School of **Engineering**

SR UNIVERSITY

Three Days Workshop On

Role of Optimization in Machine Learning

From
18.10.2023
to
20.10.2023

Organized by
Centre For Artificial Intelligence & Deep Learning

Center for **ai deep** LEARNING

In Association with
Deparment of EEE BVC Institute of Technology and Science

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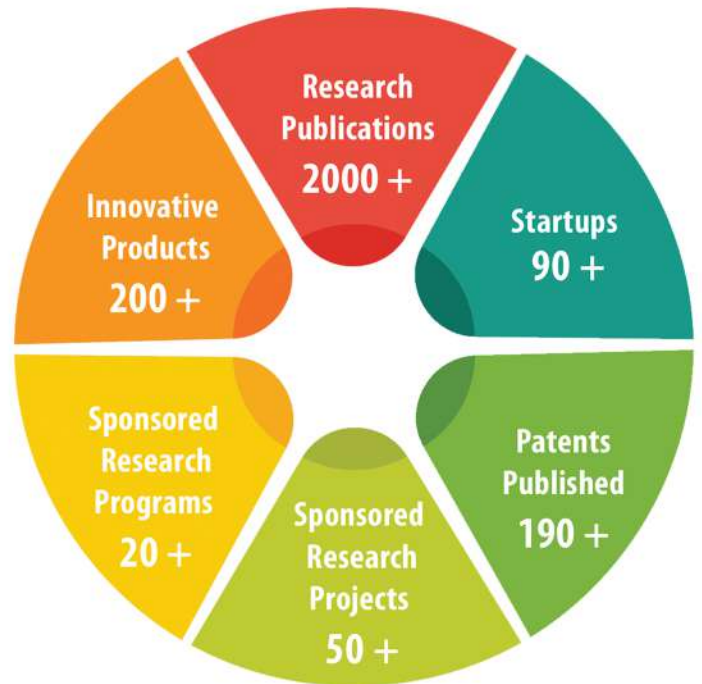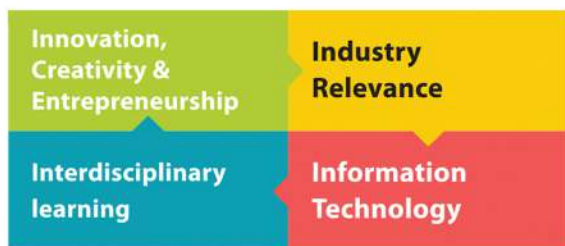
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outstanding contribution from faculty and students include patents, research publications, sponsored projects and research programs

Vision

To accelerate the pace of transformation and advancement of the regional innovation ecosystem through academic excellence, industry relevance, and social responsibility.

Innovative Experiences for Next Generation Change Makers

SR University has been built on the strong foundation set by SR Engineering College over the past 22 years. The college has provided innovative entrepreneurial learning ecosystem in Telangana, facilitating students to think out of the box and come up with creative solutions to modern day challenges. The core values that are common to each program offered at our University are as follows:

Innovation, Creativity & Entrepreneurship	**Industry Relevance**
Interdisciplinary learning	**Information Technology**

Research Publications 2000 +

Startups 90 +

Innovative Products 200 +

Patents Published 190 +

Sponsored Research Programs 20 +

Sponsored Research Projects 50 +

SR Educational Academy
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5 Decades of Educational Leadership

Governs 185 Educational Institutions in South India with 1 Lac students and 5 Lac Alumni.

Founded in 1974, S R Educational Academy is close to a half-a-century of experience in the field of Education

The Academy established **Sri Rajeshwara Educational Society** *in 1991.*

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- ● Innovation, Creativity & Entrepreneurship
- ● Research & Development

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- • Center for AI & Deep Learning
- • Center for Embedded & IoT Systems
- • Center for Construction Materials and Methods
- • Center for Emerging Energy Technologies
- • Center for Creative Cognition
- • Nest for Entrepreneurship in Science & Technology
- • Collaboratory for Social Innovation
- • Center for Design
- • R& D Cell
- • Industry- Institute Partnership Cell

About WORKSHOP:

This workshop helps the faculty/research scholars/students to understand how optimization algorithms help machine learning models to learn based on available data and helps to understand the implementation of these optimization algorithms using Python/MATLAB program for real time problems from scratch. Participants who do not have basic knowledge of machine learning and Python/MATAB can also understand, learn, and implement these algorithms easily. In this program, resource person(s) will discuss the most popular variants of gradient descent optimization algorithms that are used to train machine learning models. In this workshop various real time projects like estimation of bicarbonates in well water based on water pH value, estimation of beach slope based on median diameter (mm) of granules of sand and active power load forecasting on a 33/11kV substation etc. will be implemented.

WORKSHOP Objectives:

- Understand the significance of optimization in machine learning.
- Implement variants of gradient descent optimization algorithms using Python/MATLAB.
- Apply optimization algorithms to solve real time problems via. Machine learning
- Deploy machine learning model using python and MATLAB

Resource persons

Dr. Venkataramana Veeramsetty,
Associate Professor,
Email: v.venkataramana@sru.edu.in
Contact No.: **8500962470**

Requirements for the WORKSHOP at host institution:

- Computer lab to conduct a hands-on session for all attendees.
- Internet facility to each computer
- MATLAB should be installed
- A big whiteboard to explain the concepts in detail
- Participants should come on time with notebook, calculator, laptop (Optional: They can use computers provided in lab)

Registration Fee Particulars:

- ▲ Faculty – **Rs. 1000/-**
- ▲ Research Scholars – **Rs. 750/-**
- ▲ UG/PG Students – **Rs. 500/-**
- ▲ Industry Participants – **Rs. 1250/-**

Participants need to pay the registration fees online using the following details

- ▲ **Bank Account Details:**

  Account Name: **SR University**
  Bank Name: **Canara Bank**
  Account No.: **120001989889**
  IFSC CODE: **CNRB0002450**
  Branch:**Balasamudram,Hanamkonda**

Important Dates

- ▲ **18.10.2023 (10AM-1PM)** - Introduction to optimization - Linear optimization - Nonlinear optimization - Gradient Descent Algorithm (GDA) — Theory

- ▲ **18.10.2023 (2PM-4PM)** - Implementation of linear optimization using Python/MATLAB, Implementation of GDA using Python/MATLAB — Lab

- ▲ **19.10.2023 (10AM-1PM)** - Introduction to Machine Learning - Simple Linear Regression Model — Learning process with Stochastic Gradient Descent Optimization — Theory

- ▲ **19.10.2023 (2PM-4PM)** - Estimation of bicarbonates of well water based on pH value — Lab

- ▲ **20.10.2023 (10AM-1PM)** - Adaptive learning rate gradient descent algorithm - AdaGrad — Theory

- ▲ **20.10.2023 (2PM-4PM)** - Estimation of active power load on 33/11KV substation — Lab

If your institute/department have interest to host this workshop, please fill the online Google form by clicking on the following link: https://forms.gle/UfDCjWpCo1h3jBGw9

(or) Scan QR Code:

For any queries regarding this program, please feel free to contact.

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Contact No.: **8500962470**