SAPTHAGIRI COLLEGE OF ENGINEERING
(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.)
ISO 9001 – 2015 & ISO14001 – 2015 Certified
14/5, Chikkasandra, Hesaraghatta main road, Bengaluru-560057
(Affiliated to Visvesvaraya Technological University, Belgaum & Approved by AICTE, New Delhi)
(Accredited by NAAC with "A" Grade)
(ISO 9001 : 2015 & 14001 : 2015 Certified Institution)

Monthly Event Report for the month of November

DEPARTMENT OF CIVIL ENGINEERING

*Type of Event/Activity	Induction Programme
Name/Title of the Event / Activity	Induction Programme on **"Artificial Intelligence in Civil Engineering"**
Date of Organization	11/11/2021 to 13/11/2021
Venue	SAPTHAGIRI COLLEGE OF ENGINEERING
Organized by	DEPARTMENT OF CIVIL ENGINEERING
Objectives of the event/activity	• Introduction to Artificial intelligence (AI) technique for civil engineering applications • Advance course on AI for civil engineering in design, construction, maintenance , and disaster management
Participants (Please attach list of participants, if it is organized/conducted in the dept.))	120

Event Description:

Artificial intelligence (AI) provides a wide range of current society applications, including predicting, classifying, and solving both social and scientific problems. As one of the oldest and most traditional engineering disciplines, civil engineering covers various aspects of the built environment, from design and construction to maintenance. Civil engineering offers ample practical scope for applications of AI. In turn, AI can improve human life quality and originate novel approaches to solving engineering problems. AI methods and techniques, including neural networks, evolutionary computation, fuzzy logic systems, and deep learning, have rapidly evolved over the past few years. AI algorithms have recently attracted close attention from researchers and have also been applied successfully to solve problems in civil engineering, i.e., intelligent and fully automatic urban and regional planning, and developing new technologies in civil engineering design, construction, maintenance, and disaster management.

Images:

Note:

(i) After every event, please take feedback (online/offline).

(ii)At the end map PO's (with 3/2/1):

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
3	2	-	-	3	2	2	-	-	2	-	3

***Type of Event / Activity:**

Workshop/seminar/conference/hackathon/hobby project/mini project/ Invited Talk/Guest Lecture/ Skill enhancement program/Cultural activity/competitions etc.,

Date of Submission: Signature of the HOD

NOTE : All the Events should be in one PDF File.

SRI SRINIVASA EDUCATIONAL & CHARITABLE TRUST (R)
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta main road, Bengaluru-560057
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A Report on Induction Programme on "Artificial Intelligence in Civil Engineering" (AICI'21) from 11th November 2021 to 13th November 2021.

Induction Programme on "Artificial Intelligence in Civil Engineering" was conducted from 11th November 2021 to 13th November 2021 in Seminar Hall of Sapthagiri College of Engineering. The Programme was attended by all the faculties and students. Programme was started around 10.30 a.m. Dr A M Ramesh, CEO, KSTA, Bengaluru was the Chief Guest for the day. Principal Dr. H Ramakrishna and Prof & Head Department of Civil Engineering Dr. Manjunath G R were accompanying the Chief Guest on the stage.

Ms. Kavya H P, Assistant Professor was the Master of Ceremony for the day.The Programme started with an invocation song seeking the blessings of almighty by Ms.Thanushree 5th semester, Civil Engineering. Dr. Manjunath G R delivered talk on Artificial Intelligence, its methods and techniques. To start the occasion on an auspicious notes Chief Guest. Dr A M Ramesh, Principal Dr. H Ramakrishna and Dr. Manjunath G R proceeded for lighting of the lamp.

Dr. H Ramakrishna, Principal of SCE has delivered a few words on AI, how the course will provide exposure to current trends in AI for civil engineering and help the participants to actively take up new thrust emerging areas for academic research assignments.

Session: 11.11.2021 Time: 11.00 AM -12.30 PM

The Session was started by Dr. Rajesh, Tata Consultancy Services, Bengaluru, delivered a talk on **Computational trends and its applications in Civil engineering** and explained about the applications of two major Soft Computing techniques viz., Artificial Neural Networks and Genetic Algorithms in the field of Civil Engineering, which to some extent has replaced the time consuming conventional techniques of computing with intelligent and time saving computing tools.

Session: 11.11.2021 Time: 1.15 PM -2.45 PM

The Session was started by Dr. Chandregowda C discussing on **Artificial Intelligence in water resource applications** are being widely used in various fields of science and engineering. Water resources are one of the most important resources for human life and development. The availability of surface water resources depends, to a large extent, on the water quality.

A key component in the efficient use of available water resources is the proper management of the existing water resources using advanced technologies. Channel networks are a special type of river pattern which is generally located on alluvial plains, facilitating the exchange of the water within the channel networks with that within adjacent rivers. Since channel networks are usually composed of a number of interconnected branches and the water system is generally very complex, they bring great difficulties for water resources management

Session: 12.11.2021 Time: 09.00 AM -10.30 AM

The Session was started by Dr. Rajeshwari R, NCET, Bengaluru, delivered a talk on **Applications of AI techniques in concrete and structures** and explained about the applications in civil engineering like estimating the percentage of soil moisture content and further classifications. In the structural engineering field machine learning can be applied to detect damages using sensory or image data, identifying its location and extent etc.

