



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(An Autonomous Institution since 2010)

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

L.B. Reddy Nagar, Mylavaram, NTR District, Andhra Pradesh - 521230



A Two-Day Workshop

on



Analysis of Medical Images using AI and Working on Open LLM Models - NLP

(04 - 05 September, 2023)

Learning Outcomes

- ★ Open LLMs
- ★ Working on LLAMMA
- ★ Developing own LLMs like ChatGPT
- ★ Analysing Medical Images
- ★ Finding abnormality and disease using images
- ★ Telegram Bot integration

Resource Person

Mr. Sai Satish

**CEO, Indian Servers
&
President, AIMER Society**



WHO



**V Sem. CSE
Students**

VENUE



**SONET HALL
Block - 1**

TIMINGS



**09:30 AM to
04:00 PM**

SEATS



**100 Seats
(First Come First Serve Basis)**

**Registration
Fee**

**Rs. 300/-
ONLY**

Scan to Pay



(Use any UPI App like GPay /
PhonePe / PayTM / BHIM UPI
/ WhatsApp, etc.)

Scan to Register



Convener



**Dr. D. Veeraiah
Professor & HOD**

Co-Ordinators:



Mr. N.V. Naik



Mrs. B. Swathi



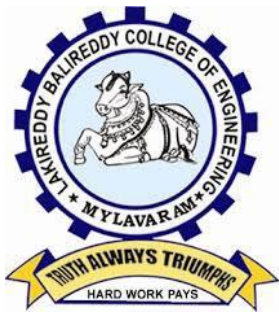
Mr. Sk. Johny Basha



Mr. S. Srinivasa Reddy

Organized by:

Department of Computer Science and Engineering



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Accredited by NAAC with 'A' Grade & NBA (Under Tier - I)

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

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

REPORT

on

A Two-Day Workshop on "Analysis of Medical Images using AI and Working on Open LLM Models – NLP"

(04 – 05 September 2023)

Academic Year	: 2023 – 24
Event Type	: <i>A Two-Day Workshop</i>
Event Title	: <i>Analysis of Medical Images using AI and Working on Open LLM Models – NLP</i>
Date/s	: <i>04/09/2023 to 05/09/2023</i>
Venue	: <i>SONET HALL, 2nd Floor, Block – 1</i>
Resource Person	: <i>Mr. D. Sai Satish, CEO, Indian Servers</i>
Convener	: <i>Dr. D. Veeraiah, Professor & HOD – CSE</i>
Coordinators	: <i>Mr. N.V. Naik, Sr. Asst. Prof., Dept. of CSE</i> <i>Mrs. B. Swathi, Sr. Asst. Prof., Dept. of CSE</i> <i>Mr. Sk. Johny Basha Sr. Asst. Prof., Dept. of CSE</i> <i>Mr. S. Srinivasa Reddy, Sr. Asst. Prof., Dept. of CSE</i>
Target Audience	: <i>B.Tech. V Sem. & A, B, C/Sec.</i>
Total Participants	: <i>94 Students</i>

Objective of the Event:

The main objective of this event is to provide participants with a comprehensive understanding of utilizing artificial intelligence for the analysis of medical images, with a specific focus on Natural Language Processing (NLP) applications through hands-on exercises.

Learning Objectives:

- Proficient Application of AI in Medical Image Analysis
- Competence in NLP Techniques and LLM Model Utilization
- Enhanced Diagnostic Decision-Making
- Understanding of NLP for Healthcare Data Processing
- Innovative Problem Solving in Healthcare
- Critical Evaluation of AI and NLP Applications in Healthcare
- Contributions to Advancements in Healthcare Technology

Date: 04/09/2023

Inauguration:

This workshop was inaugurated by ***Dr. D. Veeraiah, HOD – CSE and Convener*** of this Workshop, along with the ***Resource Person Mr. D. Sai Satish, CEO, Indian Servers and President, AIMER Society*** and ***Coordinators of the workshop Mr. N.V. Naik, Mrs. B. Swathi, Mr. Sk. Johny Basha, and Mr. S. Srinivasa Reddy.***

Ms. Harshitha, Presenter welcomed all the dignitaries on to the dais. In her welcome speech, she highlighted the importance and objectives of organizing this workshop. After that, she invited ***Dr. D. Veeraiah*** to give his valuable insights on the workshop.

