PRERANA EDUCATIONAL & SOCIAL TRUST (R)

PES INSTITUTE OF TECHNOLOGY AND MANAGEMENT

SHIVAMOGGA

ACCREDITED WITH GRADE B++ NAAC

PESITM IEEE 2007 STUDENT BRANCH

IEEE BANGALORE SECTION

36 Hours Hackathon

{CodXpress}

29-04-2023 & 30-04-2023

Hosted by

Dept of AI&ML

PESITM Shivamogga

PRERANA EDUCATIONAL & SOCIAL TRUST (R)

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NBA Accredited Programs: CSE, ECE, ISE, CV and ME

IEEE BANGALORE SECTION

36 Hours Hackathon

{CodXpress}

29-04-2023 & 30-04-2023

INAUGURATION: 09:30 AM AT MAIN SEMINAR HALL

Chief Guest

Dr. Navin Kumar

Vice Chair, MDC, IEEE Bangalore

Guest of Honor

Smt. Kruthika Rao Bharadwaj

Manager - Technical Support, AUTODESK

President

Dr Nagaraja R

CCA, PES Trust (R)

Dr Chaitanya Kumar M V

Principal, PESITM Shivamogga

PRERANA EDUCATIONAL & SOCIAL TRUST (R)

PES INSTITUTE OF TECHNOLOGY AND MANAGEMENT

NH 206, SAGAR ROAD, SHIVAMOGGA 577204, KARNATAKA

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CodXpress

/Trust-Preserving Data Intelligence/

Inauguration

09:30AM	**Welcome hours**
09:32AM	**Prayer Song** Gangandeep & Prabhanjan, 3rd Semester of AIML, PESITM Shivamogga
09:35AM	**Welcome Address** Dr. Chaitanya Kumar M V, Principal, PESITM, Shivamogga
09:38AM	**Lighting the lamp** Dignitaries on the dais
09:40AM	**Felicitation of Chief Guest & Mentors** Dr. Nagaraja R, CCA, PES Trust (R)
09:45AM	**Chief Guest Remark** Dr Navin Kumar, Vice Chair, MDC, IEEE Bangalore
09:50AM	**Presidential Remark** Dr Nagaraja R, CCA, PES Trust (R), Shvamogga
09:57AM	**Vote of Thanks** Mr Prabhanjan, PESITM IEEE Student, PESITM Shivamogga
10:00AM	**Expert Invited Talk on Entrepreneurship & Startups** Mrs. Kruthika Rao Bharadwaj, Manager - Technical Support, Autodesk

Hackathon Schedule

29-04-2023	11:00 AM	**Hackathon Starts**
	01:00PM	**Lunch**
	05:00PM	**Tea/ Refreshments and Interactions Scrum Session (All teams in Auditorium) – Identify bottlenecks and Plan out, if any.**
	08:00PM	**Dinner**
30-04-2023	08:00AM	**Breakfast**
	10:00AM	**Mentor Alert- Summarize Presentation and Finalize the Demo ready for Jury Inspection**
	11:00 AM	**Hackathon closes and Jury Inspection Starts**
	01:00PM	**Lunch**
	03:00PM	**Closing Meeting**
	03:30PM	**Departure with High Tea**

PESITM
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Dept. of AIML

PESITM Shivamogga

IEEE
BANGALORE SECTION
36 Hours
Hackathon

About AIML & its Scope

The industrial revolution 4.0 has introduced several new technologies that engineers need to imbibe to be relevant for the future. One among them is Artificial Intelligence and Machine Learning which is going to be a new trend that is going to shape the future and such engineers would be called as future thinking engineers. But given the new industrial revolution it has become essential that consolidation and strengthening of existing programs take place along with re-looking the engineering programs by introducing advance courses which is relevant with the new age demands. These kind of program should have specializations and there is need of futuristic courses that can keep pace with the technological and industrial advancements.

