Industrial Training and Internship Programs for the First Party. The industrial training and Internship exposure provided to students and faculty through this association will build confidence and prepare the students to have a smooth transition from academic to working career. The Second Party will provide its Labs / Workshops / Industrial Sites for the hands-on training of the learners enrolled with the First Party.
- 2.4. **Research and Development:** Company can enable to carry out the research activity based on the feasibility towards the development of both the parties on the interest of the students for the betterment.
- 2.5. **Skill Development Programs:** Second Party to train the students of First Party on the emerging technologies in order to bridge the skill gap and make them industry ready through internship programme as per the company policy.
- 2.6. **Guest Lectures:** Second Party to extend the necessary support to deliver guest lectures to the students of the First Party on the technology trends and in house requirements.
- 2.7. **Faculty Development Programs:** Second Party to train the Faculties of First Party for imparting training as per the industrial requirement considering the National Occupational Standards in concerned sector, if available.
- 2.8. **Consultancy Linkage:** The Company hereby engages the consultant to provide and perform the services and the consultant hereby accepts the engagement.
- 2.9. **Placement of Trained Students:** Second Party will actively engage to help the delivery of the training and placement of students of the First Party into internships/jobs; and can be provided / recommended for the process on the company feasibility to the students. The Second Party will itself absorb as many candidates as possible from the trained students every year.
- 2.10. Both Parties to obtain all internal approvals, consents, permissions, and licenses of whatsoever nature required for offering the Programmes on the terms specified herein.
- 2.11. Lab - Training programme, Hands-on Campus Training programme and Hospital Training programme.
- 2.12. Patent (Indian and International) filings and Copyright filings
- 2.13. Professional Certification Courses
- 2.14. Journal Publication and Conference Support
- 2.15. Entrepreneurship Cell Development
- 2.16. Funded Projects Support
- 2.17. Book of Records Services
- 2.18. Foreign Exchange Programme / Clerkship/ Internship



3. VALIDITY

- 3.1. This Agreement will be valid for five years until it is expressly terminated by either Party on mutually agreed terms, during which period NoobTron Pvt. Ltd., Chitlapakkam, Chennai, TN, the Second Party, as the case may be, will take effective steps for implementation of this MoU. Any act on the part of NoobTron Pvt. Ltd., Chitlapakkam, Chennai, TN, the Second Party after termination of this Agreement by way of communication, correspondence etc., shall not be construed as an extension of this MoU.
- 3.2. Both Parties may terminate this MoU upon 30 calendar days' notice in writing. In the event of Termination, both parties have to discharge their obligations.

4. RELATIONSHIP BETWEEN THE PARTIES

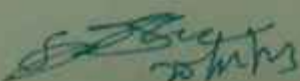
- 4.1. It is expressly agreed that First Party and Second Party are acting under this MoU as independent contractors, and the relationship established under this MoU shall not be construed as a partnership. Neither Party is authorized to use the other Party's name in any way, to make any representations or create any obligation or liability, expressed or implied, on behalf of the other Party, without the prior written consent of the other Party. Neither Party shall have, nor represent itself as having, any authority under the terms of this MoU to make agreements of any kind in the name of or binding upon the other Party, to pledge the other Party's credit, or to extend credit on behalf of the other Party.

5. PAYMENT TERMS BETWEEN THE PARTIES

- 5.1. The MoU in itself does not imply any financial obligation to both parties.
- 5.2. The Services provided by either party that involves financial component shall be discussed (time-frame and terms of financial transactions), agreed-upon and documented.
- 5.3. Either parties shall not be responsible or arbitrate any services promised or provided that are not documented by both parties officially.

For Sengunthar Arts and Science College
Salem Road, Tiruchengode,
Namakkal, Tamil Nadu - 637 205

For NoobTron Pvt. Ltd
Chennai, TN


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205




20/12/2023
Authorized Signatory
Chief Executive Officer
NoobTron Private Limited, India

Name of Institution: Sengunthar Arts and Science College	Name of Industry: NoobTron Pvt. Ltd.,
Address : Salem Road, Tiruchengode, Namakkal, Tamil Nadu 637 205	Address: No. 3/4, Satrapathi Sivaji Street, Shanmuga Nagar, Kanchipuram, Chitlapakkam, Chennai, TN - 600064
Contact Details : +91 98427 53229	Contact Details : +91 75502 39469, +91 63840 44466
E-mail ID: info@senguarts.co.in	E-mail ID: info@noobtron.com / noobtronceo@outlook.com
Web: https://www.senguarts.co.in/	Web: www.noobtron.com

Witness1:

A. P. Lakshmi
Asst. Prof in Microbiology
Sengunthar Arts and Science
College, Tiruchengode - 05

Witness1:

23.12.2023
DMIVENTHA S
ENGINEER & RESEARCH
SPECIALIST-II
NOOBTRON PRIVATE LIMITED
CHENNAI, INDIA



Witness2:

T. Rajamony
Asst. Professor in Commerce (CA),
Sengunthar Arts and Science College,
Tiruchengode - 05

Witness2:

E. J. J. J.
ASST PROFESSOR,
DEPARTMENT OF COMPUTER SCIENCE,
SENGUNTHAR ARTS AND SCIENCE,
COLLEGE, TIRUCHENGODE.

**HIGHLY-ACCURATE FEATURE AGGREGATION HOUSEHOLD
ELECTRICITY CONSUMPTION USING DEEP REPRESENTATION
LEARNING**

A Project Work submitted in partial fulfillment of the
requirements for the award of the degree of

Master of Computer Applications

to the

Periyar University, Salem-11

by

P.CHANDRU

REG.NO:C22PG127CAP001

Under the Guidance of

Mr.P.BALAMURUGAN M.Sc., M.Phil.,



DEPARTMENT OF COMPUTER APPLICATIONS

SENGUNTHAR ARTS AND SCIENCE COLLEGE

(AFFILIATED TO PERIYAR UNIVERSITY)

TIRUCHENGODE-637205

APRIL-2024

ATTESTED

**PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**

CERTIFICATE

This is to certify that the Project Work entitled "**HIGHLY-ACCURATE
FEATURE AGGREGATION HOUSEHOLD ELECTRICITY
CONSUMPTION USING DEEP REPRESENTATION
LEARNING**" submitted in partial fulfillment of the requirements of the
award of the degree of Master of Computer Applications to the Periyar
University, Salem is a record of bonafide work carried out by **P.CHANDRU**
Reg.No:C22PG127CAP001 under my supervision and guidance.

Place: Tiruchengode

Date: 23.04.2024


Internal Guide

(Mr.P.BALAMURUGAN M.Sc., M.Phil.,)


Head of the Department

(Mrs. R.BHARATHI M.Sc., M.Phil.,)

HEAD OF THE DEPARTMENT
Dept of Comp. Applications,
Sengunthar Arts and Science College,
TIRUCHENGODE.

Submitted for the Project Viva Voce Examination held on
23.04.2024.....


Internal Examiner


External Examiner

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



NoobTron Pvt. Ltd

—We Focus on Technology—
ISO 9001:2015 Certified

SCIENTIFIC STAY CERTIFICATE

April 01, 2024

TO WHOM IT MAY CONCERN

Re: Mr. CHANDRU P

This is to certify that, **Mr. CHANDRU P (C22PG127CAP001)** of Second year, Master of Computer Applications from Sengunthar Arts and Science College, has completed his project of three months from December 11, 2023 to March 30, 2024.

During this project, he got exposure of Research (R&D) project entitled on "**HIGHLY-ACCURATE FEATURE AGGREGATION HOUSEHOLD ELECTRICITY CONSUMPTION USING DEEP REPRESENTATION LEARNING**". He has successfully completed all the tasks and assignments given to him. His performance has been found up to the mark during this project.

We wish best of luck for his Future Endeavours.

Sincerely,

Mr. Balaji Ramachandran
Chief Executive Officer
NoobTron Private Limited, India.

ATTESTED

PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGOODE - 637 205.



SYNOPSIS

The Advent of IoT, big data analytics, and deep learning algorithms has transformed data collection and analysis in the energy industry. However, the accurate forecasting of household energy consumption still remains a challenge due to the complex and non-linear nature of power consumption patterns. This research proposes a novel approach to accurately aggregate household electricity consumption data using Deep Representation Learning (DRL). The custom-made DRL architecture leverages external knowledge and domain expertise in electricity grid systems to extract relevant features from high-dimensional data. This approach is able to generate highly accurate predictions of household electricity consumption, outperforming standard machine learning methods in short-term and long-term forecasting tasks. The outcome of this research is a potential solution for optimizing energy management within smart grid systems. The proposed DRL architecture effectively addresses the limitations of traditional feature engineering techniques by incorporating external knowledge and advanced modeling methodologies.

Its capability to accurately analyze complex household energy consumption patterns provides valuable insights into the drivers of electricity demand. Overall, this research highlights the potential of DRL for analyzing large-scale high-dimensional data and its application in various fields, including industrial and transportation systems. In conclusion, the accurate forecasting of household energy consumption remains a significant challenge, and traditional feature engineering techniques are often inadequate. The proposed DRL approach, which harnesses the power of external knowledge, IoT, and big data analytics, provides a promising solution for optimizing energy management in smart grid systems and provides insights into the factors influencing electricity demand in households.

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SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

4.1 CONCLUSION

This paper aims to address the challenge of accurately forecasting household energy consumption patterns using Deep Representation Learning (DRL). The proposed DRL architecture leveraged external knowledge and domain expertise in electricity grid systems to extract relevant features from high-dimensional data. The custom-made DRL architecture was able to accurately predict household electricity consumption, outperforming standard machine learning methods in short-term and long-term forecasting tasks. The outcome of this research is a potential solution for optimizing energy management within smart grid systems. Overall, this research highlights the potential of DRL for analyzing large-scale high-dimensional data and its application in various fields, including industrial and transportation systems. The proposed DRL approach leverages the power of external knowledge and advanced modeling methodologies to analyze complex household energy consumption patterns and provide valuable insights into the drivers of electricity demand.

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODU - 637 205.

Enhanced driver Stress Detection: Multi-Level Feature Extraction with ML and DL Algorithms

A Project Work submitted in partial fulfillment of the
requirements for the award of the degree of

Master of Computer Applications

to the

Periyar University, Salem-II

by

R.PRAVEEN

REG.NO:C22PG127CAP007

Under the Guidance of

Mrs. T. GAYATHRI MCA., M.Phil.,



DEPARTMENT OF COMPUTER APPLICATIONS

SENGUNTHAR ARTS AND SCIENCE COLLEGE

(AFFILIATED TO PERIYAR UNIVERSITY)

TIRUCHENGODE-637205

APRIL – 2024

ATTESTED

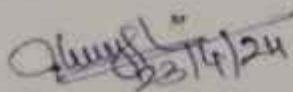

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

CERTIFICATE

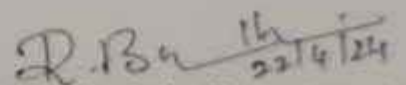
This is to certify that the Project Work entitled "Enhanced driver Stress Detection: Multi-Level Feature Extraction with ML and DL Algorithms" submitted in partial fulfillment of the requirements of the award of the degree of Master of Computer Applications to the Periyar University, Salem is a record of bonafide work carried out by **R.PRAVEEN** Reg.No:C22PG127CAP007 under my supervision and guidance.

Place: Tiruchengode

Date: 23-04-2024


Internal Guide

(Mrs.T.GAYATHRI MCA.,M.Phil.,)


Head of the Department

(Mrs. R.BHARATHI M.Sc., M.Phil.,)

HEAD OF THE DEPARTMENT
Dept of Comp. Applications,
Sengunthar Arts and Science College,

TIRUCHENGODE.
23-04-2024

Submitted for the Project Viva Voce Examination held on


Internal Examiner


External Examiner

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



NoobTron Pvt. Ltd.

ISO 9001:2015 Certified

SCIENTIFIC STAY CERTIFICATE

April 01, 2024

TO WHOM IT MAY CONCERN

Re: Mr. PRAVEEN R

This is to certify that, **Mr. PRAVEEN R (C22PG127CAP007)** of Second year, Master of Computer Applications from Sengunthar Arts and Science College, has completed his project of three months from December 11, 2023 to March 30, 2024.

During this period, He got exposure of Research (R&D) project entitled on "ENHANCED DRIVER STRESS DETECTION: MULTI-LEVEL FEATURE EXTRACTION WITH ML AND DL ALGORITHMS". He has successfully completed all the tasks and assignments given to him. His performance has been found up to the mark during this project.

We wish best of luck for his Future Endeavours.

Sincerely,

Mr. Balaji Ramachandran
Chief Executive Officer
NoobTron Private Limited, India.