Our Convener, Dr. D. Veeraiah, in his inaugural speech thanked the Management and Principal for accepting our proposal and granting the funds to conduct this workshop. He thanked all the participants who registered for this workshop and Resource Person Mr. D. Sai Satish, CEO, Indian Servers, for accepting our request irrespective of his busy schedule. He added the importance of open-source LLM (Large Language Models) frameworks, NLP capabilities for medical data processing and analysis, exploring potential applications of AI and NLP in medical imaging, AI-driven solutions in their respective healthcare settings, etc. He requested everyone in this workshop to learn the concepts, which will help them in identifying /developing some applications in this thrust area.

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 L B Reddy Nagar, Mylavaram -521 230, N.T.R District, Andhra Pradesh.

A Two-Day Workshop
 on
**"Analysis of Medical Images using AI and Working on
 Open LLM Models - NLP "**
4th & 5th Sep 2023

Resource Person : Mr.Sai Satish
 CEO, Indian Servers and President, AIMER Society

Organized by
Department of Computer Science & Engineering

Fig. 1: Welcome Banner of Workshop



Fig. 2: 04/09/2023 – Ms. Harshitha, Presenter welcoming Dignitaries



**Fig. 3: 04/09/2023 – Dr. D. Veeraiah, Convener and Mr. D. Sai Satish, Resource Person
 on Dais**



Fig. 4: 04/09/2023 – Inaugural Speech by Dr. D. Veeraiah, Convener



Fig. 5: 04/09/2023 – Inaugural Speech by Mr. D. Sai Satish, Resource Person



Fig. 6: 04/09/2023 – V Sem. Students Participated in Workshop

Day 1: 04/09/2023

Session: I

Topic: Introduction to CNN, Labelling, Classification, Object Detection, Segmentation

Our Resource Person Mr. D. Sai Satish, started his lecture by giving clear insights on what is RoboFlow website, how does it is useful for image processing, Convolutional Neural Networks (CNN), what is meant by labelling, how to classify the items in the dataset, basics of object detection, etc.

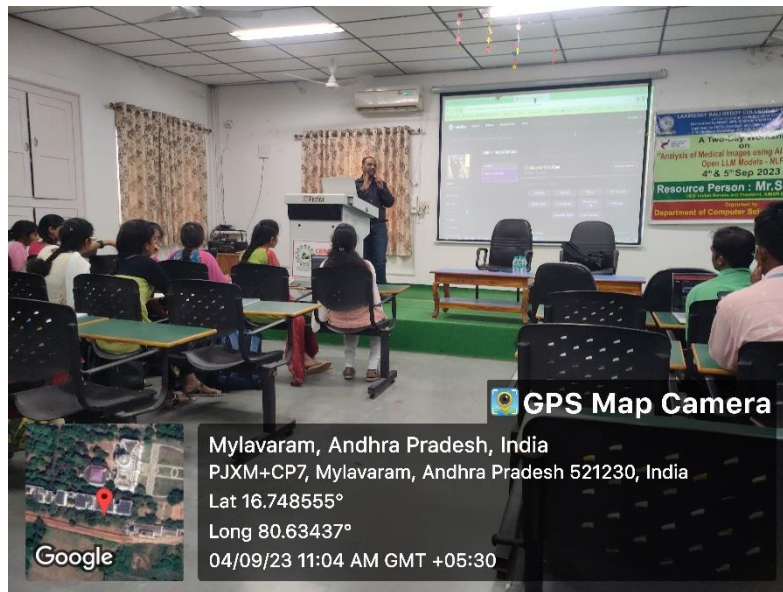


Fig. 7: 04/09/2023 – Mr. Sai Satish (Resource Person) discussing about RoboFlow Website Usage



Fig. 8: 04/09/2023 – Mr. Sai Satish (Resource Person) discussing about Classification and Segmentation

Day 1: 04/09/2023

Session: II

Topic: Google Teachable Machine, YOLO (You Only Look Once) and Hands-on

Our Resource Person Mr. D. Sai Satish started his lecture by giving clear insights on Google Teachable Machine. He said that “Teachable Machine is a web-based tool that makes creating machine learning models fast, easy, and accessible to everyone.”

