REPORT

on

National Level Project Competition

SIGNAL TO INTELLIGENCE: AI-ML

Prepared by: Niyati Majumdar

Event Date: 3rd November, 2023

Organized By:

Sarvajanik College of Engineering and Technology

in collaboration with **IEEE SCET SB**, **IEEE SPS MU SB** and **SIP Club**

Team Behind the Event:

General Chair: Prof. Chirag Paunwala

Treasurer: Prof. Ketki Pathak

Faculty Co-Ordinator: Prof. Chirag Paunwala

Prof. Sarosh Dastoor

Prof. Dhiren Bhagat

Prof. Chhaya Suratwala

Student Co-Ordinator: Meet Kathiriya

Niyati Majumdar

Vatsa Noticewala

Student Volunteer: Sumit Patel

Neel Gandhi

Anirban Jana

Priyansh Rander

Deepak Nair

Khushboo Jha

Manasvi Mehta

Hardik Suthar

Jill Saliya

Deep Patel

EVENT POSTER

Event Details:

Event Type: Competition

Event Mode: Hybrid Mode

Event Date: 3rd November, 2023

Event Venue: EC AV Room, SCET

Event Accessibility: For registered participants

INTRODUCTION:

To apply the knowledge from the classroom to real-world experience, project competition acts as a medium for career exploration. It takes the skills into the workforce and applies them to explore different career paths and specializations that suits individual interests. For the same, **Electronics and Communication Engineering Department, SCET** in association with **IEEE SCET SB**, **IEEE SPS MU** and **SIP Club** organized a National Level Project Competition **'Signal to Intelligence: AI-ML Project Competition.'**

In an era where the **convergence of signals and intelligence** plays a pivotal role in shaping technological landscapes, this competition aimed to harness the creativity and technical prowess of students. It provided a platform for participants to showcase their skills in developing AI-ML solutions that transform raw signals into intelligent insights, addressing real-world challenges and pushing the boundaries of what is achievable.

This competition stands as a beacon of innovation, encouraging students to navigate the complex intersection of Artificial Intelligence (AI) and Machine Learning (ML) within the dynamic themes of our time.

The competition unfolded across three intricately woven themes, each representing a distinct facet of the symbiotic relationship between signals and intelligence. Participants were challenged to explore the realms of AI and ML through the lenses of these themes, pushing the boundaries of innovation and problem-solving.

Theme 1: Intelligent Healthcare - Enhancing Diagnosis and Treatment through Biomedical Signal Analysis:

In the pursuit of advancing healthcare solutions, participants in Theme 1 embarked on a journey to harness the potential of AI and ML in biomedical signal analysis. The focus was on the intersection of biomedical signal processing and machine learning to develop innovative solutions that advance healthcare. It encouraged the participants to explore how biomedical signal, coupled with machine learning algorithms, can be used to analyse and interpret various biomedical signals (such as ECG, EEG, EMG, etc.) for improved diagnosis, treatment planning, and patient monitoring. Projects under this theme were based on the development of wearable health devices, predictive healthcare models, and real-time health monitoring systems.

Theme 2: Pattern Recognition using Computational Intelligence:

Theme 2 delved into the intricacies of pattern recognition, challenging participants to employ computational intelligence for discerning and interpreting complex patterns. This theme sought to unravel the potential applications of AI-ML in recognizing and understanding patterns across diverse domains, from image processing to data analytics. Projects under this theme encompassed a wide range of applications, from image and speech recognition to natural language processing and data analytics.

