



Sri **SAI RAM ENGINEERING COLLEGE**

An Autonomous Institution | Affiliated to Anna University & Approved by AICTE, New Delhi
Accredited by NBA and NAAC "A+" | An ISO 9001:2015 Certified and MHRD NIRF ranked institution
Sai Leo Nagar, West Tambaram, Chennai - 600 044. www.sairam.edu.in

Founder Chairman : MJF. Ln. Leo Muthu



1ST NATIONAL CONFERENCE ON ADVANCEMENT IN ARTIFICIAL INTELLIGENCE AND EMERGING TRENDS (NCAA IET'22)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE, SRI SAIRAM ENGINEERING COLLEGE &

DEPARTMENT OF DCE, ECE, EEE, MECHANICAL, CIVIL, SRI SAIRAM POLYTECHNIC COLLEGE

Department of Artificial Intelligence and Data Science, Sri Sairam Engineering College in association with the departments of Sri Sairam Polytechnic College organized its 1ST NATIONAL CONFERENCE ON ADVANCEMENT IN ARTIFICIAL INTELLIGENCE AND EMERGING TRENDS on 3rd & 4th November, 2022.

The National Conference on Advancement in Artificial Intelligence and Emerging Trends (NCAA IET 2022) intends to bring together academic researchers and industry practitioners to discuss advanced developmental activities in Computer Science, Information Technology, and Computational Engineering.

It offers a fantastic international forum for exchanging information and findings on theory, methodology, and applications of a variety of computational technology and science areas.

The conference gave participants the chance to share their knowledge, concepts, innovations, and problem-solving strategies while presenting original research on all facets of new scientific approaches for technologies, computational processes, software, and hardware solutions pertaining to particular scientific fields.

The Conference comprises Pre talk by renowned speakers.

On 31st October, 2022 the first conference Pre talk by Mr. Vinodhkumar Chokkaiah, Technical Manager, Cincinnati, Ohio, USA. He enlightened our students and participants with his talk on Artificial Intelligence in Healthcare


DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE
 in association with





Expert Talk on
Artificial Intelligence in Healthcare


Mr. Vinodhkumar Chokkaiah
 Technical Manager, Cincinnati,
 Ohio, USA

ON 31st October 2022
AT 6:00 PM to 7:00 PM

Mr. S. Muthamil Selvan | Mrs. P. Kalaiselvi | Dr. Swagata Sarkar | Dr. K. Porkumaran | Shri. Sai Prakash Leo Muthu
 Head/AI-DS | Principal | Chairman & CEO

How Is the FDA Considering Regulation and Machine Learning Medical Devices?

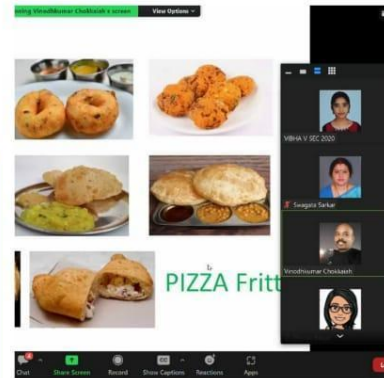
Traditionally, the FDA reviews medical devices pathway, such as [premarket clearance \(510\(k\)\)](#), [approval](#). The FDA may also review and clear software as a medical device, depending on the nature of that modification. [Learn the current FDA guidance on software modifications.](#)

The FDA's traditional paradigm of medical device regulation for artificial intelligence and machine learning technologies is changing.

four categories, from lowest (I) to highest risk (IV) to reflect the nature of the information and device use.

State of healthcare situation or condition	Significance of information provided	
	Treat or diagnose	Drive clinical management
Critical	IV	III
Serious	III	II
Non-serious	II	I

Figure 1: SaMD IMDRF risk categorization



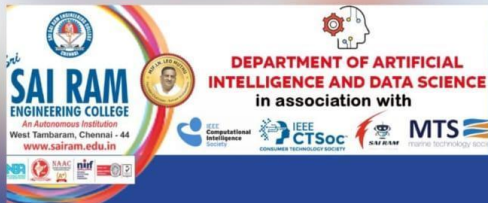
Locked Vs Adaptive Algorithms

$$8 + 1 = 9$$

$$A + B = C$$



On November 1st, 2022, Mr. Bhargav Parthasarathy, Senior Business Analyst and Requirements Manager - Advisory ERP, Defence ERP Solution shared his talk on Artificial Intelligence and Robotic Intelligence used in Australian Defence and guided students with the Job opportunities available for an Artificial Intelligence.