After that, he gave brief demonstration on how Teachable Machine can be used for gathering data from different sources such as images, videos, poses, sounds, etc. Then how to train the model using Teachable Machine, as well as exporting the developed model to the websites or applications.

Then he discussed the *“You Only Look Once: Unified, Real-Time Object Detection”* algorithm and usage. After the discussion, students have been involved in loading the datasets and working with YOLO algorithm for object detection.



Fig. 9: 04/09/2023 – Students working in Hands-on Session on YOLO Algorithm for Object Classification and Detection

Day 2: 05/09/2023

Session: I

Topic: DistilBERT, GPT2 Model Fine Tuning, Integrations, OpenLLM

Our Resource Person Mr. D. Sai Satish started his lecture by giving a brief recap of previous sessions. Then he demonstrated the purpose of BERT and how DistilBERT is different, how it can be trained, etc. After that, delivered a lecture on GPT2 Models and how they can be fine-tuned for text generations. Also, he discussed about OpenLLM (Open Large Language Models) for developing AI apps with ease.



Fig. 10: 05/09/2023 – Mr. Sai Satish (Resource Person) demonstrating GPT2 Fine-Tuning for Text Generations

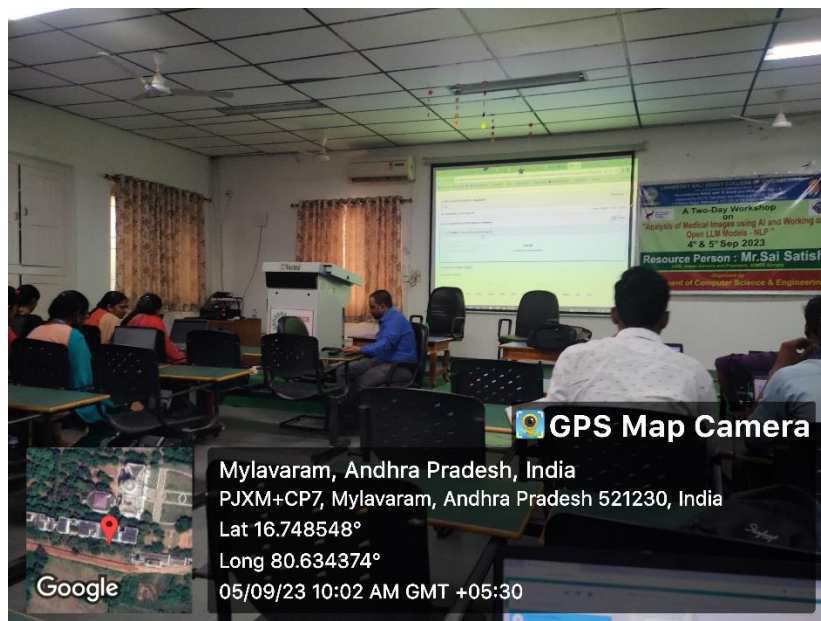


Fig. 11: 05/09/2023 – Mr. Sai Satish (Resource Person) demonstrating OpenLLM for building AI Applications

Day 2: 05/09/2023

Session: II

Topic: LLAMA2, GitaGPT, Disease Prediction using Symptoms, Bot Integration

Our Resource Person Mr. D. Sai Satish started his lecture by giving clear insights on LLAMA (Large Language Model Meta AI). He stated that “For the first version of LLaMa, four model sizes were trained: 7, 13, 33 and 65 billion parameters. LLaMA's developers reported that the 13B parameter model's performance on most NLP benchmarks exceeded that of the much larger GPT-3 (with 175B parameters) and that the largest model was competitive with state-of-the-art models such as PaLM and Chinchilla”.

After that, he gave brief demonstration on GitaGPT can be developed, how diseases can be predicted using symptoms, and involved students in developing bot and integrating with Telegram Application to predict whether the person is diseased or not using Images.