ATTESTED

PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

4.1 CONCLUSION

Lifestyle diseases (for example stress and related complications) are one of the greatest worldwide threats to the human population. As a result it is critical to monitor several physiological characteristics continuously and in real time. Developing an appropriate model for smart healthcare services is a difficult but fascinating undertaking. Various uses of smart healthcare systems include monitoring blood pressure (BP) glucose levels oxygen levels skin conductance and resistance and electrocardiography (ECG)

We propose a new open-source tool in Python which not only does it correctly extract statistical features of GSr data that are a consequence of emotional stimulus but also it extracts more new features using deep learning. To the best of our knowledge there is no previous study claiming what statistical features of GSr data are the best features for stress classification. Our tool uses deep learning to automatically extract a considerable number of features of GSr data which are beneficial for stress detection. Although the large number of deep learning features for classification could cause an inefficiency in terms of memory and runtime it could potentially achieve a higher accuracy compared to statistical features. Therefore a tool which can extract both statistical and deep learning features of GSr data at the same time can facilitate and accelerate research in GSr signals analysis for stress detection.

We showed that our model can achieve competitive results with few layers. The results using validation showed that by fine-tuning the model with only a fraction of the test data.

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**INTELLIGENT ANALYSIS AND IMPROVED PREDICTION OF POWER
ORIENTED FALSE INJECTION ATTACK ON CYBER PHYSICAL
POWER SYSTEM**

A project report submitted in partial fulfillment of the requirements for the award of
the degree of

MASTER OF COMPUTER APPLICATIONS

to the

Periyar University, Salem – 11

By

S.SENTHILKUMAR

Reg. No: C22PG127CAP008

Under the Guidance of

Mr. P.BALAMURUGAN M.Sc., M.Phil.,



DEPARTMENT OF COMPUTER APPLICATIONS

SENGUNTHAR ARTS AND SCIENCE COLLEGE

(AFFILIATED TO PERIYAR UNIVERSITY)

TIRUCHENGODE – 637 205

APRIL- 2024

ATTESTED


**PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**

**SENGUNTHAR ARTS AND SCIENCE COLLEGE (AFFILIATED TO
PERIYAR UNIVERSITY)
TIRUCHENGODE – 637 205**

CERTIFICATE


This is to certify that the project report entitled "INTELLIGENT ANALYSIS AND IMPROVED PREDICTION OF POWER ORIENTED FALSE INJECTION ATTACK ON CYBER PHYSICAL POWER SYSTEM" submitted in partial fulfillment of the requirements for the award of the degree of Master of Computer Applications to the Periyar University, Salem is a record of bonafide work carried out by **S.SENTHILKUMAR** Register No: **C21PG127CAP008** under supervision and guidance and that no part of the report has been submitted for the award of any degree or diploma.

Place : Tiruchengode

Date : **23.04.2024**



SIGNATURE OF THE GUIDE

(Mr. P.BALAMURUGAN M.Sc., M.Phil.,)


HEAD OF THE DEPARTMENT
(Mrs. R.BHARATHI M.Sc., M.Phil.,)
HEAD OF THE DEPARTMENT
Dept of Comp. Applications,
Sengunthar Arts and Science College,
TIRUCHENGODE.

Submitted for the Viva-voce Examination held on **23.04.2024**


Internal Examiner


External Examiner
23/4/24.

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



NoobTron Pvt. Ltd.

ISO 9001:2015 Certified

SCIENTIFIC STAY CERTIFICATE

April 01, 2024

TO WHOM IT MAY CONCERN

Re: Mr. SENTHILKUMAR S

This is to certify that, **Mr. SENTHILKUMAR S (C22PG127CAP008)** of Second year, Master of Computer Applications from Sengunthar Arts and Science College, has completed his project of three months from December 11, 2023 to March 30, 2024.

During this period, He got exposure of Research (R&D) project entitled on "INTELLIGENT ANALYSIS AND IMPROVED PREDICTION OF POWER ORIENTED FALSE INJECTION ATTACK ON CYBER PHYSICAL POWER SYSTEM". He has successfully completed all the tasks and assignments given to him. His performance has been found up to the mark during this project.

We wish best of luck for his Future Endeavours.

Sincerely,

Mr. Balaji Ramachandran
Chief Executive Officer
NoobTron Private Limited, India.

ATTESTED

PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



4.1 CONCLUSION

Improving the cyber security of cyber physical energy systems is vital for the efficient and resilient operation of the power grid. FDIAs can elicit severe physical and economic impacts on power systems. Researchers have thoroughly investigated FDIAs and have proposed algorithms to detect these data integrity attacks. Among these algorithms, deep learning-based methodologies are gaining attention due to their superior detection performance. In this paper, we propose a deep learning-based approach to detect the FDIA in smart grids considering system line parameters modeling errors. The involved strategy contains two stages. In the first one, three refined terms are simultaneously optimized, which aims at improving the detection performance of the built NN on the (source domain) dataset while minimizing the joint distribution matching between domains. The second stage uses the real (target domain) data to fine-tune the trained deep neural network. A significant advantage of the proposed mechanism is that it can trace the system modeling errors online by only collecting real normal data, which is considerably practical in real smart grids.

ATTESTED



PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**Multi Model Partially Covariant Deep Supervised Brain Tumor
Segmentation using Active Transformer Encoder Learning**

A Project Work submitted in partial fulfillment of the
requirements for the award of the degree of

Master of Computer Applications

to the

Periyar University, Salem-11

by

S.VINOTH

REG.NO:C22PG127CAP011

Under the Guidance of

Mrs. R. BHARATHI M.Sc., M.Phil.,



DEPARTMENT OF COMPUTER APPLICATIONS

SENGUNTHAR ARTS AND SCIENCE COLLEGE

(AFFILIATED TO PERIYAR UNIVERSITY)

TIRUCHENGODE-637205

APRIL-2024

ATTESTED

**PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**

CERTIFICATE

This is to certify that the Project Work entitled “Multi Model Partially Covariant Deep Supervised Brain Tumor Segmentation using Active Transformer Encoder Learning” submitted in partial fulfillment of the requirement of the degree of master Computer Applications to the Periyar University, Salem is a record of bonafide work carried out by S.VINOTH Reg.No:C22PG127CAP011 under my supervision and guidance.

Place: Tiruchengode

Date: 23.04.2024

R. Bn 1h 22/4/24
Internal Guide

(Mrs. R. BHARATHI M.Sc., M.Phil.,)

R. Bn 1h 22/4/24
Head of the Department

(Mrs. R. BHARATHI M.Sc., M.Phil.,)

HEAD OF THE DEPARTMENT

Dept of Comp. Applications,
Sengunthar Arts and Science College,

TIRUCHENGODE.

Submitted for the Project Viva Voce Examination held on
..23.04.2024.....

R. Bn 1h 23/4/24
Internal Examiner

External Examiner
26/4/24

ATTESTED

Principal
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



NoobTron Pvt. Ltd

ISO 9001:2015 Certified

SCIENTIFIC STAY CERTIFICATE

March 30, 2024

TO WHOM IT MAY CONCERN

Re: Mr. VINOTH S

This is to certify that, **Mr. VINOTH S (C22PG127CAP011)** of Second year, Master of Computer Applications from Sengunthar Arts and Science College, has completed her internship of three months from January 02, 2024 to March 15, 2024.

During this intern, she got exposure of various Research (R&D) project entitled on "MULTI MODEL PARTIALLY COVARIANT DEEP SUPERVISED BRAIN TUMOR SEGMENTATION USING ACTIVE TRANSFORMER ENCODER LEARNING". She has successfully completed all the tasks and assignments given to her. Her performance has been found up to the mark during internship period.

We wish best of luck for her Future Endeavours.

Sincerely,

Mr. Balaji Ramachandran
Chief Executive Officer
NoobTron Private Limited, India.



ATTESTED

PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

4.1.CONCLUSION

A modified architecture has been proposed in this article that takes advantage of the processed MRI dataset and proposed recto-triangular architecture in the hidden layer for brain tumor detection. The proposed CNN model may perform better than human observers by focusing on a portion of the brain image near the tumor tissue. The proposed preprocessing techniques remove many irrelevant pixels from the images to reduce computing time and capacity.

In conclusion we propose an efficient deep learning-based framework for interactive D/D medical image segmentation. It uses a bounding box-based CNN for binary segmentation and can segment previously unseen objects. A unified framework is proposed for both unsupervised and supervised refinements of the initial segmentation where image-specific fine-tuning based on a weighted loss function is proposed. Experiments on segmenting multiple organs from D fetal MRI and brain tumors from D MRI show that our method performs well on previously unseen objects and the image- specific fine-tuning outperforms CRF. It achieves similar or higher accuracy with fewer user interactions and less user time than traditional interactive segmentation methods.

ATTESTED


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SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

TASK OFFLOADING FOR OBJECT DETECTION BASED ON YOLO

A Project Work submitted in partial fulfillment of the
requirements for the award of the degree of

Master of Computer Applications

to the

Periyar University, Salem-11

by

M.BAKKIYALAKSHMI

REG.NO:C22PG127CAP012

Under the Guidance of

Mrs. T. GAYATHRI MCA., M.Phil.,



DEPARTMENT OF COMPUTER APPLICATIONS

SENGUNTHAR ARTS AND SCIENCE COLLEGE

(AFFILLIATED TO PERIYAR UNIVERSITY)

ATTESTED


**PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**

TIRUCHENGODE-637205

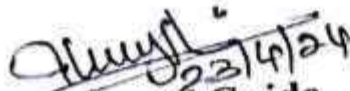
APRIL – 2024


CERTIFICATE

This is to certify that the Project Work entitled "TASK OFFLOADING FOR OBJECT DETECTION BASED ON YOLO" submitted in partial fulfillment of the requirements of the award of the degree of Master of Computer Applications to the Periyar University, Salem is a record of bonafide work carried out by **M.BAKKIYALAKSHMI** Reg.No:C22PG127CAP012 under my supervision and guidance.

Place: Tiruchengode


Date: 23.04.2024


Internal Guide
(Mrs.T.GAYATHRI MCA., M.Phil.,)


Head of the Department
(Mrs. R.BHARATHI M.Sc., M.Phil.,)
HEAD OF THE DEPARTMENT
Dept of Comp. Applications,
Sengunthar Arts and Science College,
TIRUCHENGODE.

Submitted for the Project Viva Voce Examination held on
..23.04.2024.....


Internal Examiner


External Examiner
23/4/24

ATTESTED


PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



NoobTron Pvt. Ltd

ISO 9001:2015 Certified

SCIENTIFIC STAY CERTIFICATE

April 01, 2024

TO WHOM IT MAY CONCERN

Re: Ms. BAKKIYALAKSHMI M

This is to certify that, **Ms. BAKKIYALAKSHMI M (C22PG127CAP012)** of Second year, Master of Computer Applications from Sengunthar Arts and Science College, has completed her project of three months from December 11, 2023 to March 30, 2024.

During this period, she got exposure of Research (R&D) project entitled on "**TASK OFFLOADING FOR OBJECT DETECTION BASED ON YOLO**". She has successfully completed all the tasks and assignments given to her. Her performance has been found up to the mark during this project.

We wish best of luck for her Future Endeavours.

Sincerely,

Mr. Balaji Ramachandran
Chief Executive Officer
NoobTron Private Limited, India.

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SYNOPSIS

Mobile edge computing (MEC), which sinks the functions of cloud servers, has become an emerging paradigm to solve the contradiction between delay-sensitive tasks and resource-constrained terminals. Task offloading assisted by service caching in a collaborative manner can reduce delay and balance the edge load in MEC.

Some existing work has noticed that the data size of offloaded tasks played a role in resource allocation shares but has not delved further into how the data size of an offloaded task affects resource allocation. Among offloaded tasks, those with larger data sizes often consume a larger share of system resources, potentially even monopolizing system resources if the data size is large enough. As a result, tasks with small or regular sizes lose the opportunity to be offloaded to the edge due to their limited data size.

The contributions of this paper are three-fold: first, we developed a Heterogeneity-Aware Runtime Layer to fully utilize vehicles heterogeneous computing resources to fulfill the real-time requirement of autonomous driving applications; second, we developed a vehicle-edge Coordinator to dynamically offload vehicle tasks to edge cloudlet to further optimize user experience in the way of prolonged battery life; third, we successfully integrated these components into system and implemented it on Android Mobile.

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TIRUCHENGODE - 637 205.

4.1 CONCLUSION

In this report we have presented an approach to building an object detection CNN for use on mobile devices. Utilizing multiple base models and object detection frameworks, we successfully trained and implemented a variety of models that could be used for real-time detection of notes in an Android application. Using Transfer Learning, the network could be trained on a relatively small amount of data while still achieving high MAP scores. Our results conclude that ML models are viable for deployment on mobile devices in terms of inference time and accuracy and can provide a heuristic based corner-detection algorithm with bounding boxes of high recall.

This paper presents a framework to increase the robustness of object detection algorithms in mobile devices through utilizing the computational capabilities of the cloud. A demo is implemented in both of mobile and cloud to validate the framework applicability. The experiments are conducted using different data sizes and two network types to study the framework performance in different situations. Results show that the response time speedup reaches few times and the energy consumption saving approaches 80% for small images. Moreover, a stable network connection is important because a significant share of the response time and consumed energy is spent in communications.