Artificial intelligence (AI) is wide-ranging branch of computer science concerned with building smart machines capable of performing tasks that typically require human intelligence. The field of artificial intelligence has been an interdisciplinary endeavor, requiring deep knowledge of both computational and human sciences.

Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves.

This Codxpress, is the first-ever section-level hackathon, to enhance students' problem-solving skills in various domains and engage in hands-on learning while solving complex challenges related to data intelligence.
22 problem statements were given and students were supposing to select one and submit the application. Out of over 100 applications only 70 applications were selected and we at PESITM is fortunate to represent 11 teams to this mega event. Among 11, 8 teams are from Dept of CSE and 3 are from AIML.

CodXpress is aimed at honing students' problem-solving abilities and hands-on learning. During the hackathon process, they will also be mentored by senior professional member of IEEE

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Participating students will be able to solve problems in the space of data intelligence in Robotics, Smart Grid, Health Tech, and others.

For Example:

1. Given a Black-Box AI model used in an autonomous navigation system, the goal is to extract an equivalent of the Model functionality with the least number of queries.
2. Given a Dataset, build an AI model to diagnose a medical condition. Build explanations on the model which can used by the doctor for further investigation.

Inauguration

IEEE Bangalore CodXpress was a flagship event of IEEE Bangalore and was hosted in 5 different locations. PESITM is fortunate to get this hosted. The inauguration was scheduled at 09:30 AM on 29th April 2023 and the event had its closing meeting at 03:30 PM on 30th April 2023. Students stayed and coded for 36 Hours Non-stop.

The department of AI&ML ensured this event was conducted smoothly and all the necessary support to the participants was provided. A total of 12 teams (3 in each team) took part in this event. Among them, one team was from MIT, Manipal. We have a few guests from IEEE Bangalore and IEEE Mangalore Sub Sections. More details about the event can be seen at https://codxpress.ieeebangalore.org/

Dr Navin Kumar, Chair MDC, IEEE Bangalore was the chief guest of the Inauguration, Mrs. Kruthika Rao, Technical Manager at AUTODESK was Guest of Honor. She addressed the gathering on Entrepreneurship and Startups, and the inauguration was presided over by Dr Nagaraja R, CCA PES Trust (R).

Dr Chaitanya Kumar M V, Principal of PESITM, welcomed the dignitaries on the dais and off the dais, participants and students from various colleges. Dr Navin spoke about the benefits of joining IEEE and appealed the students to join IEEE to get those benefit. He thanked Management and administration of PESITM for hosting this mega event. Dr Nagaraja R, gave the presidential remark and explained why such events should be conducted. He as the management representative thanked the IEEE Bangalore section for keeping faith in us. Mr Prabhanjan, IEEE Student Member presented the vote of thanks. The Guest of Honor, Mrs Kruthika Rao addressed the gathering on entrepreneurship and startups.


IEEE
BANGALORE SECTION
36 Hours
Hackathon
PES
TRUST
Seminar Hall


29-30 APRIL, 2023
In Association with
PESITM


IEEE
BANGALORE SECTION
THEME: SMART SOLUTIONS WITH DATA INTELLIGENCE
TWO-DAY SECTION-LEVEL HACKATHON, ACROSS FIVE LOCATIONS OVER KARNATAKA
29-30 APRIL, 2023
PESITM


IEEE
BANGALORE SECTION
THEME: SMART SOLUTIONS WITH DATA INTELLIGENCE
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IEEE
THEME: SMART SOLUTIONS WITH DATA INTELLIGENCE
PESITM
ENTREPRENEURSHIP &
STARTUPS


IEEE
THEME: SMART SOLUTIONS WITH DATA INTELLIGENCE
PESITM
ENTREPRENEURSHIP &
STARTUPS

Team Details

CMT-03: Design and Develop Sensor-based Solutions for Smart Cities, including

Nikhitha A M, Madhu Ningappa Byadgi, Pooja G, Swathi S
PES Institute of Technology and Management
Shivamogga-577204