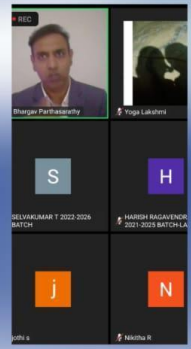
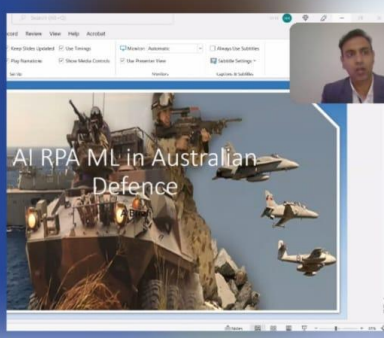
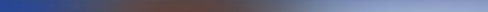


Expert talk on Artificial Intelligence and Robotic Intelligence

Mr. Bhargav Parthasarathy
Senior Business Analyst and Requirements Manager- Advisory ERP Defence ERP Solution

**ON 1st November 2022
AT 6:00 PM TO 7:00 PM**

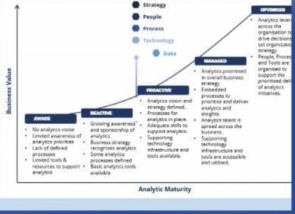
S. MuthanilSelvan | Dr. Swagata Sarkar | Dr. K. Parkumaran | Shri. Sai Prakash Leo Muttu
Mrs. P. Kalaiselvi | Head/AI-DS | Principal | Chairman & CEO
Co-ordinators | Sairam Institutions



Where Are We At - Artificial Intelligence - Phase Zero 'Capability Study'

Australia sits firmly within Stage 1 – *Aware*, and is currently lagging far behind adversaries and allies, like the United States, China, Korea, and Japan who are at Stage 3 – *Proactive*, in AI maturity. To reach the desired *Reactive – Proactive* target state, it is pivotal that Australian Defence work towards developing extensive foundational AI capabilities to securely and sustainably embedding AI proficiency within the organisation, allowing for the gradual unlocking of RAS and AI through iteration and controlled maturation.

The Study concluded that to become an effective AI enabled Australian Defence, maturity must be built across the foundational elements of Strategy, People, Process, Data and Technology. Based on competitor analysis, current state analysis and target state analysis, a practical roadmap for AI implementation and maturity across Australian Defence was developed and 16 core recommendations for building AI maturity across Australian Defence were presented to the Australian Defence Capability Committee in September 2021.



Why Defence Needs AI

Artificial Intelligence can deliver greater military effects with less resources. It is an essential technology for all warfighting domains – air & space, land, maritime, intelligence & cyber – and is at the heart of advances in situational awareness, decision support, weapons development, threat management and logistics.



For example why have a CPO searching through PMKey5 or Objective looking for information required to promote or post a member when an AI Automation or 'Bot' can do it much faster and easier thereby releasing the CPO/ET to do what he/she has been trained to do.

Where Are We At - Artificial Intelligence - Phase Zero 'Capabi'

To this end, sixteen key recommendations were put forward, and amalgamated into five distinct Lines of Effort (LoE) to inform future AI enablement. They are:

- ❖ **AI Operating Model** – Define accountabilities and establish a central coordination hub and build factor.
- ❖ **Workforce Preparedness** – Ensure the workforce is prepared to adopt and embrace AI through learning and transition initiatives.
- ❖ **Data and Governance** – Establish good data practice, data systems and approaches for prioritising use cases.
- ❖ **AI Use Cases** – Progress AI use cases to realise value through AI.



On Day 3, There were two pre talk sessions. Dr.Sailesh Iyer, Professor & Dean, Rai University, Ahmedabad delivered his speech on Emerging AI Research Trends and Applications and Mr. Louis Bardouil, Philips Medical Tech Sales Engineer, France North gave a wide exposure about the Artificial Intelligence and Automation and made the session more interactive and interesting for the participants.