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SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**OPTIMIZING ENERGY AND TIME IN IMAGE SIMILARITY
TASK OFFLOADING: A STATISTICAL APPROACH**

A Project Work submitted in partial fulfillment of the
requirements for the award of the degree of

Master of Computer Applications

to the

Periyar University, Salem-11

by

C.MEENATCHI

REG.NO:C22PG127CAP013

Under the Guidance of

Mrs. P. GAYATHRIDEVI M.Sc(IT)., M.Phil., M.A(Yoga)



DEPARTMENT OF COMPUTER APPLICATIONS

SENGUNTHAR ARTS AND SCIENCE COLLEGE

(AFFILIATED TO PERIYAR UNIVERSITY)

TIRUCHENGODE-637205

APRIL-2024

ATTESTED

**PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**

CERTIFICATE

This is to certify that the Project Work entitled "OPTIMIZING ENERGY AND TIME IN IMAGE SIMILARITY TASK OFFLOADING: A STATISTICAL APPROACH" submitted in partial fulfillment of the requirements of the award of the degree of Master of Computer Applications to the Periyar University, Salem is a record of bonafide work carried out by **C.MEENATCHI** Reg.No:C22PG127CAP013 under my supervision and guidance.

Place: Tiruchengode

Date: 23.04.2024


Internal Guide

(Mrs.P.GAYATHRIDEVI M.Sc(IT),M.Phil., M.A(Yoga))


Head of the Department

(Mrs. R.BHARATHI M.Sc., M.Phil.,)

HEAD OF THE DEPARTMENT

Dept of Comp. Applications,
Sengunthar Arts and Science College,
TIRUCHENGODE.

Submitted for the Project Viva Voce Examination held on
23.04.2024.....


Internal Examiner


External Examiner

ATTESTED


PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



NoobTron Pvt. Ltd

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SCIENTIFIC STAY CERTIFICATE

April 01, 2024

TO WHOM IT MAY CONCERN

Re: Ms. MEENATCHI C

This is to certify that, **Ms. MEENATCHI C (C22PG127CAP013)** of Second year, Master of Computer Applications from Sengunthar Arts and Science College, has completed her project of three months from December 11, 2023 to March 30, 2024.

During this period, she got exposure of Research (R&D) project entitled on "**OPTIMIZING ENERGY AND TIME IN IMAGE SIMILARITY TASK OFFLOADING: A STATISTICAL APPROACH**". She has successfully completed all the tasks and assignments given to her. Her performance has been found up to the mark during this project.

We wish best of luck for her Future Endeavours.

Sincerely,

Mr. Balaji Ramachandran
Chief Executive Officer
NoobTron Private Limited, India.

ATTESTED

PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SYNOPSIS

In mobile edge computing (MEC), mobile devices can choose to offload their tasks to edge servers for execution, thereby effectively reducing the completion time of tasks and energy consumption of mobile devices.

Due to the limited storage resources of edge servers, it is a significant issue to develop a dynamical service caching strategy according to the actual variable user demands in task offloading. Therefore, this paper investigates the collaborative task offloading problem assisted by a dynamical caching strategy in MEC.

The development of computer hardware and communications has brought with it many exciting applications in the Internet of Things. More and more Single Board Computers (SBC) with high performance and low power consumption are used to infer deep learning models at the edge of the network. In this article, we investigate a cooperative task execution system in an edge computing architecture. In our topology, the edge server offloads different workloads to end devices, which collaboratively execute image similarity on the transmitted sets of images. Our proposed system attempts to provide optimization in terms of execution accuracy and execution time for inferencing statistical approach. Furthermore, we focus on implementing new policies to optimize the execution time and the execution accuracy of the system by highlighting the key role of effective image similarity and the batch sizes (splitting decisions) received by the end devices from a server at the network edge.

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4.1 CONCLUSION

In this work, we proposed and developed a cooperative task execution of an edge-assisted object detector system and presented how to optimal deliver (offload) batches of images to minimize the latency or maximize the execution accuracy of the system. Our purpose was to design an edge-assisted image similarity detection that is tailored around the needs of the user to minimize the execution time or to maximize the accuracy. After presenting our two optimization problems to solve them, we followed an experimental approach by testing all the possible configurations of the parameter which affect the system performance (execution time, accuracy).

Regarding the comparison of the applied image similarity measures, the more consistent results and clearer distinctions between classes are found compared to the use of the SSIM measure. There is a significant correlation among these measures which provided redundant information, as the same main trends are seen in the results for all three measures. However, it seems that using only a single image similarity measure in the present form would not provide enough information in order to develop a fully functional parametric classifier based on image similarity values. In order to develop such a classifier that can provide comparable results to those based on statistical approach, it would be necessary to obtain more reliable and consistent information from image similarity estimation.

In the Future, there has always been a semantic gap in the field of image similarity measurement. Although the deep convolutional neural network can express the image information efficiently by simulating the thinking mode of the human brain, it narrows the gap between the machine and the human body in the semantic understanding, and better handles the semantic gap, but it is not really the semantics similarity. In the future, we can attempt to train the network model through multi-label learning or combining the semantic information contained in the image, so that we can really narrow the semantic gap.

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TIRUCHENGODE - 637 205.

CELL PHONE OPERATED MOBILE BUG USING IOT

A Project Work submitted in partial fulfillment of the requirements
for the award of the degree of

Master of Computer Applications

to the

Periyar University, Salem-11

By

S.NAVEENA

REG.NO:C22PGI27CAP014

Under the Guidance of

Mrs.P.GAYATHIRIDEVI MSc., M.Phil., M.A(YOGA),.



DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

SENGUNTHAR ARTS AND SCIENCE COLLEGE

(AFFILIATED TO PERIYAR UNIVERSITY)

TIRUCHENGODE-637205

NOVEMBER-2023

ATTESTED

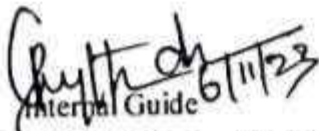

PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205,

CERTIFICATE

It is to certify that the Project Work entitled "CELL PHONE OPERATED MOBILE BUG USING
IT" submitted in partial fulfillment of the requirements of the award of the degree of Master of Computer
Applications to the Periyar University, Salem is a record of bonafide work carried out by
NAVEENAREg.No:C22PG127CAP014 under my supervision and guidance.

Place: Tiruchengode

Date: 06.11.23


Internal Guide

Mrs. P. GAYATHRIDEVI M.Sc., M.Phil., M.A (YOGA)


Head of the Department

(Mrs. R. BHARATHI M.Sc., M.Phil.)

Submitted for the Project Viva Voce Examination held on 06.11.23.....


Internal Examiner


External Examiner

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

ABSTRACT

These days the most problem of world is unauthorized use of mobile phones in prohibited areas like confidential rooms, prisons, colleges, schools, hospitals, petrol bunks etc. There is great need to limit the use of mobile phone at particular places and at particular times. Hence, the use of intelligent mobile phone detector is guaranteed. The main scope of this project is to develop an embedded system, which is used to detect the use of mobile in our surrounding using microcontroller and sends information to monitor section using zigbees. The objectives of the system are-To develop an embedded system, which is used to detect the mobile in our surrounding using microcontroller and sends information to monitor section using zigbees. To prevent use of mobile phones in confidential rooms, etc.

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TIRUCHENGODE - 637 205.

4.1 Conclusion

This pocket-size mobile transmission detector or Sniffer can sense the presence of an activated mobile cell phone from a distance of one and-a-half meters. So it can be used to prevent use of mobile phones in private meetings, defence establishments, confidential rooms. Military camp and sends information to administration room.

The proposed framework defeats the disadvantages of the past actualized frameworks. In this project we examine about shrewd home and ecological screen framework from a few viewpoints, for example, IoT. A few analysts have proposed distinctive strategies for home computerization. In keen natural screen framework, IOTs perform superior to Bluetooth, ZigBee, GSM and SMS. In future proposed framework will be useful to spare vitality in keen way and furthermore it will be helpful for impaired people groups to control home cleverly utilizing any savvy gadget. This proposed framework will perform essential job in making India advanced. It will likewise contribute up to some degree in government based "Digital India" venture. This undertaking can be additionally reached out to voice- controlled component.

ATTESTED



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SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**UNIFIED SCHEDULING APPROACH FOR SECURE
COMPUTATION OFFLOADING AND MALICIOUS URL
DETECTION**

A Project Work submitted in partial fulfillment of the
requirements for the award of the degree of

Master of Computer Applications

to the

Periyar University, Salem-11

by

R.SRINIVETHA

REG.NO:C22PG127CAP015

Under the Guidance of

Mrs. T. GAYATHRI MCA., M.Phil.,



DEPARTMENT OF COMPUTER APPLICATIONS

SENGUNTHAR ARTS AND SCIENCE COLLEGE

(AFFILLIATED TO PERIYAR UNIVERSITY)

TIRUCHENGODE-637205

APRIL – 2024

ATTESTED

**PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**

CERTIFICATE

This is to certify that the Project Work entitled **"Unified Scheduling Approach for Secure Computation Offloading and Malicious URL Detection"** submitted in partial fulfillment of the requirements of the award of the degree of Master of Computer Applications to the Periyar University, Salem is a record of bonafide work carried out by **R.SRINIVETHA** Reg.No:C22PG127CAP015 under my supervision and guidance.

Place: Tiruchengode

Date: 23.04.2024


Internal Guide

(Mrs.T.GAYATHRI MCA., M.Phil.,)


Head of the Department

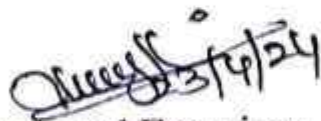
(Mrs.R.BHARATHI M.Sc., M.Phil.,)

HEAD OF THE DEPARTMENT

Dept of Comp. Applications,
Sengunthar Arts and Science College,

TIRUCHENGODE.

Submitted for the Project Viva Voce Examination held on
....23.04.2024:....


Internal Examiner


External Examiner

ATTESTED


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SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



NoobTron Pvt. Ltd.
— Web Design & Technology —
ISO 9001:2015 Certified

SCIENTIFIC STAY CERTIFICATE

April 01, 2024

TO WHOM IT MAY CONCERN

Re: Ms. SRINIVETHA R

This is to certify that, **Ms. SRINIVETHA R (C22PG127CAP015)** a Second year, Master of Computer Applications from Sengunthar Arts and Science College, has completed her project of three months from December 11, 2023 to March 30, 2024.

During this period, she got exposure of Research (R&D) project entitled on **"UNIFIED SCHEDULING APPROACH FOR SECURE COMPUTATIONAL OFFLOADING AND MALICIOUS URL DETECTION"**. She has successfully completed all the tasks and assignments given to her. Her performance has been found up to the mark during this project.

We wish best of luck for her Future Endeavours.

Sincerely,

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

Mr. Balaji Ramachandran
Chief Executive Officer
NoobTron Private Limited, India.



SYNOPSIS

Offloading has emerged as a promising idea to allow handheld devices to access intensive applications without performance or energy costs. This could be particularly useful for enterprises seeking to run line-of-business applications on handhelds. However, we must address two practical roadblocks in order to make offloading amenable for enterprises:

However, developing applications using cloud computing resources is tricky because it involves orchestrating highly dynamic, heterogeneous resources at different levels of network hierarchy to support low latency and scalability requirements of applications. To ease such complexity, this application presents programming model, that provides a simplified programming abstraction and supports applications dynamically scaling at runtime.

The goal of offloading is to take decision to offload or not to offload. Code Offloading is able to take a decision on variety of ways. Many researches in code offloading has been centred on the more sophisticated if else condition. Currently, machine learning for code offloading is an important research issue at present. Machine Learning method is used to achieve substantial improvements over the currently preferred methods, and behave robustly whilst tackling a variety of different learning tasks.

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TIRUCHENGODE - 637 205.

4.1 CONCLUSION

In this system, we proposed a framework for partial computation offloading to determine the energy optimal amount of data to be offloaded to MECS. Application and network parameters significantly influence the offloading decisions and are taken into account by the proposed framework. This work encompasses all the significant energy consuming units; Radio, Codec, and Local computation units to obtain a more precise partial offload configuration. We have also evaluated the energy efficiency of using compression to reduce transmitted data. It is observed that using compression, in spite of additional energy consumption of itself, is an energy saving option for compute intensive MEC applications. For the energy optimal offload configuration obtained by using the proposed framework.