The rapid increase in amount and types of solid and dangerous wastes due to industrialization and urbanization is one of the existing challenges. For effective and sustainable management of waste, we have come up with an approach to prevent the problem of segregating of waste. The bin built is going to segregate the waste into biodegradable and non-biodegradable wastes, with the help of sensors, ML techniques and CNN model. Later non-biodegradable waste is segregated into recyclable and non-recyclable wastes. Though the segregation of large number of wastes will be difficult from the minimum resources available, we choose this approach to segregate the wastes for domestic level at dumping stage itself. After the segregation, wastes will be stored in respective compartments. Also, the bin will be given an ability to sense the wastes reaching threshold level and notifying the respected authority to avoid the overfilling of wastes.

CMT-04: Weather forecast alert system for farmers

Jeevan R, Shashank S, Siddesh G D
PES Institute of Technology and Management
Shivamogga-577204

The traditional meat and poultry farms use a fixed quantity of supply, which creates an imbalance between demand and supply. Due to this imbalance, a huge amount is spent on balancing the requirements. There is an inequality among demand and supply since typical meat and poultry farms use a fixed amount of supply. In addition, when connecting and building the meat and poultry farm system, the procedure ignores the impact on the environment. The main aim is to increase the quality and maintain the maximum profit. In the first step, we are anticipating the future demands by analyzing the previous data. The second step include monitoring of poultry farm through the IoT device. Effective inventory optimization algorithms have been shown to be able to evaluate a significant portion of previous sales data and anticipate inventory future demand by taking seasonality and lead times into account.

CMT-06: Disease Identification, Classification and Severity Measurement in Plant Leaves Using Modified Deep Convolutional Neural Network (DCNN)

Goutham G, Madhumitha J, Aditya T
PES Institute of Technology and Management
Shivamogga-577204

Early detection of diseases in plants is a significant task that must be done in agriculture. This is something on which the economy profoundly depends for farmers and to the nation as well. Agriculture, with its allied sectors, is the largest source of livelihoods in India. 70 percent of its rural households still depend primarily on agriculture for their livelihood. In the field of agriculture, the automatic Identification and Classification of leaf diseases is highly desired to help farmers and reduce the risk of growing crops. Leaf spots can be indicative of crop diseases, where leaf batches (spots) are usually examined and subjected to expert opinion. In the proposed system, we are finding the disease affected area and severity of the leaf by applying k-means clustering and fuzzy logic. Later a novel approach using modified Deep Convolution Neural Network (DCNN) is implemented to classify the diseased leaf images and finally the proposed technique is compared with various existing methods.

CMT-18: Wearable Assistive Device for Blind

Sinchana A M, Sneha Manjunath, Sohan D A
PES Institute of Technology and Management
Shivamogga-577204

There are some technical systems which have emerged nowadays to help the blind persons. To introduce them, the first which can come in our mind is ‘Braille’. To print this Braille script, Braille Printer is a kind of embosser which is a technical hardware that can print the hard copy of braille, which is expensive process. The solution would be a wearable assistive device for the blind which converts the text into acoustic output enabling the user to read any sort of text for that a standalone Raspberry Pi based system with finger mounted camera that can help the visually impaired people in word based reading of the textual data pointed to by the finger. The system consists of a webcam that captures images which are enhanced. Following this the word pointed by the finger is extracted using a novel methodology and given to an Optical Character Recognition (OCR) engine. Subsequently, the textual output is given to a Text to Speech (TTS) converter to obtain audio via an audio output device such as earphones.

