

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Sri Shridevi Charitable Trust (R.)  
**SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY**

(Recognised by Govt. of Karnataka, Affiliated to VTU, Belagavi and Approved by AICTE, New Delhi)

Sira Road, Tumakuru - 572106, Karnataka.

Phone: 0816-2212629 | Fax: 0816-2212628 | Email: info@shrideviengineering.org | Web: http://www.shrideviengineering.org



Department of Computer Science and Engineering  
Skill and Career Development Cell  
ShriTEK Innovations



Hands-on Skill Training on



# Machine Learning Using Python



Resource Persons

**Er. M. Rajesh Kannan M.E**  
Aptitude, Technical and Soft skills Trainer



**Jwalitha K**  
Technical Trainer



6th sem 'A' & 'B' Sec

24<sup>th</sup> June to 29<sup>th</sup> June

Best Wishes from: Management, Principal, HOD & Staff

Academic Year	2023-24	Targeted Audience from	CSE 6 <sup>th</sup> 'A & B'
Name of the Event	<i>Workshop on Machine Learning using Python</i>	Number of Participants	95
Date of Conduction	24 <sup>th</sup> to 29 <sup>th</sup> June 2024	Time	9.00am to 5.00pm
Venue	Skill lab & Cloud lab	Resource	Er. M Rajesh Kannan M E Jwalitha K

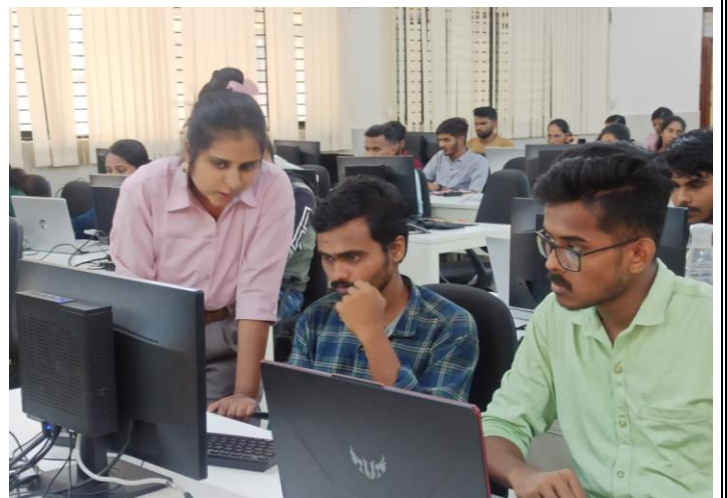
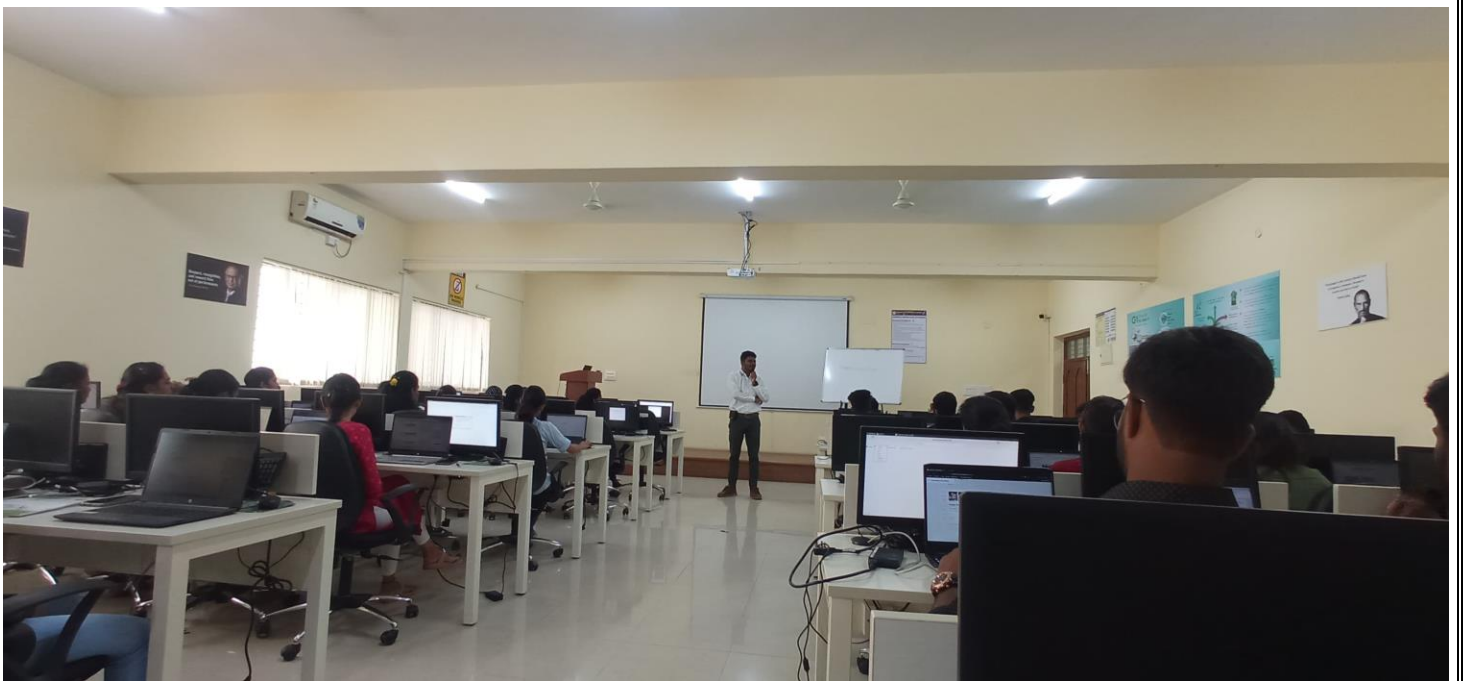
## A Report on Workshop on: Machine Learning using Python