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SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

BRAIN TUMOUR DETECTING AND CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORKS AND GORILLA TROOPS OPTIMIZATION ALGORITHM

A project report submitted in partial fulfillment of the requirements for the award of
the degree of

MASTER OF SCIENCE IN COMPUTER SCIENCE

to the

Periyar University, Salem – 11

By

A.HARIPRIYA

Reg. No: C22PG127CSC002

Under the Guidance of

Mr.P.BALAMURUGAN M.Sc.,M.Phil.,



DEPARTMENT OF COMPUTER SCIENCE

SENGUNTHAR ARTS AND SCIENCE COLLEGE

(AFFILIATED TO PERIYAR UNIVERSITY)

TIRUCHENGODE – 637 205

APRIL- 2024

ATTESTED

**PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**

SENGUNTHAR ARTS AND SCIENCE COLLEGE

TIRUCHENGODE – 637 205

CERTIFICATE

This is to certify that the project report entitled "BRAIN TUMOUR DETECTING AND CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORKS AND GORILLA TROOPS OPTIMIZATION ALGORITHM" submitted in partial fulfillment of the requirement for the degree of Master of Science in Computer Science to the Periyar University, Salem is a record of bonafide work carried out by A.HARIPRIYA Register No: C21PG127CSC002 under supervision and guidance.

Place : Tiruchengode

Date : 23.04.2024



SIGNATURE OF THE GUIDE
(Mr.P.BALAMURUGAN M.Sc.,M.Phil.,)



HEAD OF THE DEPARTMENT
(Mr.P.BALAMURUGAN M.Sc.,M.Phil.,)
Mr. P. BALAMURUGAN M.Sc., M.Phil.
Head of the Department,
Department of Computer Science,
Sengunthar Arts and Science College,
TIRUCHENGODE - 637 205.

Submitted for the Viva-voce Examination held on 23.04.2024

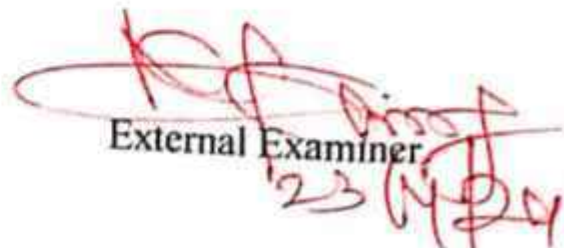


Internal Examiner

ATTESTED



PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



External Examiner
23/4/24



NoobTron Pvt. Ltd

ISO 9001:2015 Certified

SCIENTIFIC STAY CERTIFICATE

April 01, 2024

TO WHOM IT MAY CONCERN

Re: Ms. HARIPRIYA A

This is to certify that, **Ms. HARIPRIYA A (C22PG127CSC002)** of Second year, Master of Computer Science from Sengunthar Arts and Science College, has completed her internship of three months from December 11, 2023 to March 30, 2024.

During this intern, she got exposure of various Research (R&D) project entitled on "**BRAIN TUMOUR DETECTING AND CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORKS AND GORILLA TROOPS OPTIMIZATION ALGORITHM**". She has successfully completed all the tasks and assignments given to her. Her performance has been found up to the mark during internship period.

We wish best of luck for her Future Endeavours.

Sincerely,

Mr. Balaji Ramachandran
Chief Executive Officer
NoobTron Private Limited, India.

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



4.1 CONCLUSION

The combination of CNNs and GTO is a promising approach for brain tumor detection. The results of this study indicate that the accuracy of the detection system can be improved significantly by using GTO to optimize the hyperparameters of the CNN model. The proposed detection system can lead to better diagnosis and treatment strategies for brain tumor patients. Further research should focus on the development of more advanced algorithms for brain tumor detection and improve the accuracy and efficiency of the proposed system.

Brain tumor detection is an important research topic in neuro-oncology, and advanced algorithms are needed to improve the accuracy and efficiency of detection systems. This study proposes a combination of CNNs and GTO-based model for brain tumor detection. The GTO algorithm is used to optimize the hyperparameters of the CNN model, leading to significant accuracy improvements. The proposed detection system has the potential to significantly reduce the number of misdiagnosed cases, leading to early detection and improved patient outcomes. The results of this study contribute to the development of new techniques in neuro-oncology, promoting better diagnosis and Treatment strategies for brain tumor patients.

ATTESTED



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SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



தமிழ்நாடு தமில்நாடு TAMILNADU Rs 100/-

DA 028098

N. Janarthanan

C.R. Mushroom Farms - vadugam

Sengunthar CR MUSHROOM FARMS AND LABS

N. JANARTHANAN SV
L.No. 6424 / 15 / 97

(MSME Regd. No:UDYAM-TN-14-0032830) 65, Cutcherry Street, Rasipuram

Date: 23.06.2023

MEMORANDUM OF UNDERSTANDING (MOU)

BETWEEN

SENGUNTHAR ARTS AND SCIENCE COLLEGE

AND

CR MUSHROOM FARMS AND LABS

The MOU is entered into agreement on CR Mushroom Farms and Labs between Sengunthar Arts and Science College (Department of Biotechnology), Tiruchengode and CR Mushroom Farms and Labs with its registered office Rasipuram.

1. OBJECTIVES OF THE MOU

The objective of this Memorandum of Understanding is:

- To promote interaction between Sengunthar Arts and Science College (Department of Biotechnology) and CR Mushroom Farms and Labs in mutually beneficial areas.

- b. To work on collaborative research projects of mutual interest

2. PROPOSED MODES OF COLLABORATION

Sengunthar Arts and Science College, Department of Biotechnology and CR Mushroom Farms and Labs propose collaborate through

- a. Sponsoring projects/ fellowships/ miniproject / internship for B.Sc., M.Sc, &M.Phil students at Sengunthar Arts and Science College.
- b. Sponsoring eligible employees of **CR Mushroom Farms and Labs** for doing M.Sc., M.Phil. degrees at **Sengunthar Arts and Science College**. The eligibility criteria for selection will be as per norms of Periyar University.
- c. Sponsoring R&D projects, which may be carried out wholly at **Sengunthar Arts and Science College (Department of Biotechnology)** or at premises of **CR Mushroom Farms and Labs** or partly at **Sengunthar Arts and Science College (Department of Biotechnology)**.
- d. Training of **CR Mushroom Farms and Labs** personnel through Continuing Education Programmes conducted by **Sengunthar Arts and Science College (Department of Biotechnology)** in areas of interest to **CR Mushroom Farms and Labs**.
- e. Any other appropriate mode of interaction agreed upon between **Sengunthar Arts and Science College (Department of Biotechnology)**, Tiruchengode and **CR Mushroom Farms and Labs**, Rasipuram.

Each of the above modes of interaction will be initiated by entering into a separate agreement between the two parties.

3. RESEARCH AND DEVELOPMENT PROGRAMS

The form of any of the said Research and Development Program will be subject to a separate Research Agreement entered into by the Parties but may also include the following:

- a. In their own existing facilities - The performance of research individually by each Party or concurrently by both Parties in mixed groups at their own facilities with regular exchanges of results.

- b. In a separate research and development facility - The performance of research by the technical personnel of both Parties working together in the facilities of one Party or in mixed groups at the facilities supported/ sponsored by either Party.

4. TECHNICAL AREAS OF COLLABORATION

- a. The areas of co-operation will be defined and modified from time to time by the co-operation committee set up for the purpose.
- b. The areas identified for co-operation are Manufacture of Sugar, Various types of Ethanol Production and Generation of Electricity.

5. AGREEMENTS FOR RESEARCH COLLABORATION

Each research collaboration undertaken by the parties hereunder shall be initiated by the signing of a separate research agreement between the parties, which will describe in detail:

- a. the nature, scope and schedule of the research collaboration.
- b. the form of the research collaboration.
- c. the estimated cost of the research collaboration together with the amount of funding, if any, to be received from third parties.
- d. the treatment of intellectual property and data rights, including patents, industrial design registration, copyrights and all other proprietary information which result from the research collaboration and are used in research collaboration.

6. CONFIDENTIALITY

- a. Each party agrees to consider all information as confidential disclosed by the other party in written or tangible form or, if orally disclosed confirmed in writing within thirty days of disclosure and identified as confidential by the disclosing party.
- b. It is understood by the Parties herein this MOU is based on the professional competence and expertise of each party and hence neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party

7. TERMS AND TERMINATION LY

- a. This MOU, unless extended by mutual written agreement of the parties, shall expire FIVE years after the effective date specified in the opening paragraph.
- b. This MOU may be amended or terminated earlier by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 90days prior written notice to the other party.

8. RELATIONSHIP

- a. Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose

9. COSTS OF THE MOU

- a. Each Party shall bear the respective costs of carrying out the obligations under this MOU.

10. SIGNED COPIES (DUPLICATE)

- a. This MOU is signed in duplicate with each copy being an official version and having equal legal validity
- b. This MOU is signed below by the duly authorized officers of the both parties.

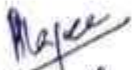

This MOU to be executed, is effective as of the day and Year as mentioned above.

On behalf of

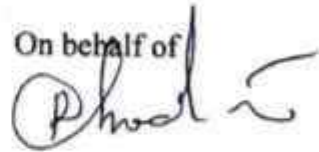


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

Witness

1. 
2. 

On behalf of



Dr. R. CHANDRASEKARAN, M.S., Ph.D.,
DIRECTOR
CR MUSHROOM FARMS AND LABS
1/36, NORTH STREET, VADUGAM
RASIPURAM, NAMAIKKAL.




SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC A+
Tiruchengode – 637 205, Namakkal dt., Tamilnadu



INTERNSHIP DETAILS 2023-2024
DEPARTMENT OF BIOTECHNOLOGY

S.N o.	Roll No.	NAME OF THE STUDENT	CLASS	NAME OF THE COMPANY
1.	22PBT1301	P.ASHOK	II M.Sc BIOTECHNOLOGY	CR Mushroom Farm And Lab,RASIURAM
2.	22PBT1302	M.DINESHKUMAR	II M.Sc BIOTECHNOLOGY	CR Mushroom Farm And Lab,RASIURAM
3.	22PBT1303	S.PRAKASH	II M.Sc BIOTECHNOLOGY	CR Mushroom Farm And Lab,RASIURAM
4.	22PBT1304	C.M. SOUNDHARRAJAN	II M.Sc BIOTECHNOLOGY	CR Mushroom Farm And Lab,RASIURAM
5.	22PBT1305	P.VIJAY	II M.Sc BIOTECHNOLOGY	CR Mushroom Farm And Lab,RASIURAM
6.	22PBT1306	M.KAVIRANJANI	II M.Sc BIOTECHNOLOGY	CR Mushroom Farm And Lab,RASIURAM
7.	22PBT1307	R.MAIVIZHI	II M.Sc BIOTECHNOLOGY	CR Mushroom Farm And Lab,RASIURAM
8.	22PBT1309	K.VAISHALI	II M.Sc BIOTECHNOLOGY	CR Mushroom Farm And Lab,RASIURAM


HOD 22/7/2023


PRINCIPAL

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



CR MUSHROOM FARMS AND LABS

(1/36, NORTH STREET, VADUGAM, RASIPURAM, TAMIL-NADU, INDIA)

DR. R. CHANDRASEKARAN M.SC., PH.D
DIRECTOR

DATE:10.07.2023

INTERNSHIP CERTIFICATE

This is to certify that Mr. P. Ashok (22PBT1301) I M. Sc Biotechnology of Sengunthar Arts and Science College, Tiruchengode, Namakkal, Tamilnadu, successfully completed a internship in the field of Mushroom Cultivation from 24.06.2023 to 10.07.2023. During the period of her/his internship, She/he had been exposed to different processes and was found diligent an inquisitive. We wish her/him every success in all her/his endeavors.

DIRECTOR

Dr. R. CHANDRASEKARAN, M.S. Ph.D.,
DIRECTOR
CR MUSHROOM FARMS AND LABS
1/36, NORTH STREET, VADUGAM
RASIPURAM, NAMAKKAL

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



CR MUSHROOM FARMS AND LABS

(1/36, NORTH STREET, VADUGAM, RASIPURAM, TAMIL-NADU, INDIA)

DR. R. CHANDRASEKARAN M.SC., PH.D
DIRECTOR

DATE: 10.07.2023

INTERNSHIP CERTIFICATE

This is to certify that Mr.M. Dineshkumar (22PBT1302) I M. Sc Biotechnology of Sengunthar Arts and Science College, Tiruchengode, Namakkal, Tamilnadu, successfully completed a internship in the field of Mushroom Cultivation from 24.06.2023 to 10.07.2023. During the period of her/his internship, She/he had been exposed to different processes and was found diligent and inquisitive. We wish her/him every success in all her/his endeavors.

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



DIRECTOR

Dr. R. CHANDRASEKARAN, M.S., PH.D.,
DIRECTOR
CR MUSHROOM FARMS AND LABS
1/36, NORTH STREET, VADUGAM
RASIPURAM, NAMAKKAL.



CR MUSHROOM FARMS AND LABS

(1/30, NORTH STREET, VADUGAM, RASIPURAM, TAMIL NADU, INDIA)

DR. R. CHANDRASEKARAN M.SC., PH.D
DIRECTOR

DATE: 10.07.2023

INTERNSHIP CERTIFICATE

This is to certify that Mr. S. Prakash (22PBT1303) I M. Sc Biotechnology of Sengunthar Arts and Science College, Tiruchengode, Namakkal, Tamilnadu, successfully completed a internship in the field of Mushroom Cultivation from 24.06.2023 to 10.07.2023. During the period of her/his internship, She/he had been exposed to different processes and was found diligent an inquisitive. We wish her/him every success in all her/his endeavors.