Team Details

CMT-19: Face matching and tracking the person using connected cameras

Anusha S S, Nisarga V, Tejas Gowda K
PES Institute of Technology and Management
Shivamogga-577204

Criminals and related illegal activities represent problems that are neither trivial to predict nor easy to handle once they are identified. The Police Forces (PFs) typically base their strategies solely on their intra-communication and interrogating the citizens, in the investigation chain which results in a lack of timeliness among the occurrence of the criminal event, its identification, and intervention. This project is focused on real-time human location detection and tracking using camera and embedded hardware. The target system is developed using convolutional neural network that facilitate person detection methods. The proposed work is developed mainly in three steps namely, detecting, recognizing and tracking the location of the person along with time frame. OpenCV library is used to detect humans and objects. Then image pixels containing the detected human is being compared against the area analyzed in the first step in continuous fashion for each frame to draw the final path.

CMT-20: Recognize the context of an image and describe them in a natural language like English

Ankitha N, Bhoomika S, Ankitha R Paled
PES Institute of Technology and Management
Shivamogga-577204

Image Captioning is the process of generating a textual description for given images. It has been a very important and fundamental task in the Deep Learning domain. Image captioning can be regarded as an end-to-end Sequence to Sequence problem, as it converts images, which are regarded as a sequence of pixels to a sequence of words. In low-resolution photographs, features are difficult to notice and complex sceneries are tough to analyze. By providing appropriate, expressive, and fluid subtitles, Deep Neural Networks can tackle these problems. The selected dataset is used to train the CNN model responsible for image feature extraction. These extracted features will be fed to the LSTM (Long short-term memory) model, a type of RNN (recurrent neural network), which in turn generates the image caption.

CMT-22: IoT based smart energy meter reading and billing system and power management using AI

Sparsha V, Srusty U Biligi, Shivakumar A
PES Institute of Technology and Management
Shivamogga-577204

The effort of collecting electricity utility meter reading. Internet of Things (IoT) present an efficient and coeffective to transfer the information of energy consumer wirelessly as well as it provides to detect the usage of the electricity the main intention of this project is measure electricity consumption in home appliances and generate it's bill automatically using IoT. The energy grid needs to be implemented in a distributed topology that can dynamically absorb different energy sources. IoT can be utilized for various applications of the smart grid with distributed energy plant meter, energy generation and energy consumption meter smart meter, energy demand side management and various area of energy production.

CMT-24: Public Health Monitoring and Alerting Users using IoT

Sushmitha H S, Sona Mathew, Vismaya
PES Institute of Technology and Management
Shivamogga-577204

Monitoring the health of a person and combinedly monitoring the public health through the data that we get. Alerting the user abut the infected person near him.

CMT-46: Automated Detection and Segmentation of Ischemic Stroke Lesions from MRI using Deep Learning

George Paulson, Shambhavi Sinha, Manan Bhatt
Manipal Institute of Technology, Manipal

An automated approach to detect and segment lesions resulting from acute stroke using deep learning on a large database of MRIs of patients with ischemic stroke. The model outputs the lesion volumes and 3D segmentation maps. We employed an ensemble strategy combined with a multimodal deep learning approach, with the final 3D segmentation map having averaged across all modalities.

Team Details

CMT-97: Design - approach tools and Algo using ML for Hospital / Health care provider network.

Devi S Naidu, Dhanya R, Dhanya Madhukeshwar Bhat
PES Institute of Technology and Management
Shivamogga-577204

Doctors face problems in reading and understanding such large unstructured documents of the patients. So, the system will make use of the NLP technique to create a new report that only contains Family history, personal details, and previous medication in a structured format. Once the report is generated and sent patient's respective doctor. In the doctor's module, using speech processing technology the doctor and patient conversation will be recorded.

