# LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

**(AUTONOMOUS)**
**Accredited by NAAC with 'A' Grade,**
**An ISO 21001:2018,14001:2015,50001:2018 Certified Institution**
**Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada**
**L.B. REDDY NAGAR, MYLAVARAM, NTR DIST., A.P.-521 230.**
hodcsm@lbrce.ac.in, csmoffice@lbrce.ac.in, Phone: 08659-222 933, Fax: 08659-222931

**DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING (AI&ML)**


## 2022 Admitted Summer Internship Details A.Y.2024-25

| S.No | Roll Number | Name of the Student |
|---|---|---|
| 1 | 22761A4201 | Giri allu |
| 2 | 22761A4202 | Alluri Bhargavi |
| 3 | 22761A4203 | Batchu Naga Renukamma |
| 4 | 22761A4204 | BOMMU KEERTHIKA LAKSHMI |
| 5 | 22761A4205 | Buddhiraju Karthikeya |
| 6 | 22761A4206 | Chebrolu Keerthana |
| 7 | 22761A4207 | Jaswini Cherukumalli |
| 8 | 22761A4208 | DEVARASETTY MANI KANTA KOWSHIK |
| 9 | 22761A4209 | Dhannana Sravanthi |
| 10 | 22761A4210 | Dumpa lohitha |
| 11 | 22761A4211 | Ganta Kusuma |
| 12 | 22761A4212 | Garikipati Kalyani |
| 13 | 22761A4213 | Gidda Manikanta |
| 14 | 22761A4214 | Gujjula Sandhya |
| 15 | 22761A4215 | Holi Sree Navya Nakka |
| 16 | 22761A4216 | J SAI GOPALA KRISHNA |
| 17 | 22761A4217 | Jampani Venkata Yaswanth Varma |
| 18 | 22761A4218 | J Krishna kowshik |
| 19 | 22761A4219 | KAKARLAPUDI SAI PREM |
| 20 | 22761A4220 | Rishitha Sri Sai Kalava |
| 21 | 22761A4221 | Karnati Mourya Sai |
| 22 | 22761A4222 | Katragadda Madhuvani |
| 23 | 22761A4223 | Katru Vamsi Krishna |
| 24 | 22761A4224 | Kodumuru Kavya Bhanu Chandrika |
| 25 | 22761A4225 | Kolagatla Ganesh |
| 26 | 22761A4226 | KOLAVENTI ELSON |
| 27 | 22761A4227 | Kolli Sai Tripurambika Reddy |
| 28 | 22761A4228 | KUNCHALA VENKATA NARAYANA |
| 29 | 22761A4229 | Machava Bhanu Venkata Naga Sai |
| 30 | 22761A4230 | Mahanthi Sowmya |
| 31 | 22761A4231 | Mamulaseri Mythili |
| 32 | 22761A4232 | Manda Kousalya Reddy |
| 33 | 22761A4233 | MANUKONDA SRAVANTHI |
| 34 | 22761A4234 | Masavarapu Adithya Vardhan |
| 35 | 22761A4235 | Medisetty Sai Praneeth |
| 36 | 22761A4236 | Meesala Vani |

| | | |
|---|---|---|
| 37 | 22761A4237 | MOLUGUMATI ANAND RAJU |
| 38 | 22761A4238 | Nagula Madhuri |
| 39 | 22761A4239 | Nallamothu dhanush kumar |
| 40 | 22761A4240 | Nomula Yaswanth Sai |
| 41 | 22761A4241 | Obulareddy Nageswari |
| 42 | 22761A4242 | Orugu Pavithra |
| 43 | 22761A4243 | Parise Kiran Teja |
| 44 | 22761A4244 | PEDDAGAMALLA YASWANTH KUMAR |
| 45 | 22761A4245 | Pilli Meghamala |
| 46 | 22761A4246 | Pinnelli Jahnavi |
| 47 | 22761A4247 | Ponnuru Giridhara Prasad |
| 48 | 22761A4248 | POPURI SIRI VARSHINI |
| 49 | 22761A4249 | Redrouthu Rajya Lakshmi |
| 50 | 22761A4250 | Sakhamuri Vijay Bhargav |
| 51 | 22761A4251 | SHAIK SADHIKA |
| 52 | 22761A4252 | Sunkara Pavana Varshini |
| 53 | 22761A4253 | Tatipamula Sri Kathyayini |
| 54 | 22761A4255 | LalithaReddy Uppada |
| 55 | 22761A4256 | Vallepu Nohitha |
| 56 | 22761A4257 | VALTERU TEJESWAR |
| 57 | 22761A4258 | VARIKUTI DHANA RAJU |
| 58 | 22761A4259 | Veluri Bhavya |
| 59 | 22761A4260 | Vistarla Syamala Devi |
| 60 | 22761A4261 | Vummethala Sai Adithya Vardhana |
| 61 | 22761A4262 | Vutukuru Naga Abhinayasri |
| 62 | 22761A4263 | Yadavalli Sunny |
| 63 | 22761A4264 | YARLAGADDA RAJESH |
| 64 | 22761A4265 | ZANGALA RONI DANIEL |
| 65 | 23765A4201 | BALAGAM RAJABABU |
| 66 | 23765A4202 | Bathula Bhanu |
| 67 | 23765A4203 | BATTALA RAJYALAKSHMI |
| 68 | 23765A4204 | Gannavarapu Gokul Madhav |
| 69 | 23765A4205 | KAKARLA LIKHITHA |
| 70 | 23765A4206 | SUNKARA MOUNIKA SATYA |
| 71 | 23765A4207 | Yenduri ranjith anjan kunar |

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**Allu Giri (22761A4201)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the internship Program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8440
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**ALLURI BHARGAVI (22761A4202)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8385
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**BATCHU NAGA RENUKAMMA (22761A4203)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

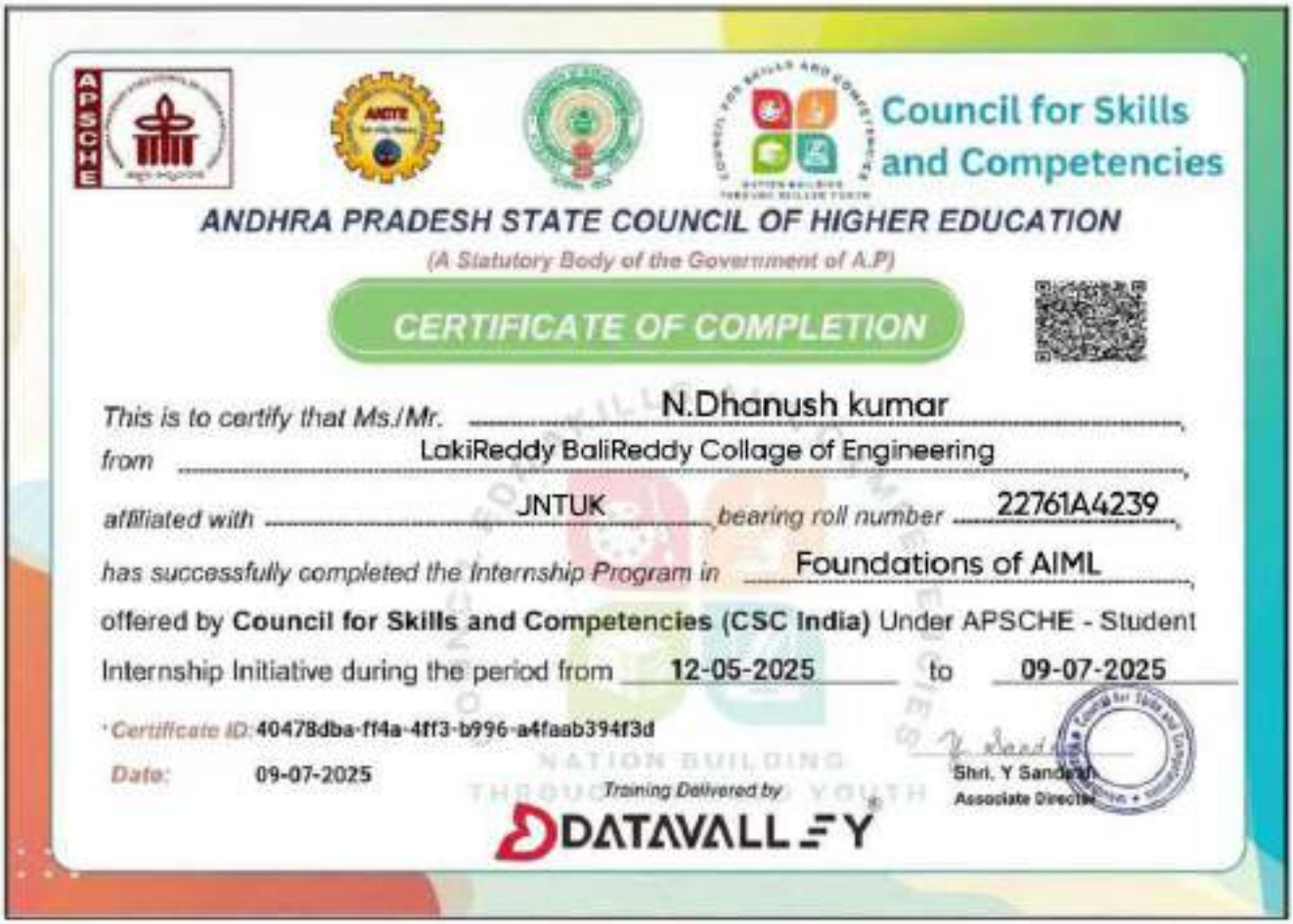
*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8386
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**


APSCHE
Council for Skills and Competencies
ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION
(A Statutory Body of the Government of A.P)
CERTIFICATE OF COMPLETION
This is to certify that Ms./Mr. N.Dhanush kumar
from LakiReddy BaliReddy Collage of Engineering
affiliated with JNTUK bearing roll number 22761A4239
has successfully completed the Internship Program in Foundations of AIML
offered by Council for Skills and Competencies (CSC India) Under APSCHE - Student Internship Initiative during the period from 12-05-2025 to 09-07-2025
Certificate ID: 40478dba-ff4a-4ff3-b996-a4faab394f3d
Date: 09-07-2025
Training Delivered by
DATAVALLEY
Shri. Y Sandeep
Associate Director

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## CHEBROLU KEERTHANA (22761A4206)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8388
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## CHEBROLU KEERTHANA (22761A4206)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8388
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
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# *CERTIFICATE OF COMPLETION*

This is to certify that

**DHANNANA SRAVANTHI (22761A4209)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8391
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

