About the Institute :

Sir C R Reddy College of Engineering, established in 1989, is the first engineering college in Andhra Pradesh recognized by the All India Council for Technical Education (AICTE). It is affiliated with JNTUK and has been a premier institution for quality engineering education in the state for two and a half decades. The college prioritizes ethical values, high standards, and value-based education, with a focus on honesty, trust, and long-lasting relationships with society.

About the Department of IT:

The Department of Information Technology offers a strong undergraduate program, admitting 180 students annually, up from 60 in 2000. With 21 qualified staff, including doctoral and M. Tech degree holders, it focuses on research, teaching, and professional development. The goal is to prepare students for top-tier organizations with industry-relevant skills. They have advanced laboratories, like the AWS Lab, for Android and cloud computing training, and networked computers for various services.

About ATAL Academy:

AICTE Training and Learning (ATAL) Academy is established with the vision “To empower faculty to achieve goals of Higher Education such as access, equity and quality”. AICTE is committed for development of quality technical education in the country by initiating various schemes launched by Govt. of India, Ministry of Human Resource Development. Council understands that there is a need of the day to train the young generation in skill sector and having faculty & technicians to be trained in their respective disciplines. Training is required for increasing the knowledge and skills of faculties and students to make them more employable to acquire global competencies.

Eligibility Criteria and Registration:

The faculty members of AICTE approved institutions, research scholars, PG students and participants from government or industries can attend.

Register Link:

https://atalacademy.aicte-india.org/login

Registration Fee: Nil

Chief Patrons:

Dr Alluri Indra Kumar,President
Sir C R Reddy Educational Institutions

Dr M B S V Prasad, Secretary
Sir C R Reddy Educational Institutions

Sri Jasti Mallikhaarjunudu
Correspondent, Sir C R Reddy College of Engineering

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AICTE Training And Learning (ATAL) Academy Sponsored

One Week Faculty Development Program (FDP) on

Convolutional Neural Networks (CNN) with Generative Adversarial Networks (GANs)

From: 11th December, 2023 to 16th December, 2023

Organized By:

Department of Information Technology
Sir C R Reddy College of Engineering, Eluru

Aim:

The aim of this FDP is to train faculty members in the Convolutional Neural Networks with Generative Adversarial Networks. Subsequently, the training will help the teachers to transfer the knowledge to students in their respective institutions. The program will act as a bridge for knowledge transfer between faculty and experts in the field of CNN and allied fields to fulfill the ongoing demands in research and academic activities.

Objective:

The main objectives of this FDP are

- Understanding CNNs and GANs Fundamentals
- Exploring Advanced Architectures in CNN and GAN
- Applying CNNs and GANs for Image Manipulation
- Examine the Adversarial Attacks and Defenses Mechanisms
- Establish Collaboration and Community Building
- Enabling Lifelong Learning

By achieving these objectives, the FDP aims to empower participants with a comprehensive understanding of CNNs and GANs, enabling them to leverage the technologies effectively in real-world applications while adhering to ethical considerations and responsible AI practices.

Learning Outcomes :

- Understand the fundamental concepts of CNN and GAN Models for real-world problems
- Implement the CNN Models for a given scenario by using the advanced tools
- Use advanced tools to implement the GAN architectures
- Identify the attack vector for CNN and GAN application models
- Generate the image and video models for utilizing CNN and GAN architecture
- Explore the Research Methodologies in detail

Detailed FDP content:

This curriculum covers Convolutional Neural Networks (CNNs) and Generative Adversarial Networks (GANs) for computer vision:

1. **Introduction to CNNs and GANs:** Overview and Applications
2. **CNN Architectures:** Various designs for image classification
3. **GAN Fundamentals:** Mechanics and image generation
4. **Image-to-Image Translation:** Using CNNs and GANs
5. **Data Augmentation and Style Enhancement:** GAN applications
6. **Adversarial Attacks and Defenses:** Protecting CNNs
7. **Progressive GANs:** High-resolution image synthesis
8. **GANs for Video:** Applications in video analysis

Certification:

Continuous Comprehensive Assessment of Candidates shall be carried out and certificate would be issued up on achieving at least 70% to receive over all in following aspects in the weightage mentioned below

- Attendance – minimum 80% attendance - (individual)- weightage 10%
- Participation-(total number of participants)- 5%
- One assessment, - combination of MCQs/short answer type/reasoning based, etc. - (Individual) - weightage15 %
- 3-4 Page Article Summary/per Team - (Team & Individual)- - weightage20%.
- Teaching Practice - (Individual)-weightage10 %
- Project/ Live industry problem solving - (Team & Individual)-weightage15 %
- Report/outcome of Industrial visit- (Team) at the last session -weightage10%
- Reflective journal - (Individual) - at the last session - weightage15%

Resources Persons:

1. Dr. M Naresh Babu - SMIEEE Associate Professor,Department of Computer Science and Engineering,IITDM Kurnool. Machine Learning, Cryptography, Bioinformatics.
2. Dr. Subrahmanyam Gorthi - Assistant Professor ,Department of Electric Engineering IIT-Tirupathi
3. Dr. S Raj Kumar,Associate Professor and Dept. of Computer Science & Engineering ,VIT,Vellore
4. Dr.Kodukula Subrahmanyam,Professor & Principal (H&S) Department of Computer Science and Applications, KL University, CNNs, Deep Learning
5. Dr. Srilatha Chebrolu, Assistant Professor Dept. of Computer Science & Engineering, NIT Andhra Pradesh Machine Learning,Soft Computing, Artificial Intelligence
6. Dr. Vishnu Srinivasa Murthy Associate Professor , Manipal academy of higher education Bangalore

These professionals are experts in various aspects of machine learning, and deep learning, contributing to research and academia in their respective fields.

Organizing committee:

Faculty, Department of Information Technology