CMT-98: Design - approach tools and Algo using ML for Hospital / Health care provider network

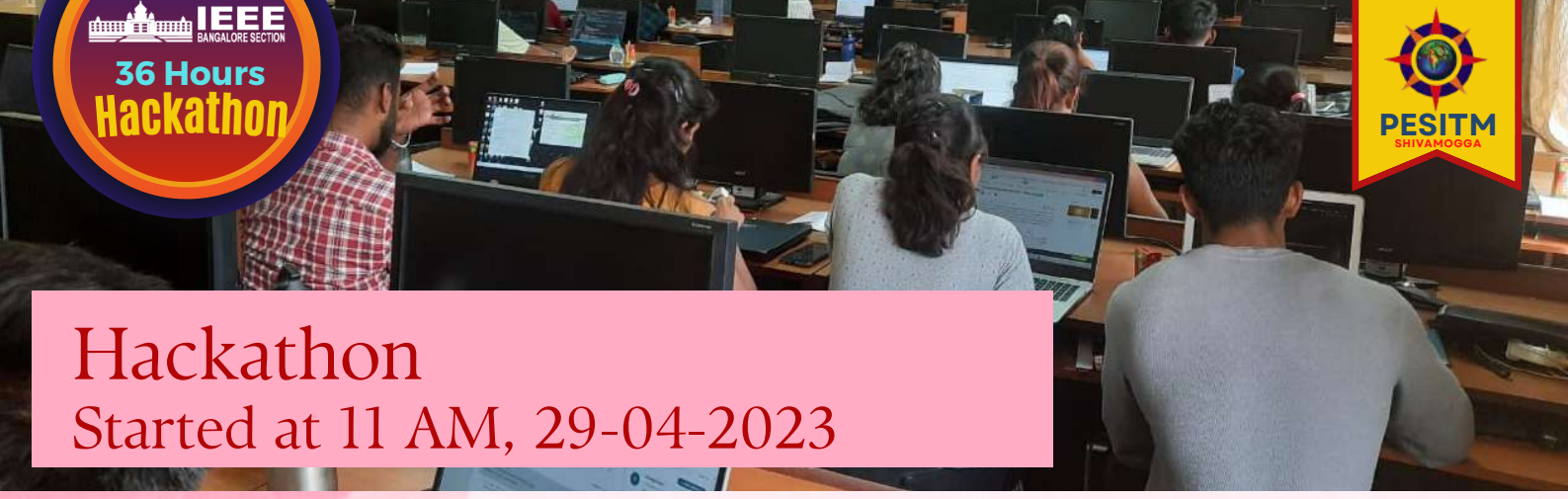
Ananyalakshmi P, Zoya Fathima, Sagar Kumar
PES Institute of Technology and Management
Shivamogga-577204

Continuous health monitoring emergency detection and getting an alert notification and uploading the data into the cloud. Medical electronics will also progress as the Internet of Things is implemented. The Internet of Things is the most rapidly developing technology. The Internet of Things is about to find a place in everything. A modest patient health monitoring

CMT-99: App that helps mothers to know about various types of vaccines, the importance of each vaccine, notification during the due time and other information related to kid's health.

Prabhajan Bhat, Sakib Ahamed, Samartha M J
PES Institute of Technology and Management
Shivamogga-577204

A monitoring app that lets communication between doctors and parents and also reminds the date and time of vaccines, also provides information about the required drug or vaccine



Hackathon
Started at 11 AM, 29-04-2023

High tea was arranged immediately after the inauguration and the Hackathon officially started at 11 AM. Dr Likewin Thomas, Hub Leader of IEEE Hackathon at PESITM welcomed all the participants in presence of all physical and virtual mentors. Dr Navin Kumar, briefed about the rules and regulation of Hackathon. The event planned for the hackathon is shown below:

Jury Decision

Following resource people were the Jury for inspecting and recommending three teams for further selection. Among selected teams the first team would be awarded Rs. 10,000/- Cash award.