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

DIRECTOR

Dr. R. CHANDRASEKARAN, M.S. Ph.D.,
DIRECTOR
CR MUSHROOM FARMS AND LABS
1/30, NORTH STREET, VADUGAM
RASIPURAM, NAMAKKAL



CR MUSHROOM FARMS AND LABS

(1/36, NORTH STREET, VADUGAM, RASIPURAM, TAMIL-NADU, INDIA)

DR. R. CHANDRASEKARAN M.SC., PH.D
DIRECTOR

DATE: 10.07.2023

INTERNSHIP CERTIFICATE

This is to certify that Mr. C.M. Soundarrajan (22PBT1304) I M. Sc Biotechnology of Sengunthar Arts and Science College, Tiruchengode, Namakkal, Tamilnadu, successfully completed a internship in the field of Mushroom Cultivation from 24.06.2023 to 10.07.2023. During the period of her/his internship, She/he had been exposed to different processes and was found diligent an inquisitive. We wish her/him every success in all her/his endeavors.

DIRECTOR

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

Dr. R. CHANDRASEKARAN, M.Sc., Ph.D.
DIRECTOR
CR MUSHROOM FARMS AND LABS
1/36, NORTH STREET, VADUGAM
RASIPURAM, NAMAKKAL



DEEPAA MICRO LAB

Sw... Health begins here

INTERNSHIP CERTIFICATE

DATE: 28.06.2023

NAME : MR. VIJAY.P [22PBT1305]
DEPARTMENT : M.Sc. BIOTECHNOLOGY.,
YEAR : I YEAR
COLLEGE NAME : SENGUNTHAR ARTS AND SCIENCE COLLEGE
PERIOD : (10.06.2023 TO 25.06.2023)

This is to certify that MR. VIJAY.P has undergone training in DEEPAA MICRO LAB (A unit of Shalimar agency/deepaa medicals group) at DHARMAPURI date from 10/06/2023 TO 25/06/2023.

He has trained in Departments of Bio-chemistry, Serology, Microbiology and Clinical pathology in our laboratory.

We wish all the best for his future career.

Mr. A. KRISHNAMOORTHY M.Sc.,

(Bio-chemist) chief of laboratory service

DEEPAA MICRO LAB

20, Pavadal Street,
Opp. Kalaimagal Kalvi Nilayam,
ERODE - 638 001.
Ph: 0424 2250504, 99428 60854.

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

Dr. R. Renuga M.D.,
(Consultant Pathologist)

Dr. S. Nirmaladevi M.D.,
(Consultant Microbiologist)

Mr. A. Krishna Moorthy M.Sc.,
(Bio-Chemist) Chief of Laboratory Service

ERODE • SALEM • ROSUR • DHARMAPURI • NAMAKKAL • KARUR • TIRUPUR • KATPADI • VANDIYAR • ANANDAPURAM • ARANYANKOTTA • TIRUCHENGODE • KANNIYAKUMARI • KANNIYAKUMARI



CR MUSHROOM FARMS AND LABS

(1/36, NORTH STREET, VADUGAM, RASIPURAM, TAMIL-NADU, INDIA)

DR. R. CHANDRASEKARAN M.Sc., Ph.D.
DIRECTOR

DATE: 10.07.2023

INTERNSHIP CERTIFICATE

This is to certify that Ms. M. Kaviranjani (22PBT1306) B.Sc. Biotechnology of Sengunthar Arts and Science College, Tiruchengode, Namakkal, Tamilnadu, successfully completed a internship in the field of Mushroom Cultivation from 24.06.2023 to 10.07.2023. During the period of her/his internship, She/he had been exposed to different processes and was found diligent and inquisitive. We wish her/him every success in all her/his endeavors.

ATTESTED

PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

DIRECTOR

Dr. R. CHANDRASEKARAN, M.Sc. Ph.D.,
DIRECTOR
CR MUSHROOM FARMS AND LABS
1/36, NORTH STREET, VADUGAM
RASIPURAM, NAMAKKAL



CR MUSHROOM FARMS AND LABS

(1/36, NORTH STREET, VADUGAM, RASIPURAM, TAMIL NADU, INDIA)

DR. R. CHANDRASEKARAN M.SC., PH.D
DIRECTOR

DATE: 10.07.2023

INTERNSHIP CERTIFICATE

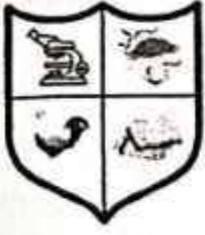
This is to certify that **Ms. R. Maivizhi (22PBT1307) I M. Sc Biotechnology** of **Sengunthar Arts and Science College, Tiruchengode, Namakkal, Tamilnadu**, successfully completed a internship in the field of **Mushroom Cultivation** from **24.06.2023** to **10.07.2023**. During the period of her/his internship, She/he had been exposed to different processes and was found diligent and inquisitive. We wish her/him every success in all her/his endeavors.

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

DIRECTOR

Dr. R. CHANDRASEKARAN, M.S., Ph.D.,
DIRECTOR
CR MUSHROOM FARMS AND LABS
1/36, NORTH STREET, VADUGAM
RASIPURAM, NAMAKKAL.



CR MUSHROOM FARMS AND LABS

11/36 NORTH STREET, VADUGAM RASIPURAM, NAMAKKAL - 637 205

DR. R. CHANDRASEKARAN M.SC., PH.D
DIRECTOR

DATE: 10.07.2023

INTERNSHIP CERTIFICATE

This is to certify that **Ms. K. Vaishali (22PBT1309)** I M. Sc Biotechnology of Sengunthar Arts and Science College, Tiruchengode, Namakkal, Tamilnadu, successfully completed a internship in the field of Mushroom Cultivation from **24.06.2023** to **10.07.2023**. During the period of her/his internship, She/he had been exposed to different processes and was found diligent an inquisitive. We wish her/him every success in all her/his endeavors.

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

DIRECTOR

Dr. R. CHANDRASEKARAN, M.S., Ph.D.,
DIRECTOR
CR MUSHROOM FARMS AND LABS
1/36, NORTH STREET, VADUGAM
RASIPURAM, NAMAKKAL.



தமிழ்நாடு தமில்நாடு TAMILNADU

27/02/2023 Remura Biologicals
Krishnagiri.

CU 100916
G. Prem Kumar
S.V.L.C. 3382/97/B1
KRISHNAGIRI, TAMIL NADU.



REMURA BIOLOGICALS

(SCIENTIFIC INCUBATOR OFFICE)

(Regd. No: 33283306910; MSME-UAM. No: TN11A0018027; IAC: 172)

MEMORANDUM OF UNDERSTANDING (MOU)

BETWEEN

SENGUNTHAR ARTS AND SCIENCE COLLEGE

AND

REMURA BIOLOGICALS COMPANY

Date:

The MOU is entered into agreement on Remura Biologicals between Sengunthar Arts and Science College, Tiruchengode and Remura Biologicals with its registered office Krishnagiri.

1. OBJECTIVES OF THE MOU

The objective of this Memorandum of Understanding is:

- To promote interaction between Sengunthar Arts and Science College (Department of Biotechnology) and Remura Biologicals in mutually beneficial areas.
- To work on collaborative research projects of mutual interest

2. PROPOSED MODES OF COLLABORATION

a. **Sengunthar Arts and Science College, Department of Biotechnology and Remura Biologicals** propose collaborate through a Sponsoring projects/ fellowships/ miniproject / internship for B.Sc., M.Sc. & M.Phil students at **Sengunthar Arts and Science College**.

b. Sponsoring eligible employees of **Remura Biologicals** for doing MSc.,

M.Phil. degrees at **Sengunthar Arts and Science College**. The eligibility criteria for selection will be as per norms of Periyar University.

c. Sponsoring R&D projects, which may be carried out wholly at **Sengunthar Arts and Science College (Department of Biotechnology)** or at premises of **Remura Biologicals** or partly at **Sengunthar Arts and Science College (Department of Biotechnology)**.

d. Training of **Remura Biologicals** personnel through Continuing Education

Programmes conducted by **Sengunthar Arts and Science College (Department of Biotechnology)** in areas of interest to **Remura Biologicals**.

e. Any other appropriate mode of interaction agreed upon between **Sengunthar Arts and Science College (Department of Biotechnology)**, Tiruchengode and **Remura Biologicals**, Krishnagiri.

Each of the above modes of interaction will be initiated by entering into a separate agreement between the two parties.

3. RESEARCH AND DEVELOPMENT PROGRAMS

The form of any of the said Research and Development Program will be subject to a separate Research Agreement entered into by the Parties but may also include the following:

a. In their own existing facilities - The performance of research individually by each Party or concurrently by both Parties in mixed groups at their own facilities with regular exchanges of results.

b. In a separate research and development facility - The performance of research by the technical personnel of both Parties working together in the facilities of one

Party or in mixed groups at the facilities supported/ sponsored by either Party.

4. TECHNICAL AREAS OF COLLABORATION

a. The areas of co-operation will be defined and modified from time to time by the co-operation committee set up for the purpose.

b. The areas identified for co-operation are Manufacture of Sugar, Various types of Ethanol Production and Generation of Bio Electricity.

5. AGREEMENTS FOR RESEARCH COLLABORATION

a. Each research collaboration undertaken by the parties hereunder shall be initiated by the signing of a separate research agreement between the parties, which will describe in detail: a. the nature, scope and schedule of the research collaboration.

b. The form of the research collaboration.

c. The estimated cost of the research collaboration together with the amount of funding, if any, to be received from third parties.

d. The treatment of intellectual property and data rights, including patents, industrial design registration, copyrights and all other proprietary information which result from the research collaboration and are used in research collaboration.

6. CONFIDENTIALITY

a. Each party agrees to consider all information as confidential disclosed by the other party in written or tangible form or, if orally disclosed confirmed in writing within thirty days of disclosure and identified as confidential by the disclosing party.

b. It is understood by the Parties herein this MOU is based on the professional competence and expertise of each party and hence neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party

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a. This MOU, unless extended by mutual written agreement of the parties, shall **expire FIVE years** after the effective date specified in the opening paragraph.

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a. Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose

9. COSTS OF THE MOU

a. Each Party shall bear the respective costs of carrying out the obligations under this MOU.


10. SIGNED COPIES (DUPLICATE)

a. This MOU is signed in duplicate with each copy being an official version and having equal legal validity

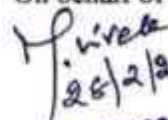
b. This MOU is signed below by the duly authorized officers of the both parties.

This MOU to be executed, is effective as of the day and Year as mentioned above.

On behalf of


PRINCIPAL
JENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

On behalf of


26/2/2013
TIN: 33283306910 IAC. 172
CST: 1153088/30-04-2013
SSI MEM No: 3303121/15491 E, PART -
REMURA BIOLOGICALS
MIG-506, TNHB, Phase-II
Kattiganapalli
K. Krishnagiri-635 001, India (T.N.)

1)  20/2/23

2)  22/2/23

Requisition Letter

From

Dr. S. Sudhakar, Dr. D. Mahendran
Head & Assistant Professor,
PG and Research Department of Biotechnology & Botany,
Sengunthar Arts and Science College,
Tiruchengode - 637 205.

To

The Principal,
Sengunthar Arts and Science College,
Tiruchengode - 637 205.

Respected Sir,

Sub: Requesting to conduct Guest
Lecture - Reg.,

I would like to bring your kind notice,
that we have planned to conduct a "Guest
Lecture Program for International Science Day"
for both Biotechnology & Botany students on
28.02.2023. Mr. Vivek Murali, Founder of Remura
Biologicals, Krishnagiri, has shown his willingness
to give lecture on "OPPORTUNITY IN BIOSCIENCES".
So kindly, permit us to conduct the program.

Thanking You,

Date: 24.02.2023

Place: Tiruchengode.

SS
mshs

ATTESTED

[Signature]

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

Yours Sincerely,

SS
24/2/23

SS
24/2/23



HoD Biotechnology 6 days ago



to Vivek ▾

Respected Sir,

We (Department of Biotechnology & Department of Botany) planned organize one day Guest Lecture Program on 28.02.2023. Hence, we requesting you to act as Guest Speaker on that day. kindly consider our request and do the needful.

Thanking you.

Thanks & Regards,

Dr S.Sudhakar,

Assistant professor & Head,

Department of Biotechnology,

Sengunthar Arts and Science College,

Tiruchengode.

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



Vivek Murali 6 days ago

to me ✓



Dear Sir / Maam,

Greetings!!!

Thank you for your mail and invitation.
I am very glad to accept your request to deliver the Guest
Lecture on 28.02.2023.

Good luck for the event!!!

Thanking You,

Yours Sincerely,
Vivek Murali
Founder,
M/S Remura Biologicals
Krishnagiri, TN, India.