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# *CERTIFICATE OF COMPLETION*

This is to certify that

**DUMPA LOHITHA (22761A4210)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8392
Date of Issue : 2025-07-07

Taras Systems and Solutions Bengaluru

**Director-Operations**

TARAS
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# *CERTIFICATE OF COMPLETION*

This is to certify that

## GARIKIPATI KALYANI (22761A4212)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

## *Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8394
Date of Issue.: 2025-07-07

Taras Systems and Solutions
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**Director-Operations**

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# *CERTIFICATE OF COMPLETION*

This is to certify that

**JOGI KRISHNA KOWSHIK (22761A4218)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8399
Date of Issue.: 2025-07-07

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सूक्ष्म, लघु एवं मध्यम उद्यम

MICRO, SMALL & MEDIUM ENTERPRISES

# INTERNSHIP COMPLETION CERTIFICATE

This certificate is proudly awarded to

## Rishitha Sri Sai Kalava

For successfully completing the Internship in Data Science from 10/Jun/2025 to 10/Aug/2025. Her performance was exceptional and we observed that, She remained engaged and excited throughout the duration

Kranthi

CO-FOUNDER & COO

**VALIDATION ID**

0f943192fe

VERIFIED

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## KODUMURU KAVYA BHANU CHANDRIKA (22761A4224)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8403
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

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SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## KUNCHALA VENKATA NARAYANA (22761A4228)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8407
Date of Issue.: 2025-07-07

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TARAS
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# *CERTIFICATE OF COMPLETION*

This is to certify that

**MAHANTHI SOWMYA (22761A4230)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8409
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

MIRACLE
SOFTWARE SYSTEMS

Miracle Software Systems (I) Pvt. Ltd.

MIG-49, Lawsons Bay Colony, Visakhapatnam-17, A.P., India
Phone : (0891) 6696666, Fax : (0891) 6623549

Date: 7 July, 2025

## INTERNSHIP CERTIFICATE

This is to certify that **Ms. Mythili Mamulaseri**, a student of **Lakireddy Bali Reddy College of Engineering**, pursuing **B.Tech** in **CSE(AI &ML)**, has successfully completed her internship at **Miracle Software Systems**, Global Development Centre, **Miracle City, Bhogapuram**.

The internship program was carried out during the period from **19 May,2025** to **01 Jul,2025**. During this time, Ms. Mythili Mamulaseri demonstrated sincerity, dedication, and a methodical approach in executing the assignments entrusted to her.

She conducted significant research and consistently delivered impactful results. She was actively involved in tasks related to **Python, SQLFast API, JavaScript, React JS**.

We appreciate her efforts and wish Ms. Mythili Mamulaseri all the very best in her future endeavors.

For Miracle Software Systems (I) Pvt. Ltd

Ravi Kumar Ijju
Director – HR

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**MANUKONDA SRAVANTHI (22761A4233)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No: TSS8410
Date of Issue: 2025-07-07

Taras Systems and Solutions Bengaluru

Director-Operations

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## MASAVARAPU ADITHYA VARDHAN (22761A4234)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Taras Systems and Solutions
Bengaluru

Certificate No.: TSS8411
Date of Issue.: 2025-07-07

**Director-Operations**

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SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**MEESALA VANI (22761A4236)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8413
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## MOLUGUMATI ANAND RAJU (22761A4237)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8414
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**NOMULA YASWANTH SAI (22761A4240)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8416
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## OBULAREDDY NAGESWARI (22761A4241)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8417
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

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Rise. Dig. Fly High.

# INTERNSHIP COMPLETION CERTIFICATE

This certificate is proudly awarded to

## Orugu Pavithra

For successfully completing the Internship in Data Science from 10/Jun/2025 to 10/Aug/2025. Her performance was exceptional and we observed that, She remained engaged and excited throughout the duration

Kranthi

CO-FOUNDER & COO

VALIDATION ID

01319ca17c

VERIFIED

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## PEDDAGAMALLA YASWANTH KUMAR (22761A4244)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

## *Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8419
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## REDROUTHU RAJYA LAKSHMI (22761A4249)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8422
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## SAKHAMURI VIJAY BHARGAV (22761A4250)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8423
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## MACHAVA BHANU VENKATA NAGA SAI (22761A4229)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8408
Date of Issue.: 2025-07-07

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Bengaluru

**Director-Operations**

TARAS
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# *CERTIFICATE OF COMPLETION*

This is to certify that

**PARISE KIRAN TEJA (22761A4243)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8418
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**PILLI MEGHAMALA (22761A4245)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8420
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**SHAIK SADHIKA (22761A4251)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8424
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**SUNKARA PAVANA VARSHINI (22761A4252)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8425
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**TATIPAMULA SRI KATHYAYINI (22761A4253)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8426
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## UPPADA LALITHA REDDY (22761A4255)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8427
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

Council for Skills and Competencies

## ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

*(A Statutory Body of the Government of A.P)*

# CERTIFICATE OF COMPLETION

*This is to certify that Ms./Mr.* **VARIKUTI DHANA RAJU**,

*from* **LakiReddy BaliReddy College of Engineering**,

*affiliated with* **JNTUK**, *bearing roll number* **22761A4258**,

*has successfully completed the Internship Program in* **Foundations of AIML**,

offered by **Council for Skills and Competencies (CSC India)** Under APSCHE - Student Internship Initiative during the period from **12-05-2025** to **09-07-2025**

*Certificate ID:* **e2338bda-abcc-4d1e-b15f-65810e1f23be**

*Date:* 09-07-2025

Shri. Y Sandesh
Associate Director

*Training Delivered by*

DATAVALLEY

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## VISTARLA SYAMALA DEVI (22761A4260)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

## *Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8430
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

Council for Skills and Competencies

# ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

*(A Statutory Body of the Government of A.P)*

## CERTIFICATE OF COMPLETION

*This is to certify that Ms./Mr.* **V Sai Adithya Vardhana**,

*from* **LakiReddy BaliReddy College of Engineering**,

*affiliated with* **JNTUK**, *bearing roll number* **22761A4261**,

*has successfully completed the Internship Program in* **Foundations of AIML**,

offered by **Council for Skills and Competencies (CSC India)** Under APSCHE - Student Internship Initiative during the period from **12-05-2025** to **09-07-2025**

· *Certificate ID:* **68419408-a62c-4481-8a85-922e9bc81402**

*Date:* **09-07-2025**

Shri. Y Sandeep
Associate Director

*Training Delivered by*

DATAVALLEY

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

## BATTULA RAJYALAKSHMI (23765A4203)

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8436
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**KAKARLA LIKHITHA (23765A4205)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8437
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**

TARAS
SYSTEMS AND SOLUTIONS

# *CERTIFICATE OF COMPLETION*

This is to certify that

**SUNKARA MOUNIKA SATYA (23765A4206)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

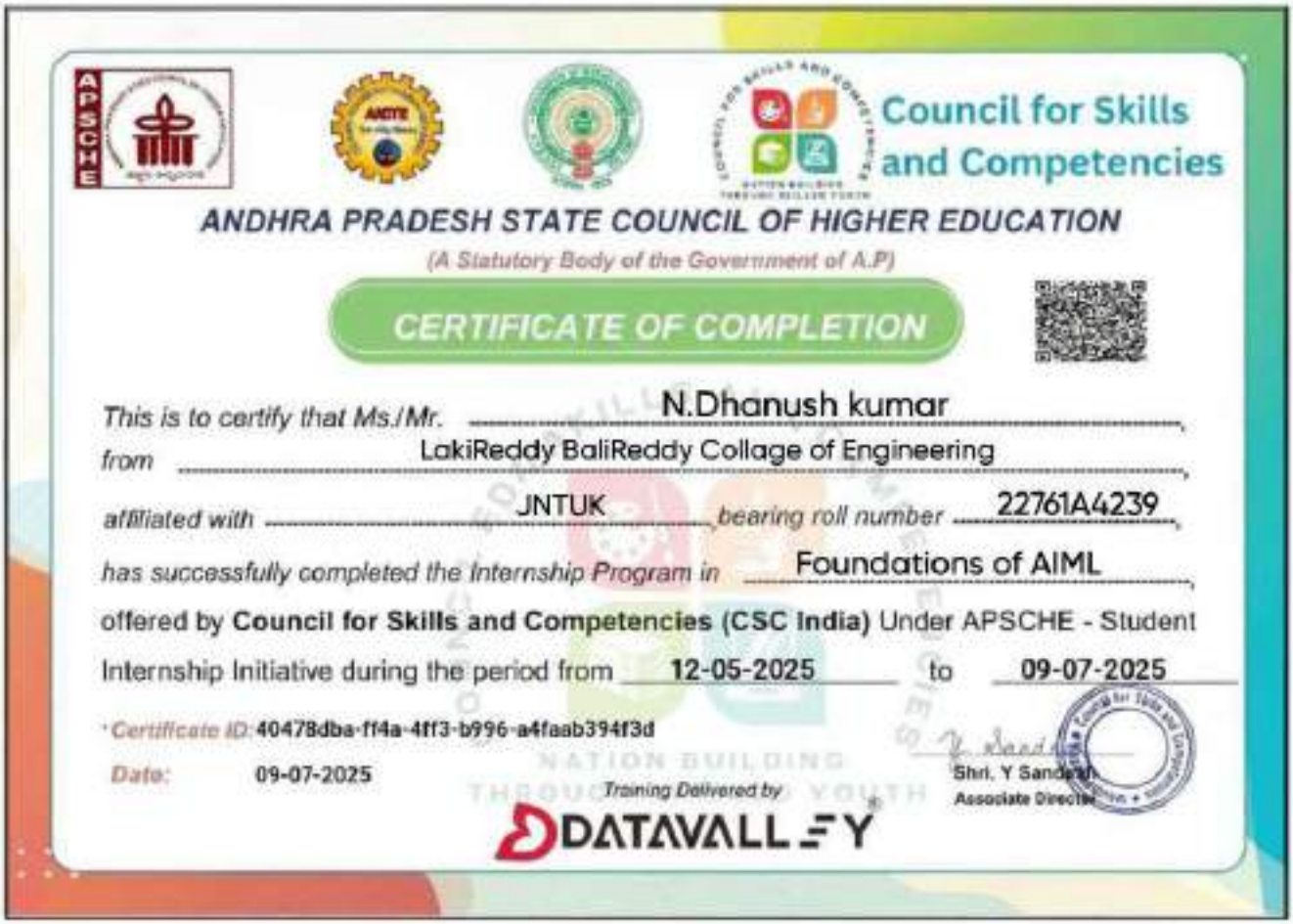
*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No.: TSS8438
Date of Issue.: 2025-07-07

Taras Systems and Solutions
Bengaluru

**Director-Operations**


APSCHE
Council for Skills and Competencies
ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION
(A Statutory Body of the Government of A.P)
CERTIFICATE OF COMPLETION
This is to certify that Ms./Mr. N.Dhanush kumar
from LakiReddy BaliReddy Collage of Engineering
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Phone : (0891) 6696666, Fax : (0891) 6623549

Date: 7 July, 2025.