<b>Workshop Topic</b>	<b><i>Workshop on Machine Learning using Python</i></b>
<b>Date</b>	<b>24th June - 29th June</b>
<b>Time</b>	9.00am to 5.00pm
<b>Venue</b>	<b>Skill Lab &amp; Cloud Lab</b>
<b>Resource Person</b>	<b>Jwalitha K                      Er. M Rajesh Kannan M E</b> <b>Technical Trainer            Aptitude &amp; Soft Skills Trainer</b>
<b>Inaugurated by</b>	Dr. Narendra Viswanath Principal, Shridevi Institute of Engineering and Technology, Tumkur
<b>Organizing Chairman</b>	Dr. Basavesha D Head & Professor, Dept of CSE, SIET, Tumkur
<b>Mentors</b>	Dr. Udayakumar N.L, Prof. Shanmukaswamy, Dr. Dinesha H A, Navyashree S Dr. Rajeswari R, Rashmi N, Pranathi P, Prathibha T S
<b>Target Audience</b>	6th Sem CSE students
<b>Objective</b>	The primary objectives of the workshop were: - To introduce students to the real-world demands and expectations in the field of Machine Learning - To provide hands-on experience with essential Python modules used in Machine Learning - To help students understand their learning paths and career opportunities in Machine Learning - To mainstream essential information and best practices in Machine Learning using Python.
<b>Details of the Activity</b>	The workshop on Machine Learning using Python was organized and conducted by the CSE dept. This Workshop was conducted for 6 days from Monday to Saturday. The students from the CSE dept showed a huge interest in this workshop. All the students gathered in the Skill lab and Cloud lab by 9:00 am to 5.00 pm on every day of workshop. On the first day brief idea was given to the students about the fundamentals of Machine Learning using Python was taught to the students and various doubts were solved. The next day onwards this Workshop Content:- followed The workshop covered various topics and modules essential for building skills. 1. Introduction to Machine Learning and AI ● Overview of AI and ML: Definitions, history, evolution, and applications. ● Types of Machine Learning: Supervised, Unsupervised, and Reinforcement Learning. ● Hands-on: Introduction to Python and ML libraries (NumPy, Pandas, and Matplotlib). Basic operations and setup.

	<p>2. Supervised Learning</p> <ul style="list-style-type: none"> <li>● Regression Analysis: Linear and Polynomial Regression.</li> <li>● Classification Techniques: Logistic Regression and k-Nearest Neighbors (k-NN).</li> <li>● Hands-on: Implementing and evaluating regression and classification models using scikit-learn.</li> </ul> <p>3. Decision Trees and Random Forests</p> <ul style="list-style-type: none"> <li>● Decision Trees: Concept, intuition, working mechanism, advantages, and disadvantages.</li> <li>● Random Forests: Concept, intuition, working mechanism, advantages, and disadvantages.</li> <li>● Hands-on: Building, evaluating, and tuning Decision Trees and Random Forests using scikit-learn.</li> </ul> <p>4. Unsupervised Learning</p> <ul style="list-style-type: none"> <li>● Clustering Techniques: k-Means and Hierarchical Clustering.</li> <li>● Dimensionality Reduction: Principal Component Analysis (PCA) and t-Distributed Stochastic Neighbor Embedding (t-SNE).</li> <li>● Hands-on: Implementing clustering and dimensionality reduction techniques on real-world datasets.</li> </ul> <p>5. Neural Networks and Deep Learning</p> <ul style="list-style-type: none"> <li>● Introduction to Neural Networks: Perceptron, Multilayer Perceptron, activation functions, training neural networks (Forward and Back propagation).</li> <li>● Deep Learning Architectures: Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), and Transfer Learning.</li> <li>● Hands-on: Building and training simple neural networks and CNNs using Tensor Flow/Keras.</li> </ul> <p>6. Natural Language Processing (NLP) and Reinforcement Learning</p> <ul style="list-style-type: none"> <li>● Natural Language Processing (NLP): Text preprocessing (Tokenization, Lemmatization), Sentiment Analysis, Named Entity Recognition, Word Embeddings (Word2Vec, GloVe), and Transformers (BERT).</li> <li>● Hands-on: NLP with Python (NLTK, spaCy, Hugging Face Transformers) and building a simple reinforcement learning agent using OpenAI Gym.</li> </ul>
<p style="text-align: center;"><b>Outcome</b></p>	<p>Machine Learning using Python is the fundamental process for starting with any of the projects. Also it is beneficial for the students as now they will be able to make their own Project successfully.</p> <p>Project exhibition on Machine Learning using Python based on this workshop was also conducted by CSE dept</p>

**Dr. Basavesha D**  
**HOD, CSE**

## Glimpse of Workshop Conduction:





**GROUP PHOTO OF VI – A SEC**



**GROUP PHOTO OF VI – B SEC**