1. **Dr. Likewin Thomas,** PESITM Shivamogga Hub Leader, Assoc. Prof., Dept. of AI&ML, PESITM.
2. **Dr. Navin Kumar.** Vice-Chair-MDC, IEEE Bangalore
3. **Dr. Manu A P,** Prof., Dept. of CSE, PESITM, Shivamogga

First Place at HUB LEVEL

Prabhajan Bhat, Sakib Ahamed, Samartha M J, (3rd Semester, Dept of AIML, PESITM Shivamogga)
Title: App that helps mothers to know about various types of vaccines, the importance of each vaccine, notification during the due time and other information related to kid's health.
Institute Guide: Dr.Likewin Thomas,
Physical Mentor: Dr. Manjunath Patel G C
Virtual Mentor: Manikandan Padmanaban

Second Place at HUB LEVEL

George Paulson, Shambhavi Sinha, Manan Bhatt, (6th Semester, Dept of ECE, MIT Manipal)
Title: Automated Detection and Segmentation of Ischemic Stroke Lesions from MRI using Deep Learning
Institute Guide: Dr. Anu Shaju Areeckal
Physical Mentor: Dr. Manjunath Patel G C
Virtual Mentor: Dr Abhishek Appaji

Third Place at HUB LEVEL

Sparsha V S, Srusty U Biligi, Shiva kumar A, (8th Semester, Dept of CSE, PESITM Shivamogga)
Title: IoT based smart energy meter reading and billing system and power management using AI
Institute Guide: Mr. Pradeep K
Physical Mentor: Dr. Vinay Kumar Jadoun
Virtual Mentor: Savita Shetty

Closing Meeting

Dr Navin Kumar closed the hackathon by congratulating all the participants and advised them to convert their ideas into a product and not to stop their research. He also extended his support by letting them known that IEEE will always support them in any manner let it be identifying the resource people for mentoring, attending and conducting conference, and also in funding. He once gain thanked the management of PESITM Shivamogga for organizing this Hackathon.

Based on consistency of remarks, execution, innovation, following team won the Second Prize from entire Zone

Prabhajan Bhat, Sakib Ahamed, Samartha M J, (3rd Semester, Dept of AIML, PESITM Shivamogga)

Title: App that helps mothers to know about various types of vaccines, the importance of each vaccine, notification during the due time and other information related to kid's health.

Institute Guide: Dr.Likewin Thomas,

Physical Mentor: Dr. Manjunath Patel G C

Virtual Mentor: Manikandan Padmanaban

IEEE BANGALORE SECTION
36 Hours Hackathon

BE Courses

- Computer Science & Engg.
- Electrical & Electronics Engg.
- Electronics & Communication Engg.
- Information Science & Engg.
- Mechanical Engg.
- Civil Engg.
- Artificial Intelligence & Machine Learning
- Computer Science & Design
- Computer Science & Engg. (Data Science)

PG Courses

- Master of Business Administration (Specializations: Marketing, Finance & HR)
- Master of Computer Application (MCA)

ABOUT PESITM

PESITM is approved by AICTE, affiliated to VTU, recognized by Govt. of Karnataka & an ISO 9001 Certified Institute started in 2007. We started with department of Computer Science & Engineering, Information Science & Engineering, Electrical & Electronics, and Electronics and Communication in 2007. In 2010, Department of Mechanical was introduced and in 2013, Department of Civil Engineering was introduced. We widen our wings by introducing AIML in 2021 and Data Science & Computer Science and Design Engineering in 2022. We had also Introduced MBA program in 2008 and MCA in 2022.

Since its establishment in the year 2007, we have grown from strength to strength and is establishing our legacy as academic excellence. The sole vision is to produce good engineers with human values and Indian ethos. We always focus on the holistic development of the students by a combination of both curricular and extracurricular activities. We believe that to develop a tender mind, we need to go beyond classroom teaching and we believe to make our students' industry ready. The excellent world-class infrastructure with modern facilities, teaching faculty of the best kind, we ensure quality education and a bright future to our students.

In order to provide a real world experiential learning environment and to fill the Gap between the Industry and the Academia, this Incubation Center was established. Aim of this incubator is to provide the platform to our students to work on real time problems and get an industry exposure early in their Engineering career.