**INTERNSHIP CERTIFICATE**

This is to certify that **Ms. Holi Sree Navya Nakka**, a student of **Lakireddy Bali Reddy College of Engineering**, pursuing **B.Tech** in **CSE (AI&ML)**, has successfully completed her internship at **Miracle Software Systems**, Global Development Centre, **Miracle City, Bhogapuram**.

The internship program was carried out during the period from **19 May,2025** to **01 Jul,2025**. During this time, Ms. Holi Sree Navya Nakka demonstrated sincerity, dedication, and a methodical approach in executing the assignments entrusted to her.

She conducted significant research and consistently delivered impactful results. She was actively involved in tasks related to **Python, SQLFast API, JavaScript, React JS**.

We appreciate her efforts and wish Ms. Holi Sree Navya Nakka all the very best in her future endeavors.

For Miracle Software Systems (I) Pvt. Ltd

Ravi Kumar Ijju
Director – HR

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**Gannavarapu Gokul Madhav**

Laki Reddy Bali Reddy College of Engineering

has successfully completed the Internship on

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16th June – 15th July, 2025
at NIT Rourkela.

| | | |
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Artificial Intelligence and Machine Learning

**An Internship Report**

**Submitted in partial fulfillment of the requirements for the award of the degree of**

**BACHELOR OF TECHNOLOGY**

**IN**

**CSE (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)**

**Submitted by**

**Y.Rajesh**

**22761A4264**


**DEPARTMENT OF CSE (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)**

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**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING (AI&ML)**


## CERTIFICATE

This is to certify that internship work entitled **ARTIFICIAL INTELLIGENCE & MACHINE LEARNING** the bonafide work done by **Y.Rajesh** (22761A4264) in partial fulfillment of the requirements for the award of the degree in **BACHELOR OF TECHNOLOGY** in **CSE (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)** from **LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING, MYLAVARAM** during the year 2025-2026.

**Mr. Y. Kranthi Kumar**
**(Internship Coordinators)**

**Dr. S Jayaprada**
**(Head of the Department)**

**EXTERNAL EXAMINER**

**CERTIFICATE OF COMPLETION**

## ACKNOWLEDGEMENT

I express my thanks to the support given by management in completing my work. I also express my sincere gratitude & deep sense of respect to the Principal **Dr. K. APPA RAO** for making us available all the required assistance & for his support & inspiration to carry out this work in the Institute.

I also take the privilege to record my thanks to **Dr. S Jayaprada,** Head of the Department of CSE (AI&ML) whose encouragement, cooperation and valuable support crown our success.

I acknowledge the counsel and support of our Internship Supervisor, **Mr.Y.Kranthi Kumar,** Sr.Asst. Professor, CSE(AI&ML) Department.

I owe my acknowledgement to an equally long list of each people who helped me in this work. My sincere thanks to the Librarian of LBRCE who help me in getting many valuable books of actual editors.

I am thankful to the teaching and non-teaching staff of CSE (AI&ML) department for their direct as well as indirect help in my work. I am elated to avail my selves to this opportunity to express my deep sense of gratitude to my parents.

.

Y.Rajesh

22761A4264

# DECLARATION

We hereby declare that the project report entitled **ARTIFICIAL INTELLIGENCE & MACHINE LEARNING** is submitted to JNTUK is partial fulfillment of the requirement for the award of the degree of bachelor of technology (B. Tech) is an original work carried out by us. The matter embodied in this Internship report is a genuine work by the students and has not been submitted earlier to this university or any other university for award of any degree or diploma or prize.

SUBMITTED BY

Y.Rajesh

# Executive Summary

This report outlines my experience as an intern at Taras Systems and Solutions, where I worked for a period of six weeks in the domain of Artificial Intelligence and Machine Learning. During my internship, I was involved in building an intelligent movie recommendation system capable of suggesting relevant movies to users based on their preferences using machine learning techniques. I worked extensively with technologies such as Python, Streamlit, scikit-learn, pandas, NumPy, and various API-based tools, which allowed me to implement both the recommendation engine and the user interface.

The primary project I contributed to focused on developing a content-based movie recommender that uses techniques such as TF-IDF vectorization and cosine similarity to analyze movie overviews and genres and generate personalized recommendations. Along with building and optimizing the recommendation model, I also created a complete Streamlit-based web application, integrated poster fetching using the TMDb API, and developed user-friendly interfaces to display recommended movies. This internship strengthened my understanding of AI workflows, improved my practical machine learning and data-processing skills, and provided valuable exposure to developing real-world applications using artificial intelligence.

## CONTENTS

# 1. Introduction

**Objective of the Internship**:

The main objective of my internship was to gain practical experience in the field of Artificial Intelligence and Machine Learning, with a specific focus on developing intelligent recommendation-based systems using modern machine learning techniques. Through hands-on project involvement, I aimed to strengthen my skills in data processing, similarity-based algorithms, and model deployment while contributing to a functional and user-friendly movie recommendation system.

## Company Overview:

Taras Systems and Solutions is a technology-driven organization specializing in Artificial Intelligence, Machine Learning, Data Science, IoT, and cloud-based solutions. The company focuses on delivering scalable software and AI-powered products for various industries, including healthcare, automation, and enterprise intelligence. With a strong emphasis on innovation, Taras Systems and Solutions provides students with a platform to gain industry-level experience through real-time projects and expert guidance.

## Relevance to My Field:

As a Computer Science and Engineering student, this internship directly aligned with my academic background by allowing me to apply theoretical machine learning concepts in a practical environment. It offered exposure to recommendation algorithms, dataset preprocessing, text feature extraction, API integration, and real-world application deployment. It also enhanced my understanding of AI workflows, accuracy evaluation, and the development of intelligent systems that provide personalized user experiences.

# 2. Internship Activities

## 2.1 Role and Responsibilities

In my role as an AI & Machine Learning Intern, I was part of a project team working on an intelligent movie recommendation application titled “Movie Recommendation System Using Machine Learning.” My core responsibilities included:

• Preprocessing movie datasets using pandas and data-cleaning techniques.

• Extracting text features from movie overviews using TF-IDF vectorization.

• Computing cosine similarity scores to generate personalized movie recommendations.

• Developing a Streamlit-based web application for real-time movie suggestion and visualization.

• Integrating the TMDb API to fetch movie posters and related metadata.

• Testing, evaluating, and validating recommendation outputs for accuracy and relevance.

• Managing cached data, logs, and system performance records for efficient retrieval.

## 2.2 Projects Undertaken

Project: Movie Recommendation System Using Machine Learning

In this project, I developed an intelligent movie recommendation application capable of suggesting relevant movies to users based on content similarity. My contributions included:

• Designing and implementing a content-based recommendation model using TF-IDF and cosine similarity.

• Processing and cleaning raw movie data extracted from the TMDb dataset.

• Creating a user-friendly Streamlit web interface for selecting movies and viewing recommendations.

• Integrating movie poster fetching through the TMDb API to enhance visual presentation

• Implementing a debug and data-inspection module for transparency and analysis.

• Handling data storage, similarity matrix generation, and optimized loading through pickle-based caching.

This project demonstrated the real-world use of AI in building personalized recommendation systems and provided practical experience in developing end-to-end machine learning applications for user

## 3. Skills and Knowledge Gained

During the internship, I gained the following skills:

• **Technical Skills:**

Proficiency in Python, Streamlit, scikit-learn, pandas, and NumPy.

Knowledge of machine learning techniques such as TF-IDF vectorization and cosine similarity.

Experience with data preprocessing, feature extraction, and recommendation model evaluation.

Web application development using Streamlit for real-time ML deployment.

Working with external APIs (TMDb) for fetching metadata and poster images.

• **Domain Knowledge:**

Understanding of content-based recommendation systems and similarity analysis.

Familiarity with text-processing techniques, genre filtering, and ranking mechanisms.

Exposure to movie datasets, metadata interpretation, and user-personalized suggestions.

• **Soft Skills**:

Improved communication and teamwork by collaborating closely with designers, developers, and mentors.

## 4. Challenges and How I Overcame Them

One of the major challenges was ensuring accurate recommendations due to inconsistencies and missing information in the movie dataset. To overcome this, I performed extensive data cleaning, handled missing values, and refined the TF-IDF features to improve similarity results.

Another challenge was integrating the recommendation model with the Streamlit interface, as computing similarity scores for large datasets initially caused performance delays. I optimized the preprocessing pipeline, introduced caching mechanisms, and pre-saved the processed data and similarity matrix using pickle to speed up loading and predictions. I also faced issues with fetching movie posters through the TMDb API, which I resolved by handling request errors, adding fallback poster URLs, and testing API connectivity thoroughly.

Through continuous learning, mentor support, and repeated testing iterations, I successfully resolved these challenges and improved the overall efficiency, accuracy, and reliability of the movie recommendation system.

## 5. Conclusion

My internship at Taras Systems and Solutions provided me with significant exposure to Artificial Intelligence and Machine Learning in a real-world setting. Working on the Movie Recommendation System helped me gain practical experience in machine learning model development, text-based feature extraction, similarity analysis, and AI application deployment. This experience strengthened my technical foundation and prepared me for future roles in AI, machine learning, and data-driven software development.

## 6. Recommendations

For future interns, I recommend gaining basic familiarity with Python, machine learning libraries, and data-processing tools before starting the internship. Regular interaction with mentors, timely feedback, and active participation in project discussions can greatly enhance learning. Developing strong fundamentals in recommendation algorithms, data cleaning, and model evaluation will make project execution easier ,effective.

## 7. Learning Outcome

- During my internship at Taras Systems and Solutions, I achieved the following learning outcomes:
- Strengthened AI Skills: Gained hands-on experience in developing machine learning-based recommendation systems.
- Practical ML Knowledge: Learned how to handle large movie datasets, build preprocessing pipelines, and evaluate recommendation quality.