On Sat, Feb 25, 2023, 7:36 PM HoD Biotechnology
<hodbiotechnology@senguarts.co.in> wrote:

Respected Sir,

We (Department of Biotechnology & Department
of Botany) planned organize one day Guest Lecture
Program on 28.02.2023. Hence, we requesting you to act
as Guest Speaker on that day. kindly consider our
request and do the needful.

Thanking you.

Thanks & Regards,

ATTESTED

PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

Requesting Guest Speaker -



Regards **External** Inbox



HoD Biotechnology 6 days ago
to bharubt95 ✓



Respected sir,

We (The Department of Biotechnology & Department of Botany) planned to conduct Guest Lecture program on 28.02.23. Hence, you are requested to act as Guest Speaker on that day. Kindly consider and do the needful. Thanking you.

Thanks and Regards,
Dr.S.Sudhakar,
Assistant professor and Head,
Department of Biotechnology,
Sengunthar Arts and Science College,
Tiruchengode.



Bharathi raja 6 days ago
to me ✓



Dear Sir,

It's my pleasure. I ll be there on time and will deliver the guest lecture to the students.

Thanks & Regards
Bharathiraja P
Regulatory Affairs
Sunberg Life sciences Pvt Ltd.
Puducherry.

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



HoD Biotechnology Feb 25

Respected sir, We (The Department of Biotechnology & Department of Botany) planned



Bharathi raja 6 days ago

to me ▾



Dear Sir,

It's my pleasure. I ll be there on time and will deliver the guest lecture to the students.

Thanks & Regards
Bharathiraja P
Regulatory Affairs
Sunberg Life sciences Pvt Ltd.
Puducherry.

Show quoted text

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGOODE - 637 205.

Thanks a lot.

Thank you.

Noted.



Since 1991

SENGUNTHAR ARTS AND SCIENCE COLLEGE

(Affiliated to Periyar University, Salem and Approved by
AICTE, New Delhi)

An ISO 9001:2015 Certified Institution
Recognized under section 2(f) and 12(B) of the
UGC Act 1956 Accredited by NAAC

TIRUCHENGODE - 637 205, NAMAKKAL DT.,



PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY AND BOTANY

List of Participants

GUEST LECTURE PROGRAMME ON OPPORTUNITIES

AND ADVANCES IN BIOSCIENCES

DATE: 28/2/2023

I B.Sc., BIOTECHNOLOGY

S.NO	STUDENT NAME	SIGNATURE
1.	ARJUN.A	Arjun.A.
2.	ARUN.S	S. Arun.
3.	BASKAR.V	V. Baskar.
4.	HARIRAJ.D	D. Hariraj
5.	JAYANDHAN.N	N. Jayandhan
6.	KASIPRASATH.P.P	P.P. Kasiprasath
7.	MARIMUTHU. S	S. Marimuthu
8.	NAVIN KUMAR. P	P. Navin Kumar
9.	NITHISHKUMAR. M	M. Nithish Kumar
10.	RAGUNATH V	V. Ragunath
11.	SELLAM SANJEEVAN.A	A. Sellam Sanjeevan
12.	SRIKANTH.D	D. Srikanth
13.	VIJAY.R	R. Vijay
14.	DARIKA.R.V	V. Darika
15.	DHIVYA.B	B. Dhivya
16.	KEERTHANA.K	K. Keerthana
17.	KEERTHIKA.M	M. Keerthika
18.	KOWSALYA.T	T. Kowsalya
19.	LOGAPRIYA.M	M. Logapriya
20.	MADHUMATHI.R	R. Madhumathi
21.	MEGA.K	K. Mega

ATTESTED

PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

22	MOUNIKA.R	P. Mounika
23	NISA.V	V. Nisha
24	ROOBINI.P	P. Roobini
25	SARANYA.R	R. Saranya
26	SHALINI.V	V. Shalini
27	SOWMIYA.V	V. Sowmiya
28	THIVIA.R	R. Thivya
29	VINOTHINI.T	T. Vinodhini

II. B.Sc., BIOTECHNOLOGY

30	GOPINATH.A	A. Gopinath
31	KIRUBAKARAN.L	L. Kirubakaran
32	PRAVINKUMAR.S	S. Pravinkumar
33	MEIYARASU.P	P. Meiyarasu
34	PRASATH.K	K. Prasath
35	BRINDHA.K	K. Brindha
36	KAVINYA.R	R. Kavinya

III. B.Sc., BIOTECHNOLOGY

37	ANAND.V	V. Anand
38	BOOBALAN.R	R. Boobalan
39	KAVINKUMAR.S	S. Kavinkumar
40	KISHORE.R	R. Kishore
41	MURUGAN.T	T. Murugan
42	PRAKASH.S	S. Prakash
43	PRAKASH.S	S. Prakash
44	RITESH.G	G. Ritesh
45	SAIVENU.C	C. Saivenu
46	SINGARAVELL.M	M. Singaravel
47	SUGITHKUMAR.M	M. Sugithkumar
48	TAMILARASAN.S	S. Tamilarasan

ATTESTED



PRINCIPAL,
SENGUNTHAR AIG'S AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

49	VINOTHKUMAR.M	M. V. Jia
50	CHITRA.R	R. Chitra
51	GOMATHI.S	S. Gomathi
52	HEMALATHA.V	V. Hemalatha
53	KALAIVANI.P	P. Kalaiyani
54	KIRUTHIKA.S	S. Kiruthika
55	LAVANYA.B	B. Lavanya
56	MOHANAPRIYA.M	M. Mohanapriya
57	MOUSIYA.V	V. Mousiya
58	PAVITHRA.S	S. Pavithra
59	PRANISHA.S	S. Pranisha
60	PREETHA.R	R. Preetha
61	PREMA.M	M. Prema
62	PRIYADHARSHINI.A	A. Priyadharshini

III B.Sc., BOTANY

63	NETHRA.B	B. Nethra
64	SHARMILA.S	S. Sharmila

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 TIRUCHENGODE - 637 205.


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 TIRUCHENGODE-637 205



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PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY AND BOTANY

GUEST LECTURE PROGRAMME ON OPPORTUNITIES

AND ADVANCES IN BIOSCIENCES

DATE: 28/2/2023

CLASS : II M.Sc., BIOTECHNOLOGY

S.NO	STUDENT NAME	SIGNATURE
1.	M. AJITH	M. Ajith
2.	S. ANNAMALAI	S. Annamalai
3.	A. CHRISTOPHER	A. Christopher
4.	S. GODSONPRABHU	S. Godsonprabhu
5.	M. KAVIYARASU	M. Kaviyarasu
6.	D. SABAREESH	D. Sabareesh
7.	U. AISHWARYA	U. Aishwarya
8.	M. GOKULAPRIYA	M. Gokulapriya
9.	S. SAKTHEESWARI	S. Saktheeswari
10.	L. SUBASHINI	L. Subashini

I M.Sc., BIOTECHNOLOGY

11	ASHOK. P	P. Ashok
12	DINESHKUMAR. M	M. Dineshkumar
13	PRAKASH. S	S. Prakash
14	SOUNDARRAJAN. C.M	C.M. Soundarajan
15	MAIVIZHI. R	R. Maivizhi
16	VAISHALI. K	K. Vaishali

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Report on the Guest Lecture on Opportunities and Advances in Biosciences

Conducted on 28th February 2023

The Guest Lecture on Opportunities and Advances in Biosciences was conducted at Sengunthar Arts and Science College, Tiruchengode on 28/02/2023. The Guest Lecture was jointly organized by Research Department of Biotechnology and Department of Botany. The Guest Lecture was delivered in the M.Sc., conference hall. Over 80 Students were attended the Guest Lecture. The students of I, II, III B.Sc., Biotechnology, I, II M.sc., Biotechnology and III B.Sc., Botany along with staff members attended the programme. Mr.Vivek Murali, Founder, Remura Biogicals, Krishnagiri and Mr.P.Bharathiraja Executive –RA, Regulatory Affairs Sunberg Life Science Pvt.Ltd., Puducherry was the chief guest of the day.

The Program started with prayer song. The Chief Guest & Participants were welcomed by Dr.S.Sudhakar, Head, PG and Research Department of Biotechnology, followed by the program was inaugurated by our respected sir Dr.S.Ravikumar, Principal, Sengunthar Arts and Science College, Tiruchengode with inaugural address. During his inaugural address respected principal explained the opportunities of biosciences and its relevance in these times and its necessity for the advancement in research and development in India.

In Lecture Session I, Mr.P.Bharathiraja Executive –RA, Regulatory Affairs Sun berg Life Science Pvt.Ltd., and Puducherry was delivered the lecture on 'Probiotics'. Probiotics is currently the talk of the hour owing to their varied benefits with respect to healthcare industry. He also spoke about all aspects of probiotics including their origin, types, benefits, applications and current market scenario in Indian and International market. The students received the lecture with extreme enthusiasm and interest. The entire session was highly interactive as students posed a number of queries regarding different issues related to probiotics.

The Lecture Session II was then continued by the eminent speaker, Mr.Vivek Murali, Founder, Remura Biogicals, Krishnagiri. He gave a brief introduction about job opportunities

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in Biotechnology and Botany fields. The session continued with a fun filled activity by mapping various life-science job choices that students proffered. Furthermore, he classified the jobs into classic and non classic jobs. He explained how non classic job choices were easily ignored. He briefed each and every job choices and enlightened the students about various fields. Later he talks about practical learning process. The session ended with a poll on how many were going to select academic job or non academic job or if it was not decided, incidentally students were still figuring out on what they should select. Feedback about the session was given by students, expressing gratitude as they were all intrigued by the talk. The students gained information about various opportunities available to them after their graduation.

The Guest lecture encouraged the students to know the advances in biosciences and opportunities of biotechnology. The students were very much involved in the lecture cum interaction sessions. On the whole the program was very useful for the students. The guest lecture session was ended with a vote of thanks delivered by the Head, Department of Botany, Sengunthar Arts and Science College, Tiruchengode.

S.H.
3/3/23
HOD

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DEPARTMENT OF BIOTECHNOLOGY & BOTANY

Guest Lecture Programme

On

Opportunity and Advances in Bioscience



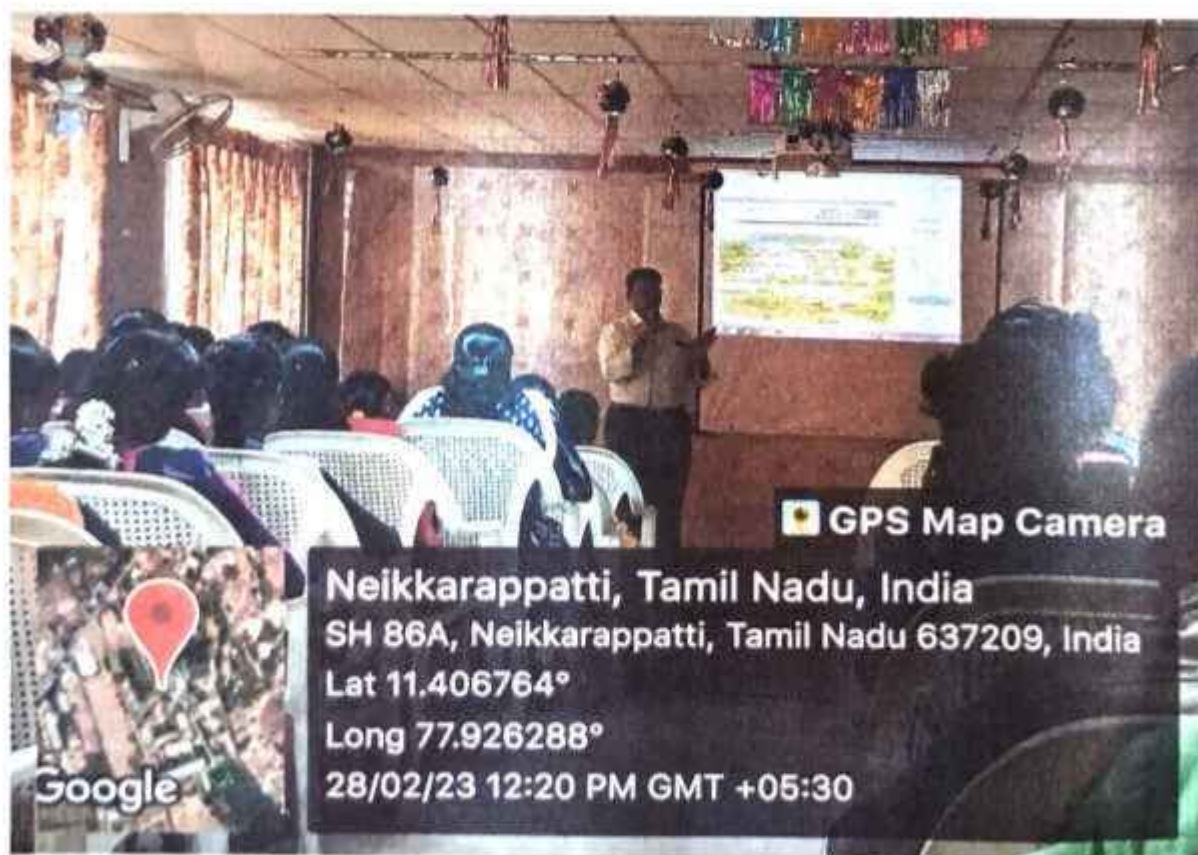
Guest Honoring Moment on 28.02.2023

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Lecture Session - I on 28.02.2023, Guest Delivered the Speech about Probiotics