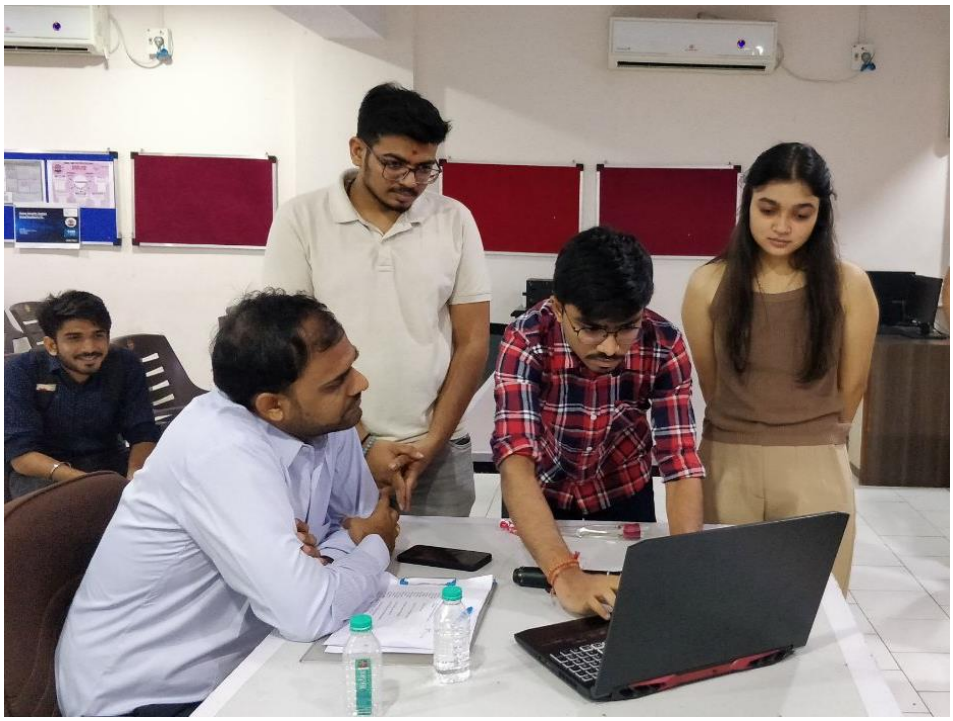
Theme 3: Linguistic Intelligence - Advancing Applications of NLP in Real-World Contexts:

Linguistic intelligence took centre stage in Theme 3, as participants explored the frontiers of Natural Language Processing (NLP) to advance applications in real-world contexts. This theme aimed to unravel the power of language in AI systems, transforming how machines interpret, understand, and respond to human language for practical, everyday applications.

OPENING REMARKS:

The event was commenced with the felicitation of the Jury Members of the competition Harendra Panchal who has a combined experience of over 6.5 years in the field of embedded software and hardware engineering, also he is a seasoned professional currently serving as a Senior Embedded Software Engineer at Picustech Software. And another Jury Dr. Jenish Dhanani who is truly an impressive AI and ML expert, donning the roles of researcher, industry professional, and educator for over 9 years.

The "Signal to Intelligence: AI-ML" competition began with a digital symphony of ideas and innovation as participants from various academic disciplines, backgrounds, and geographical locations joined us online. In the spirit of collaboration and the relentless pursuit of knowledge, these participants, armed with their enthusiasm and technical acumen, embarked on a journey that would redefine the intersections of AI and ML.



A total of 27 teams, comprising talented students with diverse perspectives and skill sets, enthusiastically accepted the challenge presented by the three distinctive themes of the competition. Their dedication and passion have been the driving force behind the success of this event, and today, we celebrate their creativity and determination.

Let us take a moment to acknowledge and commend the teams that participated in the "Signal to Intelligence: AI-ML" competition. Each team brought a unique perspective and solution to the challenges

presented, showcasing the depth of talent within our student community. Here is the list of participating teams:

Sr.No.	Participants	Title of Project	College
1	Kuldeep Singh	Sentiment Classification- IMDB dataset 50 K movies	INS Valsura
2	Ayushi Bhatiya Nehansh Patel Jill Saliya	Resume Screening App	SCET
3	Deep Patel Jeet Mehta Bhagya Patel	SymptoScan: AI for Early Disease Identification	SCET
4	Meet kathiriya Janvi nariya Sarangi kotadiya	Hand Gesture recognition using webcam	SCET
5	Gautam Vatiani Mohil jain Pratham Patel	Conversion of Sign Language to Text	SCET
6	Nimesh Sarvaiya Priyanshi Gelani	Emotion Recognition in Non-Speaking Individuals	SCET
7	Jay Taneja Abhishek Singh Meet Patel	Pneumonia detection using CNN Model	SCET
8	Deepak Shamsheer Aleemuddin Mombasawala Niket Singla	A*star Pathfinding Algorithm	SCET
9	Dhaval Sorathiya Priyam Kakadiya Nit Talavia	Predict Air Quality Index	SCET
10	Harsh Bhadani Kenil Faldu	Coin value countering	SCET
11	Mohit Bhatia Krishi Modi Viraj Kansara	Intelligent Healthcare	SCET
12	Dhanisth Sarawagi Anish Sopariwala Anand Sahu	Speech Emotion Recognition	SCET
13	Maitri Desai Dev Patel Hitaxi Lethwala	Breast Cancer Analysis and Prediction	SCET