- Application Development: Successfully integrated ML models with a Streamlit-based web application for real-time movie suggestions.
- API Integration: Understood how to fetch and manage movie posters and metadata using the TMDb API.
- Problem Solving: Enhanced debugging and optimization skills while improving system accuracy, speed, and user experience.
- Team Collaboration: Built confidence in working within a structured project workflow and communicating technical concepts effectively.
- Career Preparation: Gained essential knowledge required for pursuing a career in AI, Machine Learning, or Data Science.

## 8. Appendices

## Appendix 1: Code Snippets of Key Functions Developed

Below are the major code components implemented during my internship at Taras Systems and Solutions, focusing on the AI-based Movie Recommendation System.

Python Code Snippets:

1. Loading and Processing Movie Data

```
df = pd.read_csv("tmdb_5000_movies.csv")
movies = df[['id', 'title', 'overview', 'genres']].copy()
movies['overview'] = movies['overview'].fillna('')

tfidf = TfidfVectorizer(stop_words='english', max_features=5000)
tfidf_matrix = tfidf.fit_transform(movies['overview'])

cosine_sim = cosine_similarity(tfidf_matrix, tfidf_matrix)
```

2. Movie Recommendation Function

```
def get_recommendations(title, movies, cosine_sim):
    idx = movies[movies['title'] == title].index[0]
    sim_scores = list(enumerate(cosine_sim[idx]))
    sim_scores = sorted(sim_scores, key=lambda x: x[1], reverse=True)[1:11]
    indices = [i[0] for i in sim_scores]
    return movies.iloc[indices][['title', 'id']]
```

3. Fetching Movie Poster from TMDb API

```
def fetch_poster(movie_id):
    url = f"https://api.themoviedb.org/3/movie/{movie_id}?api_key={TMDB_API_KEY}"
```

```
    data = requests.get(url).json()
    poster_path = data.get('poster_path', None)

    if poster_path:
        return "https://image.tmdb.org/t/p/w500" + poster_path
    return "https://via.placeholder.com/150x225.png"
```

4. Streamlit UI – Displaying Recommendations

```
if st.button("Recommend"):
    recs = get_recommendations(selected_movie, movies, cosine_sim)
    cols = st.columns(5)
    for col, (_, row) in zip(cols, recs.iterrows()):
        poster = fetch_poster(row['id'])
        col.image(poster, width=150)
        col.caption(row['title'])
```

5. Data Saving Using Pickle

```
with open("movie_data.pkl", "wb") as f:
    pickle.dump((movies, cosine_sim), f)
```

6. Loading Cached Data

```
with open("movie_data.pkl", "rb") as f:
    movies, cosine_sim = pickle.load(f)
```

7. LOAD & PROCESS CSV

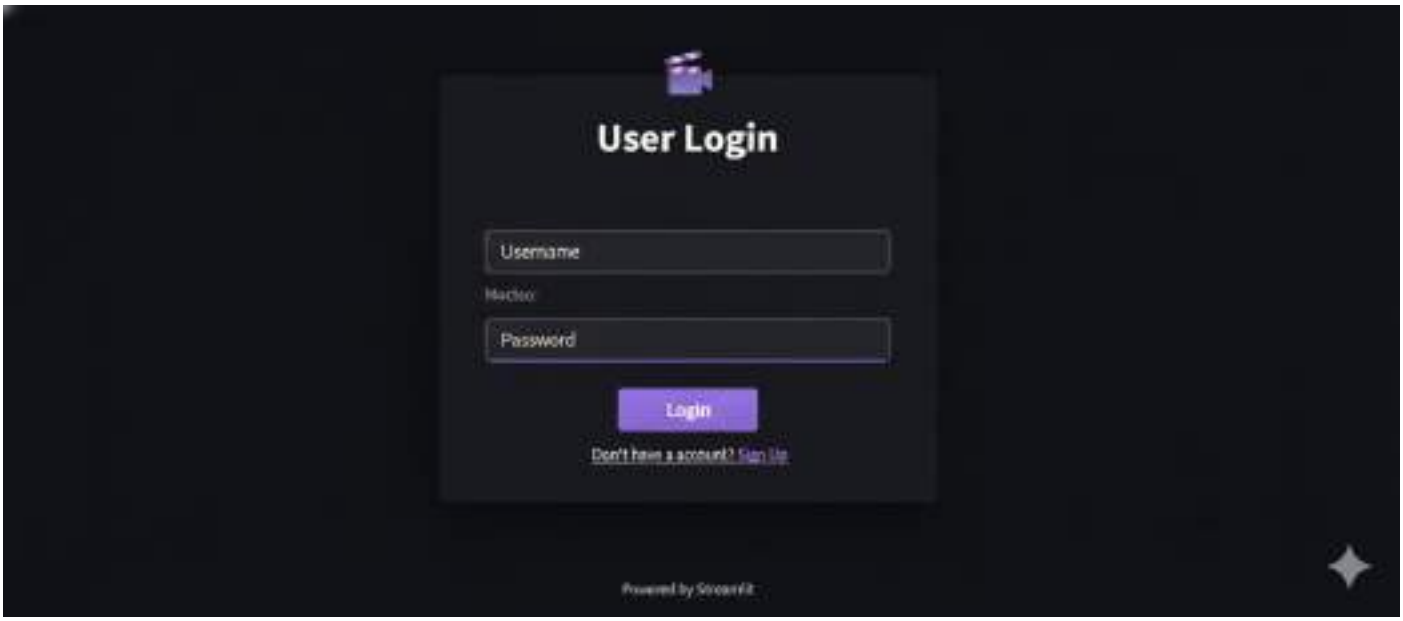
```
 def generate_movie_data():
    st.info("Processing movie data...")

    try:
        df = pd.read_csv(CSV_FILE)
        st.info(f"Loaded CSV with {len(df)} movies")

        # Use half dataset for performance
        movies = df.head(len(df)//2)[['id', 'title', 'overview', 'genres']].copy()
        movies['overview'] = movies['overview'].fillna('')

        # Parse genres
        def parse_genres(g):
            try:
                return [x['name'] for x in json.loads(g.replace("'", '"'))]
            except:
```

```
            return []

        movies['genres'] = movies['genres'].apply(parse_genres)
        movies = movies[movies['genres'].map(len) > 0]

        # TF-IDF vectorization
        tfidf = TfidfVectorizer(stop_words='english', max_features=5000)
        tfidf_matrix = tfidf.fit_transform(movies['overview'])

        cosine_sim = cosine_similarity(tfidf_matrix)

        os.makedirs(MODEL_DIR, exist_ok=True)
        with open(DATA_FILE, "wb") as f:
            pickle.dump((movies, cosine_sim), f)

        st.success("Movie data processed successfully!")
        return movies, cosine_sim
    except Exception as e:
        st.error(f"Error generating data: {e}")
        raise
```

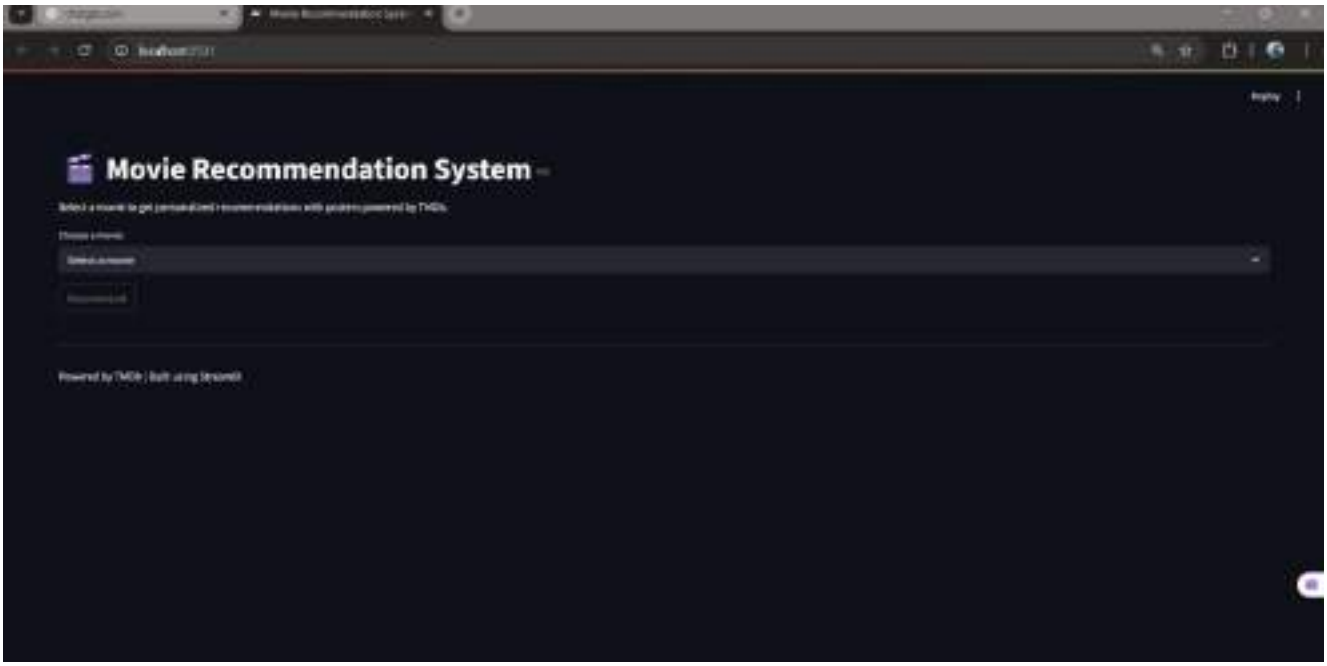
These code snippets highlight the core functionalities I implemented during the internship—data loading, preprocessing, similarity-based recommendation, API poster integration, and the Streamlit user interface. They represent the essential components of the end-to-end movie recommendation system developed during my time at Taras Systems and Solutions.