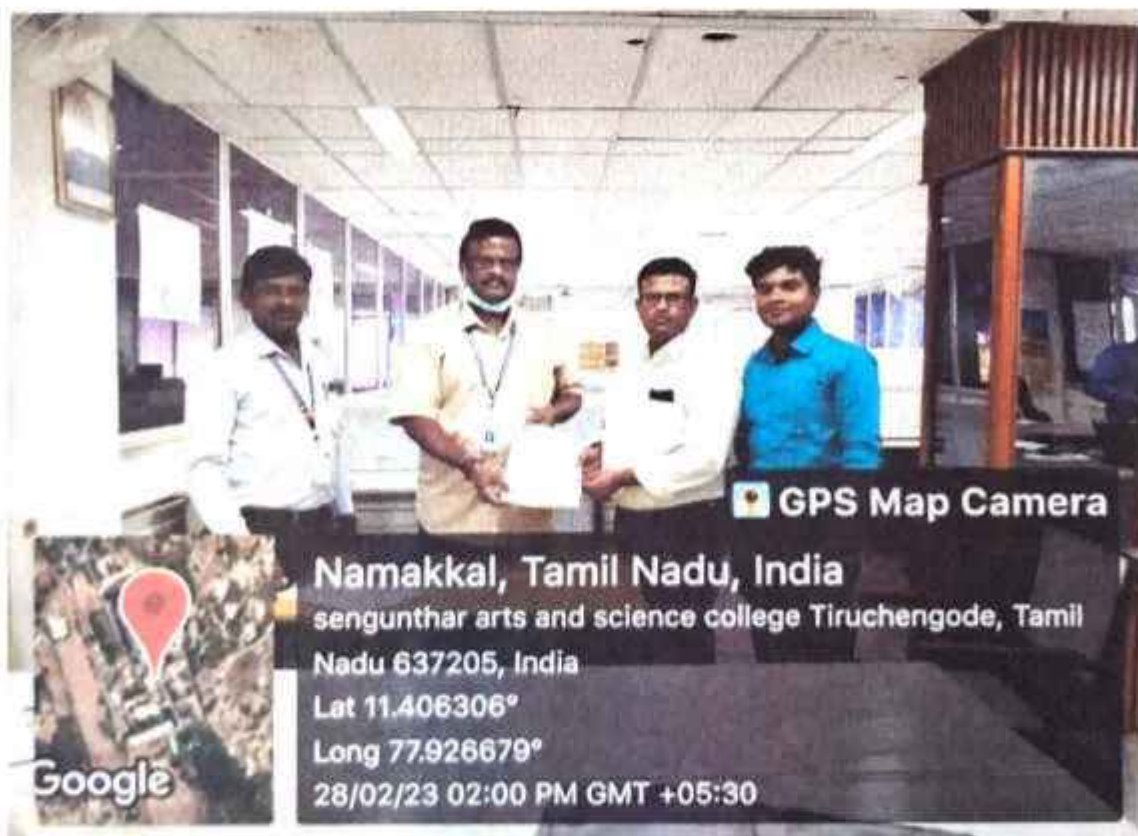
Lecture Session - II on 28.02.2023, Guest Delivered the Speech about Opportunities in Bioscience

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Students Interaction with Guest on 28.02.2023



MoU signed on 28.02.2023

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 3/3/23
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Dr. S. RAVIKUMAR M.Sc., M.E., M.Phil., Ph.D.,
PRINCIPAL

Date: 28.02.2023

To

Mr. M. Vivek Murali,
Founder
Remura Biologicals
Krishnagiri

Dear Sir/Madam,

I would like to extend our most heartfelt thanks to you for being our Chief Guests for the Guest Lecture On "Opportunities and Advances in Biosciences" for our Biotechnology and Botany students, held on February 28, 2023. Your presence to the said event made it more meaningful and memorable one for us and our students.

Thank you for sharing us part of your valuable time. The insights you shared to the students and everyone present during the occasion was touching and inspiring.

Thanking you

Yours sincerely


28/2/2023
PRINCIPAL

Received
H. N. V. S.
28/2/2023

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Dr. S. RAVIKUMAR M.Sc., M.E., M.Phil., Ph.D.,
PRINCIPAL

Date: 28.02.2023

ATTENDANCE CERTIFICATE

This is to certify that Mr. M. VIVEK MURALI, has acted as a Resource Person for the Guest Lecture programme on "Opportunities and Advances in Biosciences, organized by of our Institution on 28.02.2023.


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TIRUCHENGODE - 637 205,

Received by
M. Vivek
28/2/2023



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TIRUCHENGODE - 637 205, NAMAKKAL DT, TAMILNADU.

Dr. S. RAVIKUMAR M.Sc., M.E., M.Phil., Ph.D.,
PRINCIPAL

Date: 28.02.2023

To

Mr. P. Bharathiraja
Executive – RA
Regulatory Affairs Sunberg Life Science Pvt. Ltd.,
Puducherry.

Dear Sir/Madam,

I would like to extend our most heartfelt thanks to you for being our Chief Guests for the Guest Lecture On "Opportunities and Advances in Biosciences" for our Biotechnology and Botany students, held on February 28, 2023. Your presence to the said event made it more meaningful and memorable one for us and our students.

Thank you for sharing us part of your valuable time. The insights you shared to the students and everyone present during the occasion was touching and inspiring.

Thanking you

Yours sincerely


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P. Bharathiraja
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Dr. S. RAVIKUMAR M.Sc., M.E., M.Phil., Ph.D.,
PRINCIPAL

Date: 28.02.2023

ATTENDANCE CERTIFICATE

This is to certify that Mr. P. BHARATHIRAJA, has acted as a Resource Person for the Guest Lecture programme on "Opportunities and Advances in Biosciences, organized by of our institution on 28.02.2023.


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Received
P. Bharathiraja
28/02/23



Q: 283575, 283545

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(CO - EDUCATION)

TIRUCHENGODE.

PAYMENT VOUCHER

Date. 28/02/2023

Voucher No.

Debit. account

Rupees. Two Thousand rupees only

on account of. Guest lecture - Botany & Biotechnology (Opportunities and Advances in Biosciences)

paid to Mr. Vivek Murali by CHEQUE CASH

Rs. 2000

Received the above sum.

Prepared by :

[Signature]
Principal

Correspondent

[Signature]
Signature.

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[Signature]

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DEPARTMENT OF BIOTECHNOLOGY AND BOTANY

GUEST LECTURE PROGRAMME

On

OPPORTUNITIES AND ADVANCES IN BIOSCIENCES

FEEDBACK FORM

Name & Class : R. CHITRA & III - B.Sc., Biotech Speech Date : 28/02/2023

1. How related was the content to your needs

a) Neutral b) Good c) Very Good ☒ d) Excellent

2. Program is Interesting and entering

a) Neutral b) Good ☒ c) Very Good d) Excellent

3. On Average how would you rate the program?

a) Neutral b) Good c) Very Good ☒ d) Excellent

4. Comfort level

a) Neutral b) Good ☒ c) Very Good d) Excellent

5. Any final Comments?

This program is very
Interesting To learn for future.

R. Chitra.
SIGNATURE

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DEPARTMENT OF BIOTECHNOLOGY AND BOTANY

GUEST LECTURE PROGRAMME

On

OPPORTUNITIES AND ADVANCES IN BIOSCIENCES

FEEDBACK FORM

Name & Class : R. Kavinya II Bsc. Biotechnology

Speech Date : 28/2/23

- How related was the content to your needs
a) Neutral b) Good ☒ c) Very Good d) Excellent
- Program is Interesting and entering
a) Neutral b) Good c) Very Good ☒ d) Excellent
- On Average how would you rate the program?
a) Neutral b) Good ☒ c) Very Good d) Excellent
- Comfort level
a) Neutral b) Good c) Very Good ☒ d) Excellent
- Any final Comments?

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I have to learn and observe
many things after finishing my studies.


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And the program also very good. I get
many ideas after this session.



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GUEST LECTURE PROGRAMME

On

OPPORTUNITIES AND ADVANCES IN BIOSCIENCES

FEEDBACK FORM

Name & Class : *R. Mawizhi : I.M.Sc. Biotechnology* Speech Date : *28.2.2023*

1. How related was the content to your needs

a) Neutral b) Good *C* Very Good d) Excellent

2. Program is Interesting and entering

a) Neutral b) Good c) Very Good *d* Excellent

3. On Average how would you rate the program?

a) Neutral b) Good *c* Very Good d) Excellent

4. Comfort level

a) Neutral *b* Good c) Very Good d) Excellent

5. Any final Comments?

It was good. It was very useful session.

R. Mawizhi
SIGNATURE

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[Signature]

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தமிழ்நாடு தமில்நாடு TAMILNADU 100-

BP 953465

19.7.2022

The Secretary and Correspondent
Sengunthar Arts and Science College
Tiruchengode

R.சிசுந்திக் குமார், DTP.,
மு.நா.சிறப்பலயாளர்,
புனிதர்யாஸ்கயம் அக்ஸ்கொலேஜ்,
எரோடு - 638 008, தாமக்கல் Dt.
L.No.10/2008/NMKL

MEMORANDUM OF UNDERSTANDING (MOU)

Between

This Memorandum of Understanding (MoU) is made on 15th November, 2023 AWE-CARE PRIVATE LIMITED, Analytical & Research Laboratories, 22, Agrinagar, Thindal, Erode - 638012 here in after called as - AWE-CARE Ltd.

And

SENGUNTHAR ARTS AND SCIENCE COLLEGE (AUTONOMOUS), Tiruchengode, Tamilnadu, 637 205 here in after called as - SASC

SCOPE & STATEMENT OF WORK:

This MoU is made for sharing the Technical knowledge, Skills, Resources, and Industry / academic exposure to the PG AND RESEARCH DEPARTMENT OF MICROBIOLOGY, Sengunthar Arts And Science College (Autonomous), Tiruchengode and AWE-CARE Ltd, concerned stakeholders for mutual benefits.

Both SASC and AWE-CARE Ltd, have agreed to enter into this Memorandum of Understanding, for Skill Development & Mutual benefits in the following aspects.



[Handwritten signature]



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PG & RESEARCH DEPARTMENT OF MICROBIOLOGY INTERNSHIP TRAINING REPORT

1	Name of the Candidate	G.AAKASH
2	University Examination Register Number	C22UG127MIB001
3	Name of the College	Sengunthar Arts and Science College (Autonomous)
4	Name of the Department	PG and Research Department of Microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE Private Limited Analytical & Research Laboratories
6	Guide/Supervisor under whom the training undertaken	Dr. E.S. Karthy M.Sc., Ph.D., Research Director
7	Title of the training	Microbial Molecular Techniques And Bioenterpreneurship Skill Development
8	Brief output of training (Not More Than 2 pages)	Annexure attached
9	Conclusion	The internship in this research lab underwent with the laboratory techniques used for plant samples and analysis techniques of various compounds available in the plants was practiced.
10	Outcome of the Training	Gained skills in research laboratory, the collection of samples from various industries and analysis of various plants.

G. Aakash
Signature of the Student

A.P. Lakshmi
Signature of the Guide

A.P. Lakshmi
Head of the department

A.P. Lakshmi
Principal

DEPARTMENT OF MICROBIOLOGY
SENGUNTHAR ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
TIRUCHENGODE - 637 205, NAMAKKAL DT, TAMILNADU

ANNEXURE – I

NAME :G.AAKASH

REG NO : C22UG127MIB001

BRIEF OUTPUT OF TRAINING

In this study, the Quantitative and Qualitative analysis of different plant samples like Albizia amara, Eclipta prostrata, lemon leaf (Citrus), prosopis juliflora was analysed. The chromatography techniques like thin layer chromatography, paper chromatography, column chromatography, Iron chromatography,

Gel filtration chromatography was analysed. The cultivation of edible mushroom methods was learned throughout this training.

Skills Acquired

- **Sample collection:** Collect the biological, environmental, or chemical samples for testing. Examples include blood, water, soil, or microbial cultures.
- **Sample Preparation:** Process the samples to make them suitable for analysis. This could involve dilution, filtration, centrifugation, or staining depending on the sample type and test.
- **Understanding of Biotechnology:** Knowledge of molecular biology, genetics, and microbiology is crucial for identifying opportunities and innovations in biotech.
- **Intellectual Property (IP) Management:** Understanding patents, trademarks, and other forms of IP protection is essential for safeguarding biotechnological inventions.
- **Business Planning and Development:** Skills in creating business models, writing business plans, and raising capital are vital for launching biotech ventures.