Expert talk on Emerging AI research trends and applications



Dr. Sailesh Iyer
Professor & Dean,
Rai University, Ahmedabad

17 UN Sustainable Development Goals



1 NO POVERTY, 2 ZERO HUNGER, 3 GOOD HEALTH AND WELL-BEING, 4 QUALITY EDUCATION, 5 GENDER EQUALITY, 6 CLEAN WATER AND SANITATION, 7 AFFORDABLE AND CLEAN ENERGY, 8 DECENT WORK AND ECONOMIC GROWTH, 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE, 10 REDUCED INEQUALITIES, 11 SUSTAINABLE CITIES AND COMMUNITIES, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION, 14 LIFE BELOW WATER, 15 LIFE ON LAND, 16 PEACE, JUSTICE AND STRONG INSTITUTIONS, 17 PARTNERSHIPS FOR THE GOALS

CHART 1A Few students have internet at even the highest levels of education

Share of students with computer and internet facility at home by level of education

Level of Education	Computer in household (%)	Internet facility in household (%)
Below primary school	2.5	10.1
Primary	6.0	27.2
Upper primary school	1.2	17.0
Secondary	9.6	19.0
Higher secondary	15.0	25.2
Diploma/ certificate	30.0	35.4
Graduate and above	78.9	54.6

Note: Data for 3-16 year olds attending education in 2017-18

THE DIGITALE DIVIDE

Schoolchildren's Online and Offline Learning (SCHOOL) survey

Category	Urban %	Rural %
Study online regularly	24	8
Don't study at all nowadays	19	37
Are unable to read more than a few words	42	48
Their child's reading abilities have declined in lockdown	76	75
Schools should reopen	90	97

Only 31% of rural households surveyed had a smartphone. Only 12% rural children had their own smartphone. 57% children in urban sample and 60% in rural sample reported connectivity issues in online classes. Only 4% of rural SCST children were studying online regularly, compared to 15% among other rural children.

How Machine Learning is revolutionizing Education Sector?



- Adaptive Learning
- Predictive Analytics
- Increasing Efficiency
- Personalized Learning
- Learning Analytics
- Accurately grading Assignments

AI-based Applications	Supportive AI-related Techniques
01. Student and school assessment	Academic analytics, adaptive learning method, personalized learning approach
02. Paper/exam evaluation and grading	Image recognition, prediction system, computer vision
03. Personalized intelligent teaching	Data mining, Bayesian knowledge inference, learning analytics, intelligent teaching systems
04. Smart school	Face recognition, virtual labs, face recognition, AR, VR, hearing and sensing technologies
05. Online and mobile remote education	Edge computing, real-time analysis, virtual personalized assistants

Source: AI in Education: IEEE Research Publications

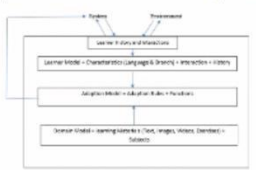
Research Challenges and Objectives:

- design an Intelligent Humanoid Robot with the self-learning capability for accepting id giving responses from people based on Deep Learning and Big Data knowledge base
- use Deep Learning approach, based on Recurrent Neural Network (RNN) encoder, Evolution Neural Network (ENN) encoder, with Bidirectional Attention Flow (BiDAF),
- track the performance of an individual student based on his previous grades, anticipation and performances.
- develop software that creates individual lesson plans for students based on their performance.
- improve the learning levels in maths, language and science subjects of the school users by using artificial intelligent robots.
- improve the judicious use of natural resources by improving the social education using chology.
- improve the economical background of the poor people by equipping them with basic ills needed.

Drawbacks – Existing Environment

- Lack of adaptation.
- Lack of adaptive response.
- Lack of adaptive learner models.

Adaptive Architecture Components



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    graph TD
      Input[Input] --> LearnerModel[Learner Model - Characteristic Language & Structure - Interaction - Context]
      Input --> Adaptation[Adaptation - Education - Skills - Feedback]
      LearnerModel --> Adaptation
      Adaptation --> Output[Output - Learning - Learning - Test, Assign, Notes, Feedback - Subjects]
  
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Expert Talk on

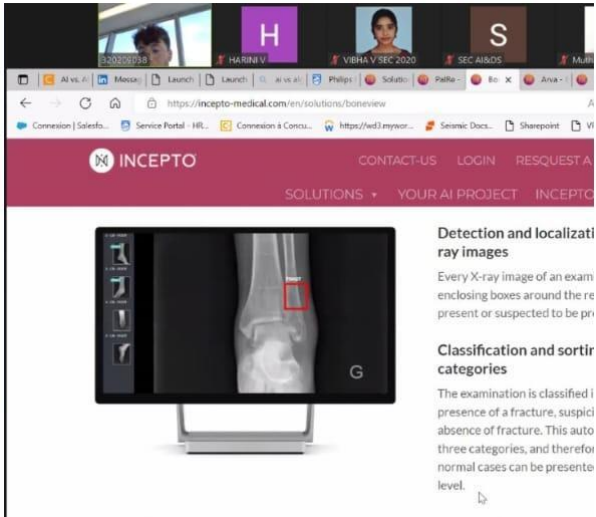
General Talk about the conference



Mr. Louis Bardoul
 Philips Medical Tech, Sales Engineering
 France North, East and IDF