## Appendix 2: Screenshots of the User Interface

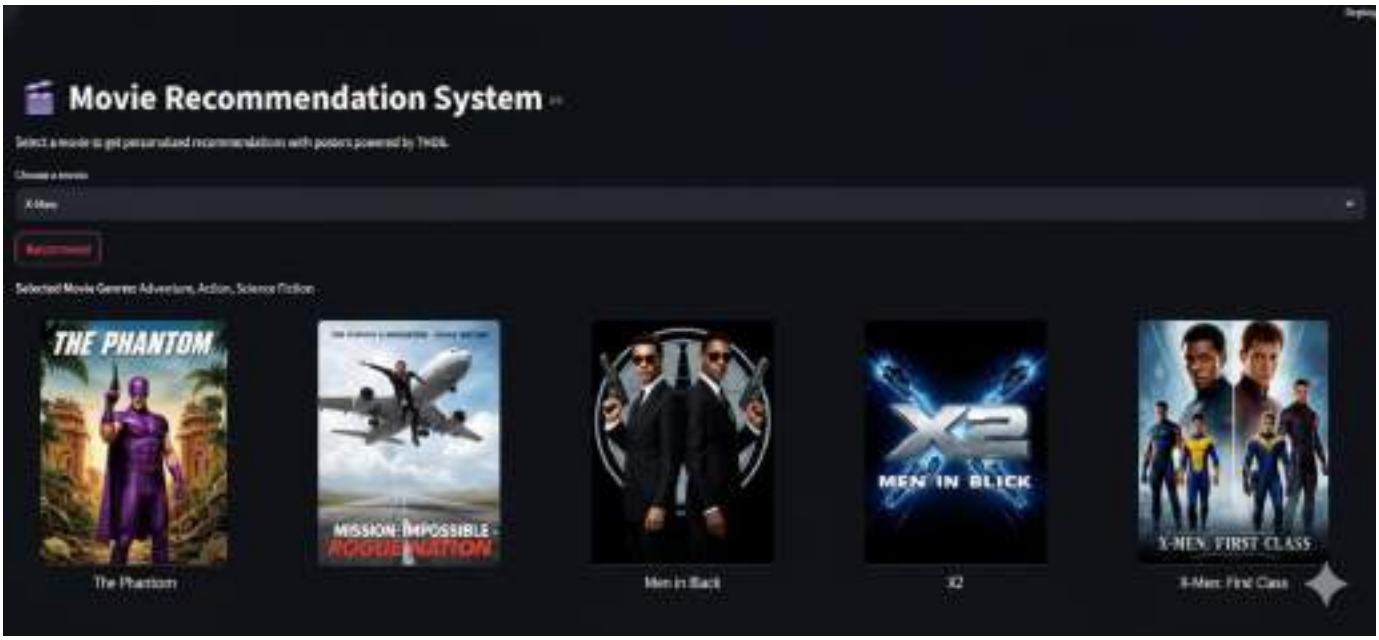
Below are the UI screenshots and captions for the movie recommendation system




**Src-1USER LOGIN**




**SRC-2 HOME PAGE**




**SRC-3 MOVIE RECOMMENDATIONS**

**Appendix 3: Internship Certificate**

## 9. References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Pandas Library Documentation
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# Visionary Aid (A Smart Visual Assistant for the Blind)

**An Internship Report**

**Submitted in partial fulfillment of the requirements for the award of the degree of**

**BACHELOR OF TECHNOLOGY**

**IN**

**CSE (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)**

**Submitted by**

**CHERUKUMALLI JASWINI**

**22761A4207**


**DEPARTMENT OF CSE (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)**

**LAKIREDDY BALIREDDY COLLEGE OF ENGINEERING**

**(**AUTONOMOUS**)**

**Accredited by NAAC with 'A' Grade**

**An ISO 21001:2018, 14001:2015, 50001:2018 Certified Institution**

**Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada**

**L.B. REDDY NAGAR, MYLAVARAM, NTR Dist., ANDHRA PRADESH – 521230**

**2025-2026**

# LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

**(An Autonomous Institution since 2010)**
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**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING (AI&ML)**


## CERTIFICATE

This is to certify that internship work entitled **Visionary Aid (A Smart Visual Assistant for the Blind)** the bonafide work done by **CH.Jaswini** (22761A4207) in partial fulfillment of the requirements for the award of the degree in **BACHELOR OF TECHNOLOGY** in **CSE (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)** from **LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING, MYLAVARAM**

during the year 2025-2026.

**Mr. Y. Kranthi Kumar**
**(Internship Coordinators)**

**Dr. S Jayaprada**
**(Head of the Department)**

**EXTERNAL EXAMINER**

# CERTIFICATE OF COMPLETION

**ACKNOWLEDGEMENT**

I express my thanks to the support given by management in completing my work. I also express my sincere gratitude & deep sense of respect to the Principal **Dr. K. APPA RAO** for making us available all the required assistance & for his support & inspiration to carry out this work in the Institute.

I also take the privilege to record my thanks to **Dr. S Jayaprada,** Head of the Department of CSE (AI&ML) whose encouragement, cooperation and valuable support crown our success.

I acknowledge the counsel and support of our Internship Supervisor, **Mr.Y.Kranthi Kumar,** Sr.Asst. Professor, CSE(AI&ML) Department.

I owe my acknowledgement to an equally long list of each people who helped me in this work. My sincere thanks to the Librarian of LBRCE who help me in getting many valuable books of actual editors.

I am thankful to the teaching and non-teaching staff of CSE (AI&ML) department for their direct as well as indirect help in my work. I am elated to avail my selves to this opportunity to express my deep sense of gratitude to my parents.

.

CH.Jaswini

22761A4207

# DECLARATION

We hereby declare that the project report entitled **Visionary Aid (A Smart Visual Assistant for the Blind)** is submitted to JNTUK is partial fulfillment ofthe requirement for the award of the degree of bachelor of technology (B. Tech) is an original work carried out by us. The matter embodied in this Internship report is a genuine work by the students and has not been submitted earlier to this university or any other university for award of any degree or diploma or prize.

SUBMITTED BY

CH.Jaswini

# Executive Summary

This report outlines my experience as an intern at **TARAS Systems and Solutions**, where I worked for two months in the domain of Artificial Intelligence and Machine Learning. The internship provided me with an invaluable opportunity to apply theoretical concepts to practical tasks, explore advanced technologies, and contribute to a socially impactful project.

During my internship, I was assigned multiple tasks related to computer vision and natural language processing, using technologies such as Python, OpenCV, MediaPipe, and Tesseract OCR. These tasks ranged from implementing algorithms for real-time image processing to designing modules for text recognition and speech interaction. I gained hands-on exposure to integrating different AI components into a cohesive system, which strengthened my problem-solving abilities and technical confidence.

The main project I contributed to was the development of Visionary Aid, a smart visual assistant for the blind. This project aimed to empower visually impaired individuals by interpreting their surroundings and providing real-time audio feedback. I collaborated closely with my teammate to design and implement features such as real-time object detection, text recognition (OCR), and voice-based interaction. We employed YOLO/SSD models for object detection, Tesseract OCR for text extraction, and SpeechRecognition with pyttsx3 for voice interaction. Together, these modules created a system capable of assisting users in daily tasks such as reading menus, identifying objects, and navigating environments safely.

Beyond technical implementation, the internship also enhanced my understanding of project management and teamwork. I learned to work in a collaborative environment, communicate effectively with peers, and adapt to challenges such as debugging complex code or optimizing performance for real-time applications. The iterative development process taught me the importance of testing, feedback, and continuous improvement.

This internship has greatly enhanced my technical skills in AI/ML, particularly in computer vision, OCR, and speech technologies, while also providing me with practical knowledge about building applications with real-world impact. It reinforced my passion for developing assistive technologies that bridge the gap between innovation and social good. Moreover, the experience gave me valuable insights into industry practices, including version control, modular coding, and deployment considerations.

Overall, my internship at TARAS Systems and Solutions was a transformative experience. It not only strengthened my technical expertise but also broadened my perspective on how AI can be leveraged to solve meaningful problems. The skills, knowledge, and confidence I gained during this period will serve as a strong foundation for my future career in Artificial Intelligence and Machine Learning.

# Table of Contents

# 1. Introduction

### Objective of the Internship:

The primary objective of my internship was to gain hands-on experience in Artificial Intelligence and Machine Learning, applying theoretical concepts from my coursework to practical, socially impactful projects. My specific goal was to strengthen my proficiency in developing intelligent systems, particularly by building real-time applications that integrate computer vision, speech interfaces, and deep learning models. Through this internship, I contributed to the development of Visionary Aid, a smart visual assistant for the blind, which enhanced my skills in Python programming, OpenCV, MediaPipe, object detection, OCR, and voice-based interaction systems. This experience deepened my understanding of full-stack AI solutions and their potential to improve accessibility and quality of life.

### Company Overview:

TARAS Systems and Solutions is a technology-driven organization specializing in product development, IT services, and skill enhancement in core engineering domains. Founded in 2019 and headquartered in Chennai, Tamil Nadu, India, the company operates as a provider of business intelligence, ERP solutions, cybersecurity, DevOps, and software development services.

With a focus on innovation and industry relevance, TARAS Systems and Solutions supports both enterprises and individuals by delivering end-to-end digital solutions and offering training programs in Artificial Intelligence, Machine Learning, and emerging technologies. The company is recognized for its commitment to quality, integrity, and customer satisfaction, helping clients accelerate digital transformation while nurturing future-ready talent.

TARAS Systems and Solutions also emphasizes global industry integration, combining decades of expertise in electronics and software to fuel the software-driven future of industries worldwide

### Relevance to My Field:

My internship at TARAS Systems and Solutions was highly relevant to my field of Artificial Intelligence and Machine Learning. The company provided me with practical exposure to industry-oriented tools and technologies, allowing me to apply the theoretical concepts I learned during my coursework to real projects.

Working on AI applications such as computer vision, object detection, OCR, and voice interfaces directly strengthened my skills in developing intelligent systems. This experience aligned perfectly with my academic interests in medical imaging AI and assistive technologies, as I was able to see how AI can be used to solve real-world problems and improve accessibility.

The internship also helped me understand how end-to-end software solutions are built and deployed, bridging the gap between classroom learning and professional practice. By contributing to projects like Visionary Aid, I gained confidence in applying AI/ML models to socially impactful applications, which is central to my career goals.

## 2. Internship Activities

### 2.1 Role and Responsibilities

During my internship at TARAS Systems and Solutions, I worked as an AI/ML Intern in the research and development team. My role involved building intelligent systems that could process visual and textual information in real time. I was responsible for developing computer vision modules using Python and OpenCV, implementing object detection models such as YOLO and SSD, and integrating OCR for text recognition. I also worked on designing a voice command interface and text-to-speech feedback system to make the application accessible for visually impaired users. In addition, I tested and debugged the models to ensure accuracy and collaborated with my peers to improve usability and performance.

### 2.2 Projects Undertaken

**Project 1: Leaf Disease Detection Using AI**

Alongside Visionary Aid, I also worked on Leaf Disease Detection, a project aimed at applying computer vision and deep learning to agriculture. The goal was to assist farmers and researchers by providing an automated system to identify common plant leaf diseases early, thereby improving crop health and yield. My contributions included collecting and preprocessing datasets of healthy and diseased leaf images, applying image augmentation techniques to improve model generalization, and training Convolutional Neural Networks (CNNs) for disease classification. I evaluated model performance using accuracy scores and confusion matrices, and developed a simple interface that allowed users to upload leaf images and receive instant predictions. This project strengthened my skills in dataset handling, model optimization, and practical application of AI, while demonstrating how technology can contribute to sustainable farming practices.