Fig. 12: 05/09/2023 – Students working on LLAMA2 and developing AI-based Application to predict the disease

Date: 05/09/2023

Valedictory & Feedback:

On the Valedictory Session, Coordinators of the workshop **Mr. N.V. Naik, Mrs. B. Swathi, Mr. Sk. Johny Basha, and Mr. S. Srinivasa Reddy** have been joined along with the **Resource Person Mr. D. Sai Satish, CEO, Indian Servers and President, AIMER Society.**

Ms. Harshitha, Presenter welcomed all the dignitaries on to the dais. In her welcome speech, she highlighted the key takeaways and objectives of organizing this Two-Day Workshop. After that, she called some of the students to share their feedback on this workshop.

Total four participants shared their feedback. Out of them, one of the participants named **Mr. M.V.R. Surya (21761A05G8) shared his feedback** and stated that “Before attending to this workshop, he doesn’t have any knowledge on LLAMA and LLM. But now, **he was very happy** that he can integrate a bot in telegram for disease prediction. He **requested that these types of workshops should be organized more** and make the students to get the industrial exposure. He thanked resource person for taking his time and training them from scratch. At the end, he thanked our college Management, Principal, HOD and Resource Person for training them on advanced topics”.

At the end of the valedictory session, **vote of thanks was given by Ms. Harshitha**, in which she has been paid her gratitude towards all the participants who spared their valuable time for attending this workshop. Then she thanked the Resource Person for accepting the request and taking sessions in the workshop. After that, she thanked every faculty member and supporting staff of the department for supporting these days to complete this workshop in successful manner. She also thanked the Resource Person, Principal, Head of the Department, Coordinators, and Management for giving him this valuable opportunity.



Fig. 13: 05/09/2023 – Student (Mr. M.V.R. Surya) sharing his Feedback



Fig. 14: 05/09/2023 – Student (Ms. D. Nandini) sharing her Feedback

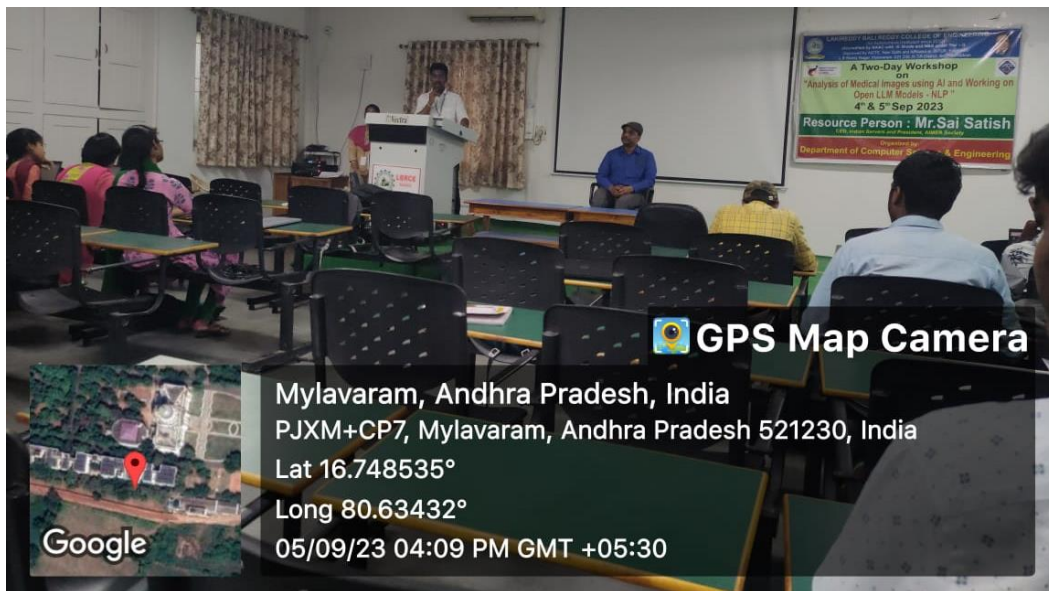


Fig. 15: 05/09/2023 – Student (Mr. K. Manoj) sharing his Feedback



Fig. 16: 05/09/2023 – Student (Ms. K. Bindusha) sharing her Feedback



Fig. 17: 05/09/2023 – Felicitating the Resource Person by Coordinators of the Workshop