14	Aarya Shah Nirjara Vasanwala	Multiple Disease Detection	SCET
15	Ruchit sheta Janvi Shah Sanskruti Patil	Number plate detection and data collection	SCET
16	Hema Sen Shweta Patel Sandesh Patil	Objection detection using ESP-32 cam	SCET
17	Devansh Thakkar Khushvi Patel Dharmaraj Jardosh	Implementing YOLOv4 Object Detection on Webcam	SCET
18	Hetasvi Bhimani	Speech Emotion Recognition	SCET
19	Kavita Swami Neel Gandhi	Traffic Sign Detection and Recognition	SCET
20	Harshita pandit Archie Rai	Self-driving RC car	SCET
21	Jayesh Chauhan	Language Translator	SCET
22	Niyati Majumdar Shruti Savani	Gesture Controlled-LED	SCET
23	Hunaif Shaikh Pratham Naik Devarsh Rathod	Hindi Language Recognition	SCET
24	Alok Mevawala Dev Dipak Joshi	Food Adulteration Detection and Ripening Techniques	SCET
25	Dhrumil Moga Vansh Dalal Dhruvil Fulwala	Hand gesture-controlled presentation	SCET
26	Aastha Patel Twinkle Jariwala	Driver Sleep Detection using Machine Learning	SCET
27	Khushboo Jha Miqdaad Indori	Number Recognition System	SCET

And the Triumph Belongs To...

After an intense journey of exploration, ideation, and implementation, the moment has arrived to celebrate the exceptional accomplishments of the winning teams in the "Signal to Intelligence: AI-ML" competition.These teams have not only demonstrated a keen understanding of artificial intelligence and machine learning but have

also proven their ability to translate innovative ideas into tangible solutions.

Position	Name	Title of Project
1st	Aarya Shah	Multiple Disease Detection
	Nirjara Vasanwala	
2nd	Maitri Desai	Breast Cancer Analysis and Prediction
	Dev Patel	
	Hitaxi Lethwala	
3rd	Nimesh Sarvaiya	Emotion Recognition in Non-Speaking Individuals
	Priyanshi Gelani	
3rd	Dev Joshi	Food Adulteration Detection and Ripening Techniques
	Alok Mevawala	

Amidst the dynamic and competitive landscape of the "Signal to Intelligence: AI-ML" competition, we reserve a moment to extend a special recognition to teams whose unwavering dedication and innovative spirit have earned them a well-deserved accolade.

Here are those 2 dominant teams;

Consolation Prize	Name	Title of Project
1st	Mohit Bhatia	Intelligent Healthcare
	Krishi Modi	
	Viraj Kansara	
2nd	Khushboo Jha	Number Recognition System
	Miqdaad Indori	

MEDIA COVERAGE:

સ્કેટ કોલેજના કોમ્પિટીશનમાં 33 ટીમે ભાગ લીધો

ડિઝિઝ ડિટેકશન ને ફ્રૂટ અડલ્ટ્રેશન ચેક કરવા પ્રોજેક્ટ મોડેલ રજૂ કરાયા

સિટી રિપોર્ટર . સુરત

સ્કેટ કોલેજના ઈલેક્ટ્રોનિક્સ એન્ડ કોમ્યુનિકેશન ડિપાર્ટમેન્ટ દ્વારા 'સિગનલ ટૂ ઈન્ટેલિજન્સઃ એઆઈ-એમએલ' પ્રોજેક્ટ કોમ્પિટીશનનું આયોજન કર્યુ હતુ. જેમાં 33 ટીમમાં 100થી વધુ વિદ્યાર્થીઓએ ભાગ લીધો હતો. જેમાં વિદ્યાર્થીઓએ વિવિધ થીમ પર પ્રોજેક્ટ બનાવ્યા હતા. અંતે જજીઝે ત્રણ ટીમોને ટોપ-3માં પસંદ કરી પ્રાઈઝ આપ્યા હતા.