**Project 2:Visionary Aid – Smart Visual Assistant for the Blind**

The major project I contributed to during my internship was VisionaryAid, an AI-powered assistant designed to support visually impaired individuals. My work included developing real-time object detection to identify obstacles and everyday items, implementing OCR to read printed and handwritten text aloud, and creating a text-to-speech system for clear audio guidance. I also designed a voice command interface to enable hands-free operation. This project gave me the opportunity to apply my technical skills to a socially impactful solution that improves accessibility and independence for blind users.

## 3. Skills and Knowledge Gained

During my internship, I developed both technical and soft skills:

**Technical Skills**

During my internship at TARAS Systems and Solutions, I gained hands-on expertise in several core areas of Artificial Intelligence and Machine Learning:

Python Programming: Applied Python extensively to build and integrate AI modules.

Computer Vision: Used OpenCV and MediaPipe to implement real-time object detection and image processing.

Deep Learning Models: Worked with YOLO and SSD frameworks to gain practical exposure to object detection and scene understanding.

Optical Character Recognition (OCR): Integrated Tesseract OCR to recognize and read printed or handwritten text.

Voice Interfaces: Developed a speech recognition and text-to-speech system using SpeechRecognition and pyttsx3, enabling hands-free interaction.

System Integration: Learned how to combine multiple AI components into a cohesive, intelligent application that delivers real-time feedback.

**Soft Skills**

Alongside technical growth, the internship also helped me develop essential professional skills:

Communication: Improved my ability to present ideas clearly, explain technical concepts, and listen actively to feedback.

Teamwork: Collaborated effectively with peers, contributing to group discussions and joint problem-solving.

Adaptability: Learned to adjust my approach based on feedback and project requirements.

Time Management: Balanced coding, testing, and documentation tasks within deadlines, improving organizational efficiency.

Problem-Solving Mindset: Developed resilience and creativity in overcoming technical challenges during project development.

## 4. Challenges and How I Overcame Them

Like any meaningful learning experience, my internship came with challenges that tested my problem-solving abilities. One of the most significant hurdles was integrating multiple AI modules—object detection, OCR, and voice feedback—into a single, seamless system. Each module had its own limitations, such as latency issues or accuracy drops under certain conditions. Initially, synchronizing them to work together in real time was difficult.

To overcome this, I adopted a systematic approach. I studied optimization techniques to reduce processing delays and experimented with preprocessing methods to improve detection accuracy in varied lighting conditions. I also attended internal sessions with mentors, who guided me on best practices for modular coding and debugging. Collaborating with my peers proved invaluable, as brainstorming sessions often led to creative solutions. By iteratively testing and refining the system, I was able to achieve a stable and reliable performance. This challenge taught me resilience, patience, and the importance of teamwork in solving complex technical problems.

## 5. Conclusion

My internship at TARAS Systems and Solutions was a transformative journey that bridged the gap between academic learning and real-world application. Working on VisionaryAid, a smart visual

assistant for the blind, allowed me to apply theoretical concepts of Artificial Intelligence and Machine Learning to a project with genuine social impact. I gained practical exposure to computer vision, speech interfaces, and deep learning, while also learning how to design systems that prioritize usability and accessibility.

The experience not only enhanced my technical proficiency but also gave me insights into the professional work environment. I learned how projects evolve through collaboration, iteration, and feedback, and how every contribution adds value to the final outcome. Most importantly, the internship reinforced my passion for developing AI solutions that serve real-world needs, particularly in healthcare and accessibility domains. It has shaped my career aspirations and motivated me to continue exploring innovative applications of AI.

## 6. Recommendations

Based on my experience, I would recommend future interns at TARAS Systems and Solutions to approach the internship with curiosity and openness. It is important to actively participate in team discussions, as these sessions often provide clarity and spark new ideas. Interns should not hesitate to ask questions or seek feedback from mentors, as guidance from experienced professionals accelerates learning.

I also suggest that interns familiarize themselves with the basics of Python, computer vision libraries, and AI concepts before starting, as this will make the transition smoother. Learning version control tools like Git is equally important, since collaborative projects rely heavily on code management. Finally, documenting progress regularly helps track improvements and simplifies debugging. By following these practices, interns can maximize their learning and contribute meaningfully to projects.

## 7. Learning outcome

My internship provided several key learning outcomes that contributed to both my personal and professional development.

**Enhanced Technical Skills**:I became proficient in building AI modules for object detection, OCR, and voice interfaces, gaining confidence in applying Python and deep learning frameworks.

**Industry-Specific Knowledge:** I understood how assistive technologies are designed, tested, and deployed to meet real-world accessibility needs.

**Problem-Solving and Analytical Skills:**I learned to approach challenges methodically, debug complex systems, and optimize performance through experimentation.

**Time Management and Prioritization:** Balancing coding, testing, and documentation taught me how to manage deadlines effectively.

**Improved Communication and Teamwork:** Collaborating with peers and mentors improved my ability to share ideas clearly and work in a team setting.

**Adaptability to Professional Work Environment:** I adjusted to agile workflows and iterative development, gaining confidence in contributing to a fast-paced environment.

**Career Insights:** The internship confirmed my passion for AI/ML and inspired me to pursue projects that combine technology with social impact, particularly in healthcare and accessibility.

## 8. Appendices

### Appendix 1: Code Snippets of Key Functions Developed

**main.py**

```
import cv2
import pytesseract
from vision.object_detection import detect_objects
from vision.ocr_reader import extract_text
from vision.currency_detector import detect_currency
from voice.speech_to_text import get_command
from voice.text_to_speech import speak
from system.app_launcher import launch
from system.app_controller import type_text, save_file, perform_calculation, close_active_window
pytesseract.pytesseract.tesseract_cmd = r'C:\Program Files\Tesseract-OCR\tesseract.exe'
cap = cv2.VideoCapture(0)
speak("Visionary Aid is ready")
while True:
    ret, frame = cap.read()
    if not ret:
        continue
     speak("Listening for command")
    command = get_command()
    if not command:
        Continue
    command = command.lower()
   if "object" in command:
        objects = detect_objects(frame)
        speak("I see: " + ", ".join(objects) if objects else "No objects detected.")
   elif "read" in command or "text" in command:
        text = extract_text(frame)
        speak(text if text else "No text found.")
    elif "currency" in command:
        money = detect_currency(frame)
        speak(f"Detected: {money}" if money else "No currency detected.")
  elif "open" in command:
        app = command.replace("open", "").strip()
        launch(app)
        speak(f"Opening {app}")
 elif "write" in command:
        text = command.replace("write", "").strip()
```

```
        type_text(text)
        speak("Text written")
    elif "save as" in command:
        speak("Please say the filename to save")
        filename = get_command()
        if filename:
            filename = filename.strip().replace(" ", "_") + ".txt"
            save_file(filename)
            speak(f"File saved as {filename}")
        else:
            speak("Filename not recognized")
    elif "save" in command:
        save_file()
        speak("File saved")
    elif "calculate" in command:
        expression = command.replace("calculate", "").strip()
        perform_calculation(expression)
        speak("Calculation performed")
    elif "close" in command:
        close_active_window()
        speak("Window closed")
    elif "exit" in command or "quit" in command:
        speak("Goodbye.")
        Break
cap.release()
cv2.destroyAllWindows()
```

**Speak.py**

```
import speech_recognition as sr
r = sr.Recognizer()
try:
    with sr.Microphone() as source:
        print("Mic is working. Speak something:")
        audio = r.listen(source)
        print("You said:", r.recognize_google(audio))
except Exception as e:
    print("Mic error:", e)
```

**Speech-to-text.py**

```
import speech_recognition as sr
```

```
def get_command():
    r = sr.Recognizer()
   # Optional: List all available microphones and pick one if needed
    # print(sr.Microphone.list_microphone_names())

    try:
        # Use a specific microphone if you know the index (optional)
        with sr.Microphone() as source:
            print("    Adjusting for ambient noise...")
            r.adjust_for_ambient_noise(source, duration=1)  # More reliable calibration
            print("    Listening... Speak now.")
            audio = r.listen(source, timeout=10, phrase_time_limit=7)
            print("    Recognizing...")
            command = r.recognize_google(audio)
            print(f"✅ Recognized: {command}")
            return command.lower()
    except sr.WaitTimeoutError:
        print("⏰ Listening timed out. No speech detected.")
    except sr.UnknownValueError:
        print("❌ Could not understand audio.")
    except sr.RequestError as e:
        print(f"    Could not request results; {e}")
    except Exception as e:
        print(f"   Error: {e}")

    return ""
```

**Text-to-speech.py**

```
import pyttsx3
engine = pyttsx3.init()
def list_voices():
    voices = engine.getProperty('voices')
    for index, voice in enumerate(voices):
        print(f"{index}: {voice.name} ({voice.languages})")
def speak(text, rate=150, volume=1.0, voice_index=None):
    engine.setProperty('rate', rate)
    engine.setProperty('volume', volume)
    if voice_index is not None:
        voices = engine.getProperty('voices')
        if 0 <= voice_index < len(voices):
```

```
            engine.setProperty('voice', voices[voice_index].id)
        engine.say(text)
        engine.runAndWait()
```

**Facerecognition.py**

```
from deepface import DeepFace
import cv2

def recognize_face(frame):
    try:
        result = DeepFace.find(frame, db_path="face_db", enforce_detection=False)
        if result and len(result[0]) > 0:
            return result[0].iloc[0]["identity"].split("/")[-1]
        return "Unknown person"
    except:
        return "No face detected"
```

**App controller.py**

```
import pyautogui
import time
def type_text(text):
    time.sleep(1)
    pyautogui.typewrite(text, interval=0.05)
def save_file(filename="output.txt"):
    pyautogui.hotkey('ctrl', 's')
    time.sleep(1)
    pyautogui.typewrite(filename)
    pyautogui.press('enter')
def perform_calculation(expression):
    time.sleep(1)
    pyautogui.typewrite(expression)
    pyautogui.press('enter')
def close_active_window():
    pyautogui.hotkey('alt', 'f4')
```