Session: 12.11.2021 Time: 10.45 AM -12.30 PM

Dr.Geetha Kintoji gave a seminar on "introduction and Application of AI tools in Marine structure" is as follows, In the last few years, interest has grown in exploring AI approaches to design problems, both because of the enormous potential impact on productivity of improved design tools and because of the interesting basic AI issues that these problems raise. In particular, a number of ship designers and AI researchers recently became interested in applying AI to the hydrodynamic design of ship hulls. A typical problem here is to design the M shape of a ship's hull in response to desired hydrodynamic properties such as drag and stability, taking into consideration a variety of design constraints, such as total hull volume. This problem differs in a number of ways from most previous work in AI and design. For instance, unlike circuit or program design, hull design involves designing a shape rather than a structure of discrete primitives.

Session: 12.11.2021 Time: 1.15 PM -2.45 PM

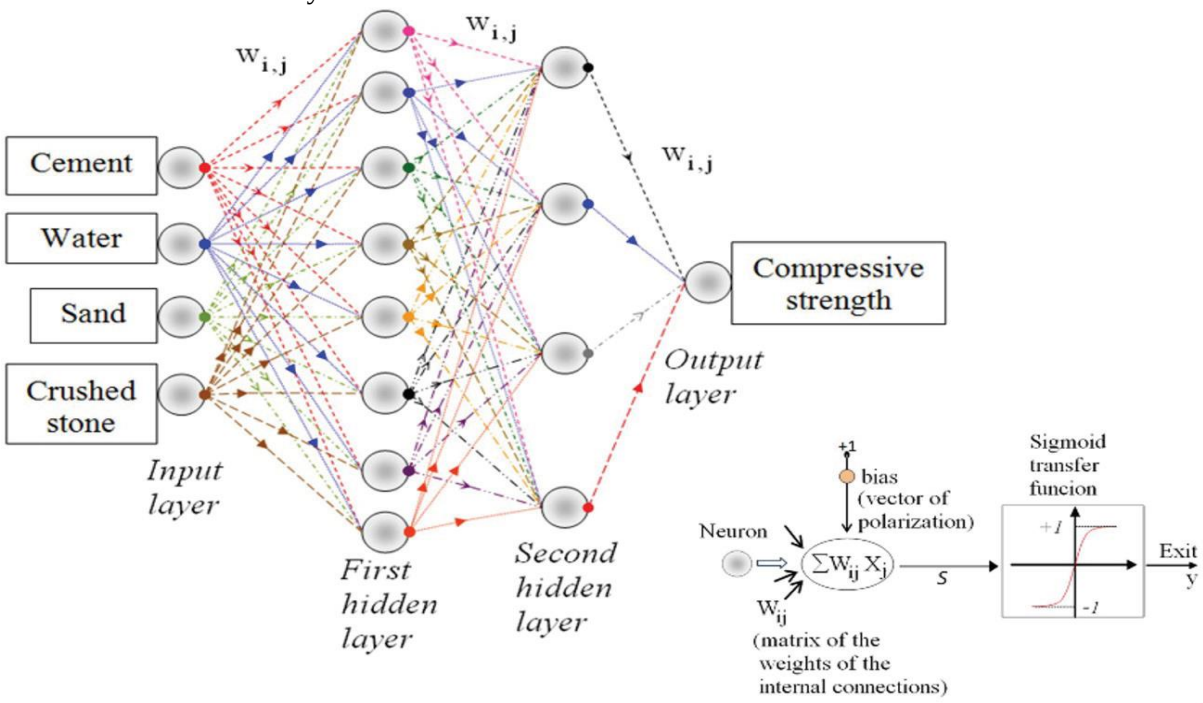
The Session was started by Dr. Kumar Raju B C delivered lecture on "Deep learning in Remote Sensing". In this session he discussed about following-

- History of remote sensing
- Stages of remote sensing
- importance of remote sensing in capturing the data
- Applications of remote sensing in field of civil engineering.

Session: 13.11.2021 Time: 9.00AM -10.30 AM

The Session was started by Dr Harish N discussing on artificial neural networks is being widely used in various fields of science and engineering. Neural networks have the ability to learn through experience and existing examples, and then generate solutions and answers to new problems, involving even the effects of non-linearity in their variables.

It is to use a feed-forward neural network with back-propagation technique, to predict the values of compressive strength and modulus of elasticity, at 28 days, of different concrete mixtures prepared and tested in the laboratory.



Layout of the neural network used, with four layers, and the representation of the function of a neuron. Given by Dr Harish N

Session: 13.11.2021 Time: 10.45 AM -12.30 PM

The Session was started by Dr Bharathi Ganesh, HOD, Dept. of Civil Engineering, NITTE discussing on trends of technology for modernization of construction industry. She presented talk on overview of the current trends & practices in the construction industry, identifying key factors impacting its growth towards modernization, as viewed by respondents, with the help of questionnaire-based research. Taking lead from existing databases, while remaining in realm of modern construction technologies, the paper further looks into the prospects of its modernization.

HOD