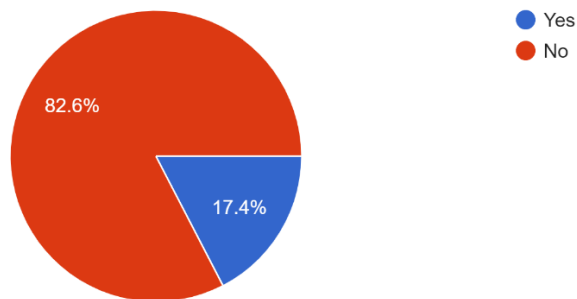
Learning Outcomes / Impact Analysis:

- Demonstrate the ability to apply AI techniques to analyze medical images for diagnostic purposes, leading to improved accuracy and efficiency in healthcare practices.
- Acquire practical skills in working with Natural Language Processing (NLP) techniques and utilizing Open Large Language Models (LLMs) to process and analyze medical data effectively.
- Improve diagnostic decision-making through the integration of AI-based image analysis, leading to more precise and timely clinical assessments.
- Gain a comprehensive understanding of how NLP can be applied to process and extract valuable information from healthcare-related text data, enabling more effective data utilization.
- Develop the ability to conceptualize and implement innovative solutions in healthcare settings by leveraging AI and NLP technologies.
- Analyze and critically evaluate the suitability and effectiveness of AI and NLP applications in various healthcare scenarios, enabling informed decision-making in real-world applications.

Feedback Responses from All Participants:

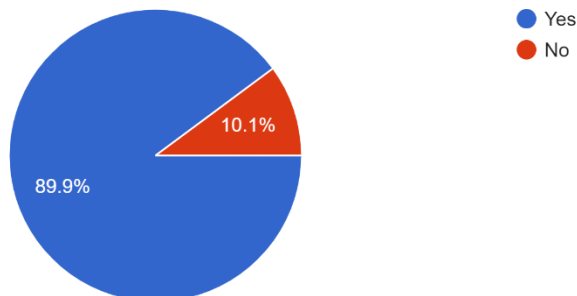
Do you have any idea about LLM Models before attending this workshop?

69 responses



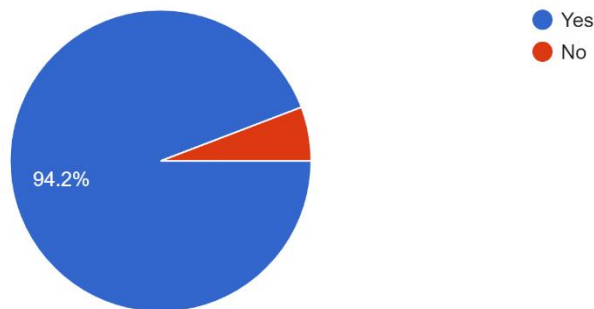
Did the workshop meet your learning outcomes?

69 responses



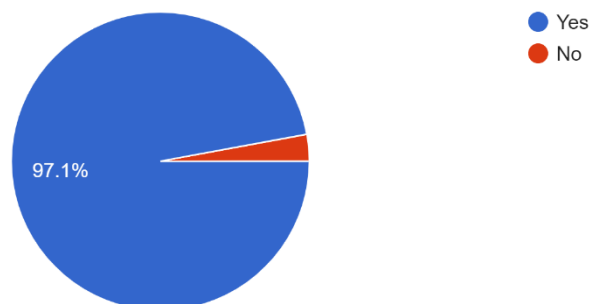
Did you feel engaged and actively involved in the workshop activities and discussions?

69 responses



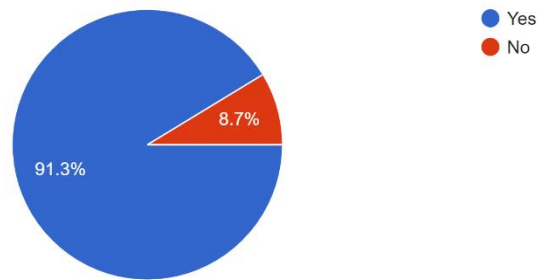
Were the workshop hands-on sessions made you to involve and learn new things?