**App launcher.py**

```
import subprocess
import time
def launch(app_name):
    app_name = app_name.lower()
```

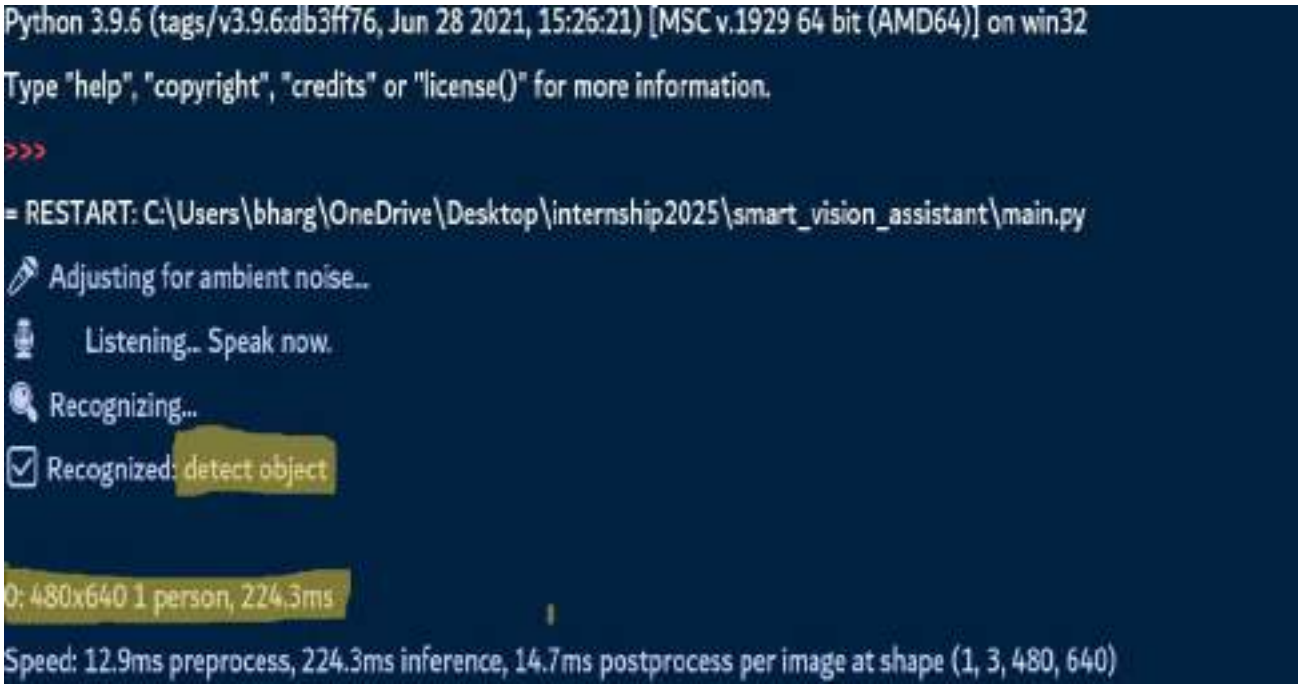
```
    if "notepad" in app_name:
        subprocess.Popen(["notepad.exe"])
        time.sleep(2)
    elif "calculator" in app_name or "calc" in app_name:
        subprocess.Popen(["calc.exe"])
    elif "magnifier" in app_name:
        subprocess.Popen("magnify.exe")
    elif "narrator" in app_name:
        subprocess.Popen("Narrator.exe")
    elif "command prompt" in app_name or "cmd" in app_name:
        subprocess.Popen("cmd.exe")
    elif "explorer" in app_name or "file manager" in app_name:
        subprocess.Popen("explorer.exe")
    elif "wordpad" in app_name:
        subprocess.Popen(["write.exe"])
    elif "settings" in app_name:
        subprocess.Popen("start ms-settings:", shell=True)
    elif "control panel" in app_name:
        subprocess.Popen("control.exe")
elif "paint" in app_name:
        subprocess.Popen("mspaint.exe")
elif "browser" in app_name or "edge" in app_name:
        subprocess.Popen("start msedge", shell=True)
elif "task manager" in app_name:
        subprocess.Popen("taskmgr.exe")
else:
        try:
            subprocess.Popen(app_name, shell=True)
        except Exception as e:
            print(f"Error: Could not open {app_name} - {e}")
```

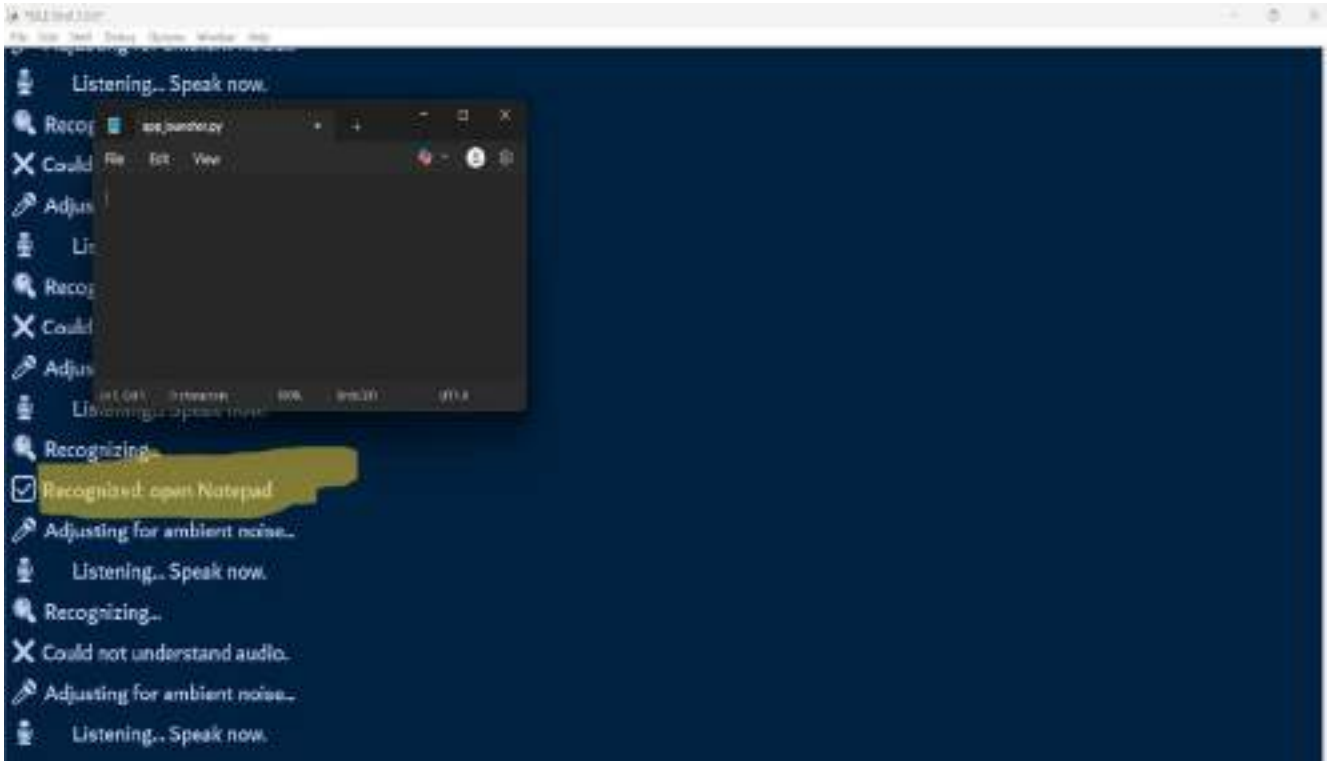
**Currency_detection.py**

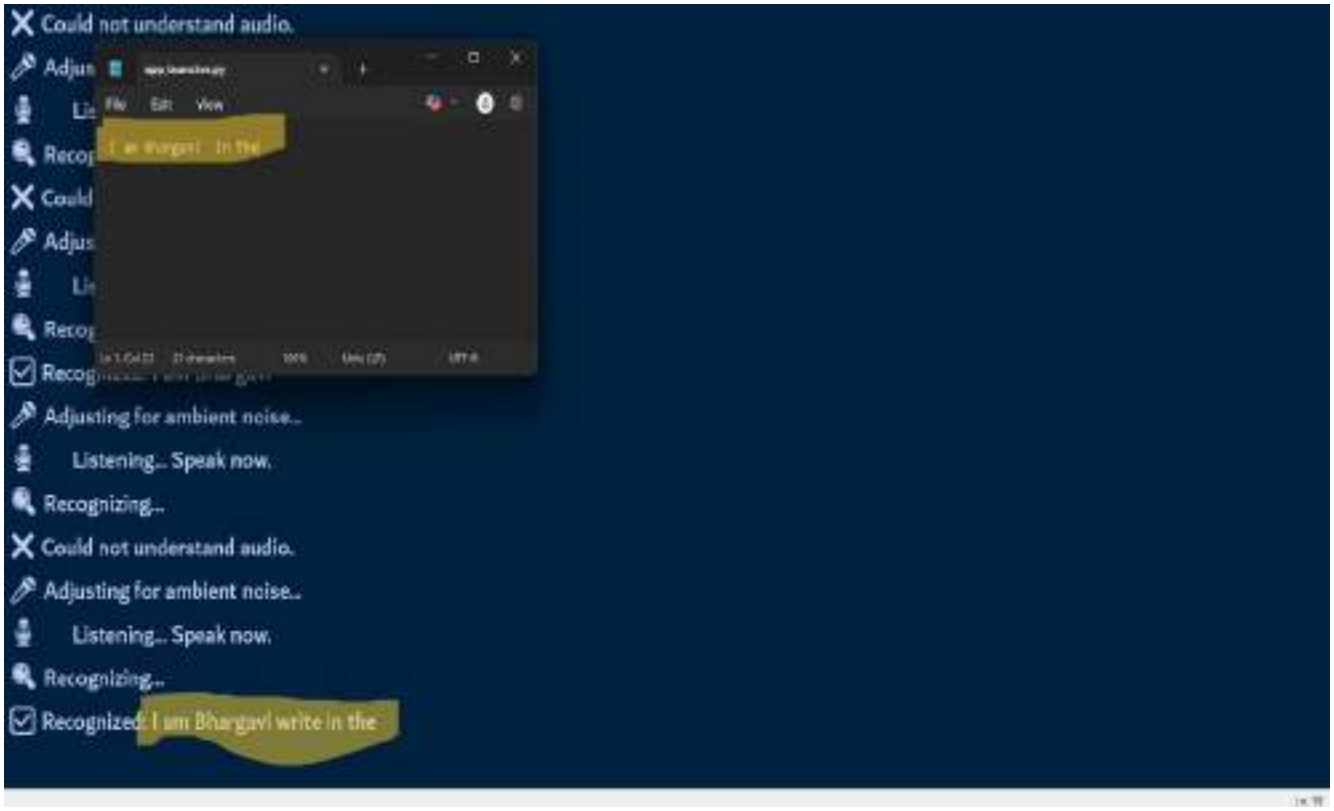
```
import cv2
import pytesseract
def detect_currency(frame):
    """
    Detects and recognizes currency notes from a given frame.
    Uses OCR to read printed values on the note.
    Returns the detected currency denomination or None if not recognized.
    """
```

```
 gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
   _, thresh = cv2.threshold(gray, 120, 255, cv2.THRESH_BINARY)
 text = pytesseract.image_to_string(thresh)
  text = text.lower()
  if "100" in text:
     return "100 Rupees"
  elif "200" in text:
     return "200 Rupees"
  elif "500" in text:
     return "500 Rupees"
  elif "2000" in text:
     return "2000 Rupees"
  elif "50" in text:
     return "50 Rupees"
  elif "20" in text:
     return "20 Rupees"
  elif "10" in text:
     return "10 Rupees"
  else:
     return None
```