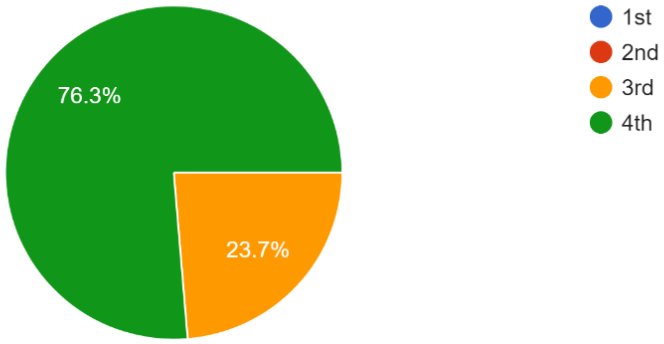
કોમ્પિટીશનમાં ફર્સ્ટ રેન્ક પર આવેલી ટીમે ડિઝીઝ આઈડેન્ટિફિકેશન સિસ્ટમ બનાવી હતી જેમાં ફેફસના એક્સરેની મદદથી બીમારીને ડિટેક્ટ કરી બતાવશે સાથે કેટલી અસર કરી રહી છે તે પણ બતાવશે. સેકન્ડ રેન્ક પર પેટર્ન રિકગનીશન પ્રોજેક્ટ રહ્યું

હતું. જેમાં ગુંગા અને બેહરા લોકો કેમેરાની સામે ઈશારાઓથી કરેલી વાતને સિસ્ટમ શબ્દોમાં કનવર્ટ કરી બતાવશે જેથી તેઓ સામાન્ય લોકો સાથે સહેલાઈથી વાત કરી શકશે. ત્રીજા ક્રમે રહેલી ટીમે ફ્રૂટ અડલ્ટ્રેશન ડિટેકશન સિસ્ટમ બનાવી હતી. જેની મદદથી ફળોને કેમિકલથી પકવેલા છે કે નહીં તે ડિટેક્ટ કરી શકાશે.

PARTICIPATION:

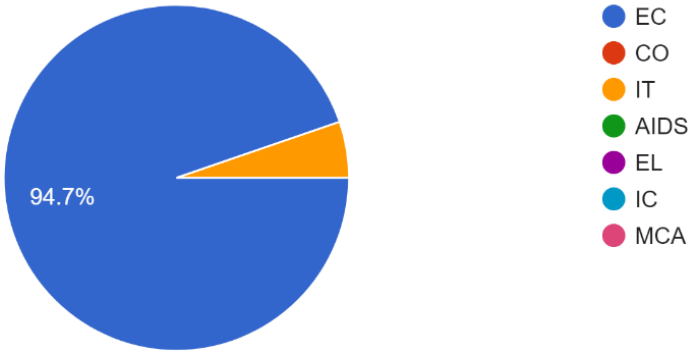
Year

38 responses



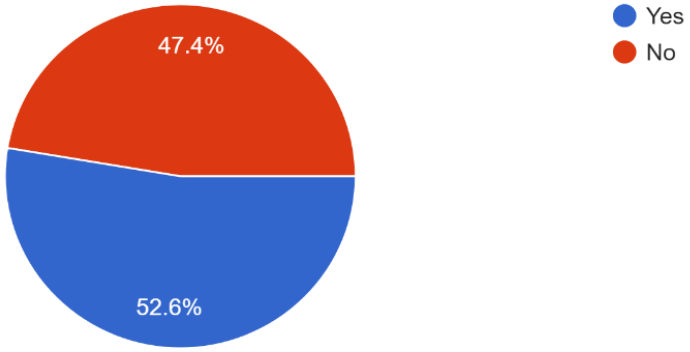
Branch

38 responses



Are you an IEEE Member ?

38 responses



GLIMPSE OF EVENT:


IEEE
Signal
Processing
Society
SCET
STUDENT BRANCH CHAPTER

CONCLUSION:

As we draw the curtains on the "Signal to Intelligence: AI-ML" competition, we reflect on a journey marked by innovation, collaboration, and the relentless pursuit of excellence. This event, organized by Electronics and Communication Engineering Department, SCET in collaboration with IEEE SCET SB, IEEE SPS MU, and SIP Club, has been a testament to the incredible potential that lies at the intersection of Artificial Intelligence (AI) and Machine Learning (ML).

Throughout the competition, we witnessed the convergence of diverse minds, each contributing to the tapestry of ideas that define the landscape of signal intelligence. The three themes—Intelligent Healthcare, Pattern Recognition using Computational Intelligence,

and Linguistic Intelligence—served as the guiding beacons, inspiring teams to explore, experiment, and push the boundaries of what is possible.

The 27 participating teams showcased not only technical acumen but also a deep understanding of the practical applications of AI and ML. Their projects illuminated the transformative power of these technologies across various domains, from revolutionizing healthcare diagnostics to unraveling complex patterns and advancing the capabilities of Natural Language Processing.