ON 2nd November 2022
AT 6:00 PM

Co-ordinators: Mr. S. MuthamilSelvan, Mrs. P. Kalaiselvi, Dr. Swagata Sarkar (Head/AI-DS), Dr. K. Porkumaran (Principal), Shri. Sai Prakash Leo Muthu (Chairman & CEO), Sairam Institutions

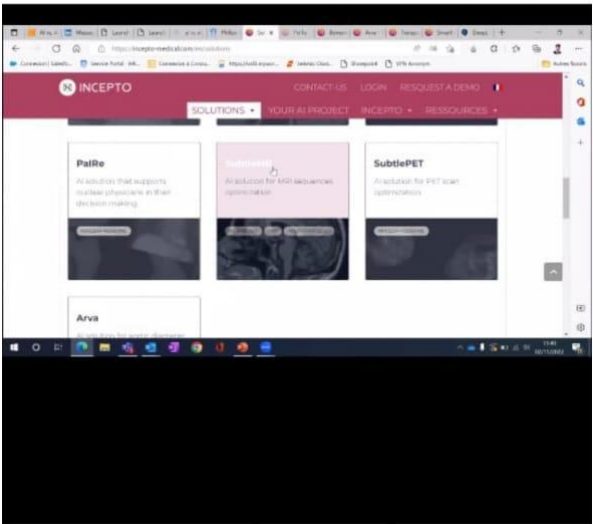
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Detection and localization of ray images

Every X-ray image of an exam enclosing boxes around the region present or suspected to be present.


Classification and sort into categories

The examination is classified into the presence of a fracture, suspicion of absence of fracture. This automatic classification into three categories, and therefore normal cases can be presented on a level.



INCEPTO SOLUTIONS YOUR AI PROJECT INCEPTO RESOURCES

- Palle**: An algorithm that supports radiologists in their decision-making.
- SubtlePET**: An algorithm for PET scan interpretation.
- Arva**: An algorithm for PET scan interpretation.



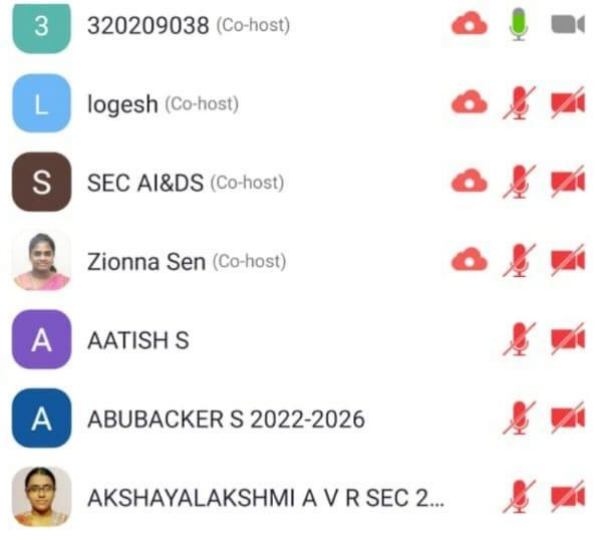
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SmartUrgenc es™

AI solution for the diagnosis of chest X-rays and traumatic bone injuries

Découvrir





- 3 320209038 (Co-host)
- L logesh (Co-host)
- S SEC AI&DS (Co-host)
- Zionna Sen (Co-host)
- A AATISH S
- A ABUBACKER S 2022-2026
- To Ty AKSHAYALAKSHMI A V R SEC 2...

Our big day was on November 3rd, at 10:00 am the conference was inaugurated and Dr. Neeraja Saxena, Advisor I, Head of Institutional Development Cell, AICTE graced the occasion as the chief guest for the ceremony. Inaugural address was delivered by our beloved principal Dr.K.Porkumaran and Special address by Mr. K. Naresh Raj, Chief Information officer.







It was followed by Project Expo, three tracks of paper presentation and Hands on Training in Augmented reality and virtual reality. Eminent members from Academic and Industry delivered the key note speech and also act as the Judges for the event.