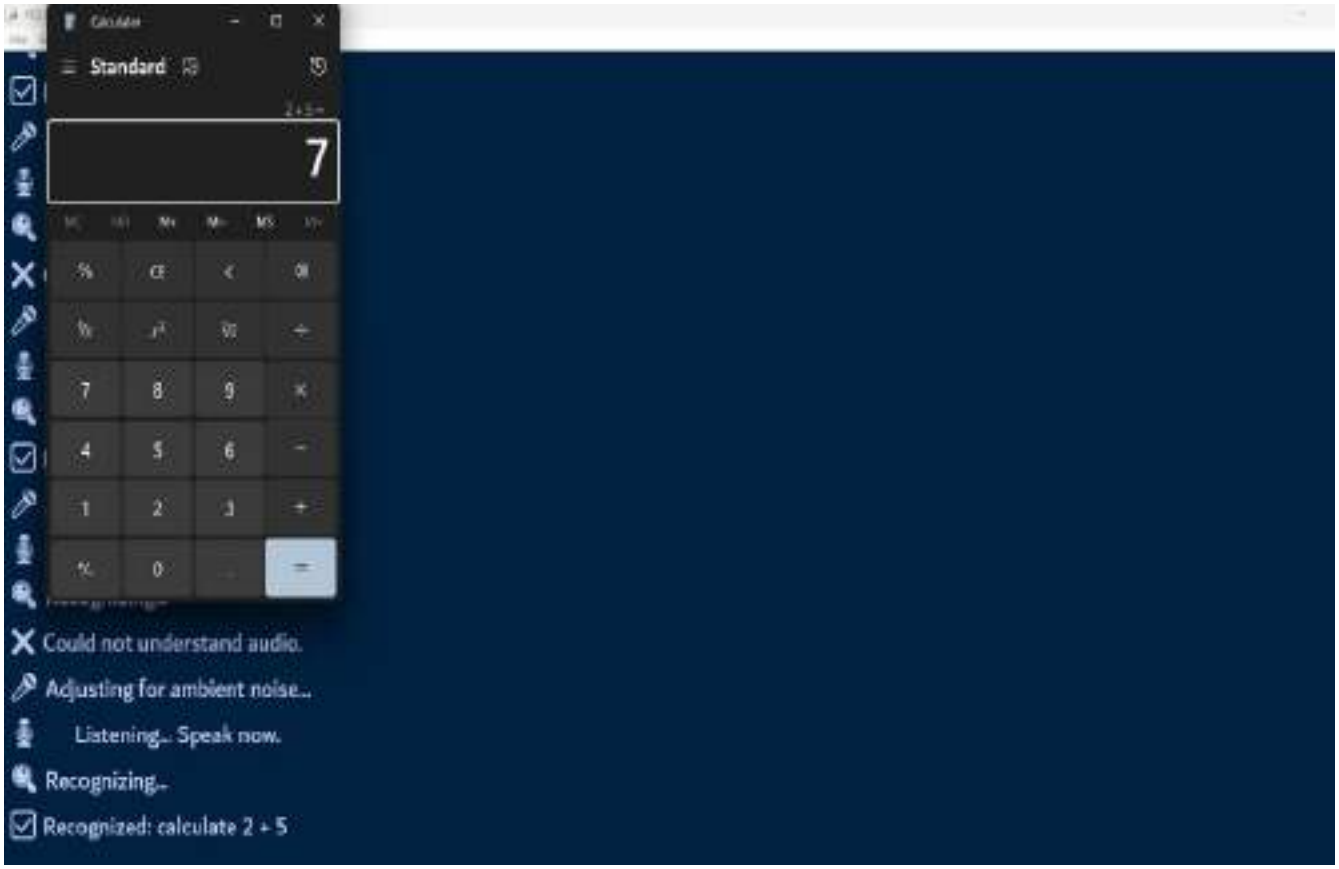
**Appendix 2: Screenshots of the User Interface**

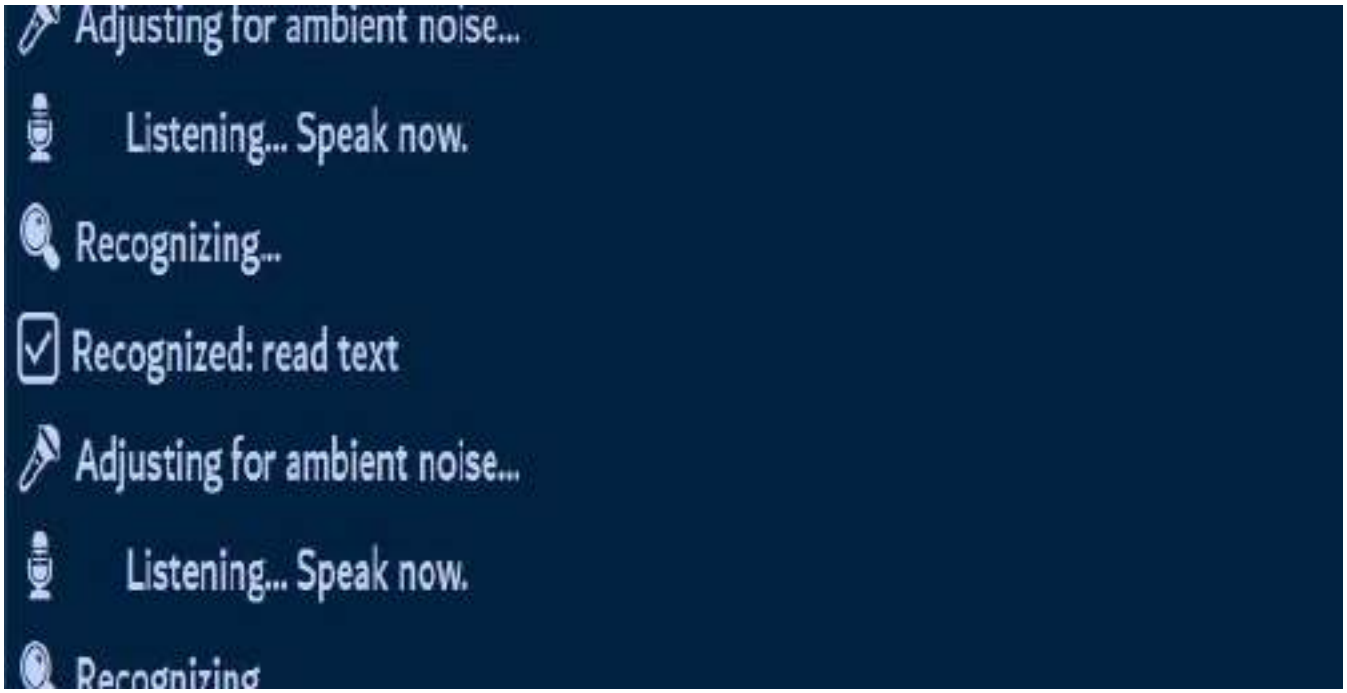



Listening.. Speak now.
File Edit View
Recognizing..
Recognized: open Notepad
Adjusting for ambient noise..
Listening.. Speak now.
Recognizing..
Could not understand audio.
Adjusting for ambient noise..
Listening.. Speak now.


Could not understand audio.
File Edit View
Adjusting for ambient noise..
Listening.. Speak now.
Recognizing..
Could not understand audio.
Adjusting for ambient noise..
Listening.. Speak now.
Recognizing..
Recognized: I am Bhargavi write in the


Standard
0
Could not understand audio.
Adjusting for ambient noise..
Listening.. Speak now.
Recognizing..
Recognized: open calculator


Standard
7
Could not understand audio.
Adjusting for ambient noise..
Listening.. Speak now.
Recognizing..
Recognized: calculate 2 + 5


Adjusting for ambient noise...
Listening... Speak now.
Recognizing...
Recognized: read text
Adjusting for ambient noise...
Listening... Speak now.
Recognizing


Recognizing...
Recognized: detect currency

**Appendix 3: Internship Certificate (if applicable)**

TARAS
SYSTEMS AND SOLUTIONS

*CERTIFICATE OF COMPLETION*

This is to certify that

**CHERUKUMALLI JASWINI (22761A4207)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Certificate No: TS58389
Date of Issue : 2025-07-07

Taras Systems and Solutions Bengaluru

Director-Operations

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Ministry of MSME, Govt. of India

NXT SYNC

# INTERNSHIP COMPLETION CERTIFICATE

QUALITY MANAGEMENT SYSTEM ISO 9001 CERTIFIED

AICTE All India Council for Technical Education

*Veluri Bhavya*

has successfully completed the internship in **Full Stack Java Web Development** conducted by **Nxtsync** from 15/05/2025 to 15/07/2025.

CEO

COO

Ministry of MSME, Govt. of India

NXT SYNC

# INTERNSHIP COMPLETION CERTIFICATE

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*Jampani Venkata Yaswanth Varma*

has successfully completed the internship in **Full Stack Java Web Development** conducted by **Nxtsync** from 15/05/2025 to 15/07/2025.

CEO

Anil

COO

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This is to certify that

**ZANGALA RONI DANIEL (22761A4265)**

**Lakireddy Bali Reddy College of Engineering**

has successfully Completed the Internship program on

*Artificial Intelligence and Machine Learning*

From 2025-05-14 to 2025-06-29

Taras Systems and Solutions
Bengaluru

Certificate No.: TSS8434
Date of Issue.: 2025-07-07

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