69 responses



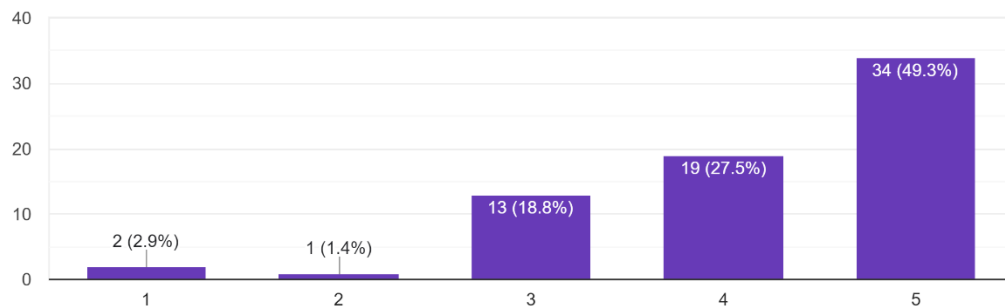
Does your expectations met by the sessions taken by Mr. D. Sai Satish Sir?

69 responses



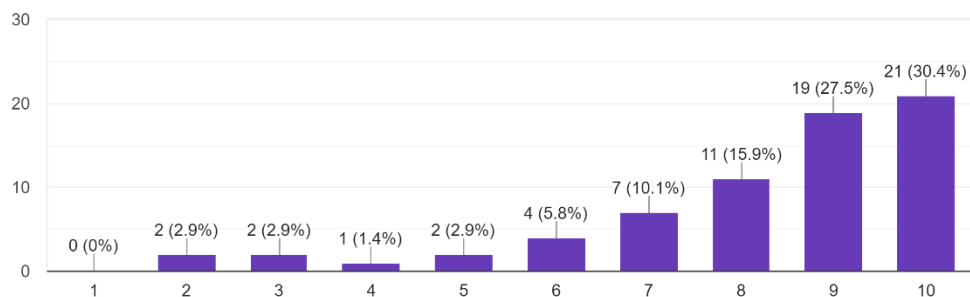
How would you rate the Resource Person (Mr. D. Sai Satish) effectiveness in leading the workshop?

69 responses



How likely are you to recommend this workshop to others?

69 responses



Suggestions:

- Need more time / days for this workshop
- Content should be elaborated
- Need more descriptive knowledge
- Share the Coding Notebooks for future references

Coordinators

Mr. N.V. Naik

Mrs. B. Swathi

Mr. Sk. Johny Basha

Mr. S. Srinivasa Reddy

Handwritten signatures of the coordinators: N.V. Naik, B. Swathi, Sk. Johny Basha, and S. Srinivasa Reddy.

Handwritten signature of the convener: D. Veeraiah.

Convener

(Dr. D. Veeraiah)

HEAD

Department of Computer Science & Engineering
Lakshmi Bai Reddy College of Engineering
MYLAVARAM-521 230, A.P. INDIA

Published in Media about Workshop

Sakshi Paper, NTR District Edition, Page No. 9 dated: 06/09/2023

వర్క్ షాప్ ను సద్వినియోగం చేసుకోవాలి
 మైలవరం: కళాశాలలో నిర్వహిస్తున్న వర్క్ షాప్ ను విద్యార్థులు సద్వినియోగం చేసుకోవాలని ఇండియన్ సెర్వర్స్ అండ్ ప్రెసిడెంట్, ఏఐఐఐఐఐఐ సొసైటీ సీకాడీ సాయి సతీష్ తెలిపారు. స్థానిక లకి రెడ్డి బాలిరెడ్డి ఇంజనీరింగ్ కళాశాలలో కంప్యూటర్ సైన్స్ అండ్ ఇంజనీరింగ్ విభాగంలో రెండు రోజుల వర్క్ షాప్ ను మంగళవారం ప్రారంభించారు. కంప్యూటర్ సైన్స్ అండ్ ఇంజనీరింగ్ విభాగం ఆధ్వర్యంలో అనాలిసిస్ ఆఫ్ మెడికల్ యిమేజిస్ యూజింగ్ ఏఐ అండ్ వర్క్ షాప్ ఆన్ ఓపెన్ ఎల్ఎల్ఎం ఎమ్ మోడల్స్-ఎన్ఎల్పి అనే అంశంపై తృతీయ