The internship provided invaluable insights into the field of Microbial molecular techniques and Bioentrepreneurships in Microbiology. I gained practical skills and knowledge that will be beneficial for my future career. The experience reinforced my passion for microbiology and the critical role it plays in diagnosing and managing infectious diseases.

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Analytical & Research Laboratories

CERTIFICATE

This is to certify that Ms/Mr Mr. AAKASH
II BSC MICROBIOLOGY, SENGUNTHAR ARTS
AND SCIENCE COLLEGE

has Successfully Completed the Internship
Programme on '**Microbial Molecular
Techniques and Bioentrepreneurship Skill
Development**' from 06.06.24 to 22.06.24
organized by AWE CARE PRIVATE LIMITED-Analytical and
Research Laboratories, Erode, TN, India.



Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director

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PG & RESEARCH DEPARTMENT OF MICROBIOLOGY INTERNSHIP TRAINING REPORT

1	Name of the Candidate	A.GOPINATH
2	University Examination Register Number	C22UG127MIB006
3	Name of the College	Sengunthar Arts and Science College(Autonomous)
4	Name of the Department	PG research department of microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE private limited analytical & research laboratories
6	Guide/Supervisor under whom the training undertaken	E.S. Karthy M.Sc., Ph.D., Research director
7	Title of the training	Microbial molecule techniques and bioenterpreneurship skill development
8	Brief output of training (Not More Than 2 pages)	Annexure attached
9	Conclusion	Development of novel molecular markers and addressing antimicrobial resistance.
10	Outcome of the Training	Identification of microorganisms, Detection of antimicrobial resistance, Analysis of microbial communities

A. Gopinath.
Signature of the Student

A.P.L. [Signature]
Signature of the Guide

A.P.L. [Signature]
Head of the department

[Signature]
Principal

ANNEXURE – I

NAME : A.GOPINATH

REG NO : C22UG127MIB006

BRIEF OUTPUT OF TRAINING


In this study, the Quantitative and Qualitative analysis of different plant samples like Albizia amara, Eclipta prostrata, lemon leaf (Citrus), prosopis juliflora was analysed. The chromatography techniques like thin layer chromatography, paper chromatography, column chromatography, Iron chromatography, Gel filtration chromatography was analysed. The cultivation of edible mushroom methods was learned throughout this training.

Skills aquired

- Sample collection: Collect the biological, environmental, or chemical samples for testing. Examples include blood, water, soil, or microbial cultures.
- Sample Preparation: Process the samples to make them suitable for analysis. This could involve dilution, filtration, centrifugation, or staining depending on the sample type and test.
- Understanding of Biotechnology: Knowledge of molecular biology, genetics, and microbiology is crucial for identifying opportunities and innovations in biotech.
- Intellectual Property (IP) Management: Understanding patents, trademarks, and other forms of IP protection is essential for safeguarding biotechnological inventions.
- Business Planning and Development: Skills in creating business models, writing business plans, and raising capital are vital for launching biotech ventures.

The internship provided invaluable insights into the field of Microbial molecular techniques and Bioenterpreneurships in Microbiology. I gained practical skills and knowledge that will be beneficial for my future career. The experience reinforced my passion for microbiology and the critical role it plays in diagnosing and managing infectious diseases.

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CERTIFICATE

This is to certify that Ms/Mr A. GOPINATH
II - B.Sc MICROBIOLOGY, SENGUNTHAR
ARTS AND SCIENCE COLLEGE.

has Successfully Completed the Internship
Programme on '**Microbial Molecular
Techniques and Bioentrepreneurship Skill
Development**' from 06/06/24 to 22/06/24
organized by AWE CARE PRIVATE LIMITED-Analytical and
Research Laboratories, Erode, TN, India.



Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director

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PG & RESEARCH DEPARTMENT OF MICROBIOLOGY INTERNSHIP TRAINING REPORT

1	Name of the Candidate	S.SOWMIYA
2	University Examination Register Number	C22UG127MIB037
3	Name of the College	Sengunthar Arts and Science College(Autonomous)
4	Name of the Department	PG research department of microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE private limited analytical & research laboratories
6	Guide/Supervisor under whom the training undertaken	E.S. Karthy M.Sc., Ph.D., Research director
7	Title of the training	Microbial molecule techniques and bioenterpreneurship skill development
8	Brief output of training (Not More Than 2 pages)	Annexure attached
9	Conclusion	Development of novel molecular markers and addressing antimicrobial resistance.
10	Outcome of the Training	Identification of microorganisms, Detection of antimicrobial resistance, Analysis of microbial communities

Signature of the Student

Signature of the Guide

Head of the department

Principal

DEPARTMENT OF MICROBIOLOGY
SENGUNTHAR ARTS & SCIENCE COLLEGE
(AUTONOMOUS)
TIRUCHENGODE - 637 205., NAMAKKAL DT

ANNEXURE – I

NAME :S.SOWMIYA

REG NO : C22UG127MIB037

BRIEF OUTPUT OF TRAINING

In this study, the Quantitative and Qualitative analysis of different plant samples like Albizia amara, Eclipta prostrata, lemon leaf (Citrus), prosopis juliflora was analysed. The chromatography techniques like thin layer chromatography, paper chromatography, column chromatography, Iron chromatography, Gel filtration chromatography was analysed. The cultivation of edible mushroom methods was learned throughout this training.

Skills Acquired

- Sample collection: Collect the biological, environmental, or chemical samples for testing. Examples include blood, water, soil, or microbial cultures.
- Sample Preparation: Process the samples to make them suitable for analysis. This could involve dilution, filtration, centrifugation, or staining depending on the sample type and test.
- Understanding of Biotechnology: Knowledge of molecular biology, genetics, and microbiology is crucial for identifying opportunities and innovations in biotech.
- Intellectual Property (IP) Management: Understanding patents, trademarks, and other forms of IP protection is essential for safeguarding biotechnological inventions.
- Business Planning and Development: Skills in creating business models, writing business plans, and raising capital are vital for launching biotech ventures.

The internship provided invaluable insights into the field of Microbial molecular techniques and Bioenterpreneurships in Microbiology. I gained practical skills and knowledge that will be beneficial for my future career. The experience reinforced my passion for microbiology and the critical role it plays in diagnosing and managing infectious diseases.

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II B.Sc, MICROBIOLOGY, SENGUNTHAR ARTS
AND SCIENCE COLLEGE.

has Successfully Completed the Internship
Programme on '**Microbial Molecular
Techniques and Bioentrepreneurship Skill
Development**' from 06.06.24 to 22.06.24
organized by AWE CARE PRIVATE LIMITED-Analytical and
Research Laboratories, Erode, TN, India.


Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director

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TIRUCHENGODE - 637 205., NAMAKKAL DT, TAMILNADU



PG & RESEARCH DEPARTMENT OF MICROBIOLOGY INTERNSHIP TRAINING REPORT

1	Name of the Candidate	K.THENMOZHI
2	University Examination Register Number	C22UG127MIB041
3	Name of the College	Sengunthar Arts and Science College(Autonomous)
4	Name of the Department	PG research department of microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE private limited analytical& research laboratories
6	Guide/Supervisor under whom the training undertaken	E.S. Karthy M.Sc.,Ph.D., Research director
7	Title of the training	Microbial molecule techniques and bioenterpreneurship skill development
8	Brief output of training (Not More Than 2 pages)	Annexure attached
9	Conclusion	Development of novel molecular markers and addressing antimicrobial resistance.
10	Outcome of the Training	Identification of microorganisms, Detection of antimicrobial resistance, Analysis of microbial communities

Signature of the Student

Signature of the Guide

Head of the department

Principal

DEPARTMENT OF MICROBIOLOGY
SENGUNTHAR ARTS & SCIENCE COLLEGE (AUTONOMOUS)
TIRUCHENGODE - 637 205., NAMAKKAL DT, TAMILNADU

ANNEXURE – I

NAME : K.THENMOZHI

REG NO : C22UG127MIB041

BRIEF OUTPUT OF TRAINING

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organized by AWE CARE PRIVATE LIMITED-Analytical and
Research Laboratories, Erode, TN, India.


Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director

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TIRUCHENGODE - 637 205., NAMAKKAL DT, TAMILNADU

PG & RESEARCH DEPARTMENT OF MICROBIOLOGY INTERNSHIP TRAINING REPORT

1	Name of the Candidate	T. KEERTHIGA
2	University Examination Register Number	C22UG127MIB024
3	Name of the College	Sengunthar Arts and Science College (Autonomous)
4	Name of the Department	PG and Research Department of Microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE, Private limited analytical & research Laboratories
6	Guide/Supervisor under whom the training undertaken	E.S. Karthy M.Sc., M.Phil., Ph.D., Research Director
7	Title of the training	Microbial molecule techniques
8	Brief output of training (Not More Than 2 pages)	Annexure attached
9	Conclusion	The internship in this research lab underwent with the laboratory techniques used for plant samples and analysis techniques of various compounds available in the plants was practiced.
10	Outcome of the Training	Gained skills in research laboratory, the collection of samples from various industries and analysis of various plants.

T. Keerthiga
Signature of the Student

M. R. S. Karthy
Signature of the Guide

A. P. Karthy
Head of the department
HEAD

E. S. Karthy
Principal
PRINCIPAL

DEPARTMENT OF MICROBIOLOGY
SENGUNTHAR ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
TIRUCHENGODE - 637 205. TIRUCHENGODE - 637 205. NAMAKKAL - DT

ANNEXURE – I

NAME : T.KEERTHIGA

REG NO : C22UG127MIB024

BRIEF OUTPUT OF TRAINING

In this study, the Quantitative and Qualitative analysis of different plant samples like Albizia amara, Eclipta prostrata, lemon leaf (Citrus), prosopis juliflora was analysed. The chromatography techniques like thin layer chromatography, paper chromatography, column chromatography, Iron chromatography, Gel filtration chromatography was analysed. The cultivation of edible mushroom methods was learned throughout this training.

Skills acquired

- Sample collection: Collect the biological, environmental, or chemical samples for testing. Examples include blood, water, soil, or microbial cultures.
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Techniques and Bioentrepreneurship Skill
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Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director

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**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	S. SUBASHREE
2	University Examination Register Number	C22UG127MIB038
3	Name of the College	Sengunthar Arts and Science College (Autonomous)
4	Name of the Department	PG and Research Department of Microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE, Private limited analytical & research Laboratories
6	Guide/Supervisor under whom the training undertaken	E.S. Karthy M.Sc., M.Phil., Ph.D., Research Director
7	Title of the training	Microbial molecule techniques
8	Brief output of training (Not More Than 2 pages)	Annexure attached
9	Conclusion	The internship in this research lab underwent with the laboratory techniques used for plant samples and analysis techniques of various compounds available in the plants was practiced.
10	Outcome of the Training	Gained skills in research laboratory, the collection of samples from various industries and analysis of various plants.

S. Subashree

Signature of the Student

M. Anitha

Signature of the Guide

A. L. ...

Head of the department

E. ...

Principal

DEPARTMENT OF MICROBIOLOGY
SENGUNTHAR ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)
TIRUCHENGODE - 637 205, TAMILNADU

ANNEXURE – I

NAME : S.SUBASHREE
REG NO : C22UG127MIB038

BRIEF OUTPUT OF TRAINING

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organized by AWE CARE PRIVATE LIMITED-Analytical and
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Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director

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TIRUCHENGODE - 637 205, NAMAKKAL DT, TAMILNADU

**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	M.MEGATHEESWARI
2	University Examination Register Number	C22UG127MIB027
3	Name of the College	Sengunthar Arts and Science College (Autonomous)
4	Name of the Department	PG and Research Department of Microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE, Private limited analytical & research Laboratories
6	Guide/Supervisor under whom the training undertaken	E.S. Karthy M.Sc., M.Phil., Ph.D., Research Director
7	Title of the training	Microbial molecule techniques
8	Brief output of training (Not More Than 2 pages)	Annexure attached
9	Conclusion	The internship in this research lab underwent with the laboratory techniques used for plant samples and analysis techniques of various compounds available in the plants was practiced.
10	Outcome of the Training	Gained skills in research laboratory, the collection of samples from various industries and analysis of various plants.

M. Megatheeswari

Signature of the Student

[Signature]

Signature of the Guide

[Signature]

Head of the department

[Signature]

Principal

HEAD
DEPARTMENT OF MICROBIOLOGY
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205, (TN)
TIRUCHENGODE-637 205, NAMAKKAL -

ANNEXURE – I

NAME : M.MEGATHEESWARI

REG NO : C22UG127MIB027

BRIEF OUTPUT OF TRAINING

In this study, the Quantitative and Qualitative analysis of different plant samples like Albizia amara, Eclipta prostrata, lemon leaf (Citrus), prosopis juliflora was analysed. The chromatography techniques like thin layer chromatography, paper chromatography, column chromatography, Iron chromatography, Gel filtration chromatography was analysed. The cultivation of edible mushroom methods was learned throughout this training.

Skills acquired

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II B.Sc, MICROBIOLOGY, SENGUNTHAR ARTS
AND SCIENCE COLLEGE.


has Successfully Completed the Internship
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Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director



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