They are:

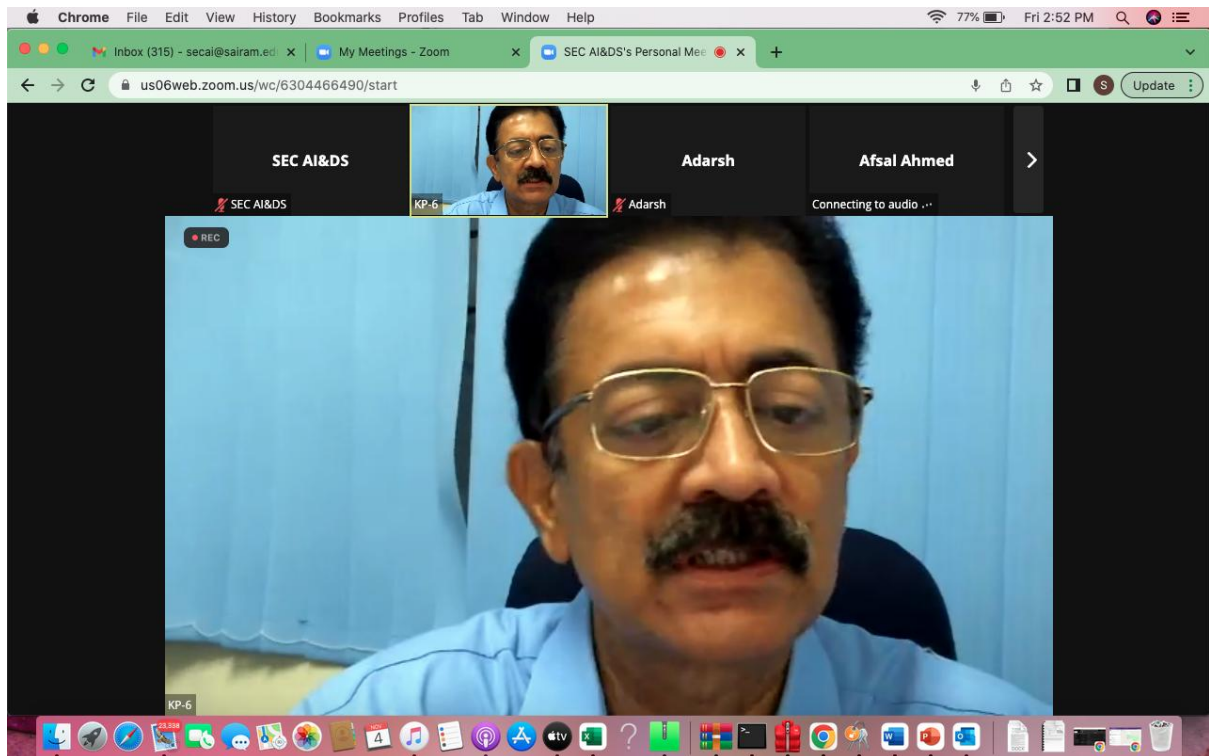
1. Dr.Kumaran, Assistant Professor, CSE, National Institute of Technology Puducherry, Karaikal
2. Dr.Gunasekaran, Profess
3. Dr. C.N.S Vinothkumar, Associate Professor, Department of Networking and Communications, School of Computing, SRM Institute of Science and Technology, Kattankulathur, Chennai
4. Mr.Ashvanth, Senior Associate, Technology Operations, MassMutual India, Vice Chair, IEEE Madras Young Professionals, Excom Member, IEEE Madras Section

On 4.11.2022 there was project expo, two tracks of paper presentation and Hands on training in Augmented reality and virtual reality. The key note speakers for day 2 of the conference are

1. Dr. E. Shanmugapriya, Assistant Professor, CSE, Anna University, Chennai
2. Mr.S.Padmanaban, Scientist, National Institute of Research in Tuberculosis (NIRT), ICMR, Chennai
3. Dr.A.Revathi, Assistant Professor, Dept of Computational Intelligence,SRM Institute of Science and Technology, Kattankulathur, Chennai

4. Dr.Sarooraj, Assistant Professor, Department of Information Technology, Rajalakshmi Engineering College.

On 4.11.2011 the Valedictory function of our conference is in place, Dr.R.Venkatesh, Chair MTS India section, Adjunct Professor, University of Massachusetts Dartmouth USA, Former Scientist NIOT is with us here as the Chief guest.



With the support of our beloved CEO Shri. Sai Prakash Leo Muthu and guidance of our Principal Dr.K.Porkumaran and support of our Head of the department, Dr.Swagata Sarkar we were able to organize the event successfully.

Screenshots



Project Expo

Paper Presentation



Hands on Training