సంవత్సరం విద్యార్థులకు వర్క్ షాప్ నిర్వహించారు. కార్యక్రమంలో ప్రిన్సిపాల్ డాక్టర్ కే. అప్పారావు, డీన్ అకాడమిక్ డాక్టర్ ఎం. శ్రీనివాస రావు, విభాగాధిపతి డాక్టర్ వీరయ్య పాల్గొన్నారు.

యల్.బి.ర్.సి.ఈ కంప్యూటర్ సైన్స్ అండ్ ఇంజనీరింగ్ విభాగంలో రెండు రోజుల వర్క్ షాప్



మైలవరం, (వాస్తవ నయనమ్): స్థానిక లకిరెడ్డి బాలిరెడ్డి ఇంజనీరింగ్ కళాశాలలో (అటానమస్) కంప్యూటర్ సైన్స్ అండ్ ఇంజనీరింగ్ విభాగం ఆధ్వర్యంలో Analysis of Medical Images Using AI and Working on open LLM Models-NLP అనే అంశంపై తృతీయ సంవత్సరం విద్యార్థులకు రెండు రోజుల వర్క్ షాప్ (04:04-09-2023 & 05:05-09-2023) నిర్వహించారు. ఈ వర్క్ షాప్ ను సాయి సతీష్ CEO, Indian Servers and President AIMER Society, వర్క్ షాప్ కు రిసోర్స్ పర్సన్ గా విచ్చేసారు. శ్రీ సాయి సతీష్ రెస్పాన్డ్ ఎడిటర్ అండ్ సైబర్ సెక్యూరిటీలలో నిష్ణాతులు మరియు TEDx స్పీకర్ రెండు రోజుల శిక్షణ తరగతులలో విద్యార్థులకు LLM మోడల్స్ ఉపయోగించి chat GPT వంటి అప్లికేషన్స్ ని తయారు చేసి మెడికల్ ఇమేజిస్ ను ప్రాసెస్ చేయటం ద్వారా వ్యాధిని కనుగొనడం మరియు

ఈ సమాచారాన్ని టెలిగ్రామ్ బాట్ తో అనుసంధానం చేయటం వంటి అంశాలపైనూ అవగాహన కల్పించారు మరియు ఈ శిక్షణ తరగతులలో ఉత్తమ ప్రతిభ కనపరచిన విద్యార్థులకు సాయి సతీష్ వారి కంపెనీలో ఇంటర్న్ షిప్ చేసే అవకాశం కల్పించారు. ఈ కార్యక్రమంలో డాక్టర్ డి.వీరయ్య మాట్లాడుతూ విద్యార్థులకు LLM Model మీద ప్రాముఖ్యతలను తెలిపి వారికి సాంకేతిక రంగంలో విస్తృత పరిశోధన అంశంగా వున్న ఈ టెక్నాలజీని అందించినందుకు సాయి సతీష్ కృతజ్ఞతలు తెలిపారు. ఈ కార్యక్రమంలో కళాశాల ప్రిన్సిపాల్ డా.కె.అప్పారావు, డీన్ అకాడమిక్స్ డా.ఎం.శ్రీనివాస రావు, కంప్యూటర్ సైన్స్ అండ్ ఇంజనీరింగ్ విభాగాధిపతి డాక్టర్ డి.వీరయ్య, అధ్యాపకులు మరియు విద్యార్థిని, విద్యార్థులు పాల్గొన్నారు. యన్ వి నాయక్, బి స్వాతి, ఎన్ కె భాషా, ఎన్ శ్రీనివాస రెడ్డి ఈ వర్క్ షాప్ కో అర్జినేటర్లుగా వ్యవహరించారు.

- Coordinators**
 Mr. N.V. Naik
 Mrs. B. Swathi
 Mr. Sk. Johny Basha
 Mr. S. Srinivasa Reddy

D. Veeriah
Convener

(Dr. D. Veeriah)

HEAD

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