



**RajaRajeswari College of Engineering**  
(An Autonomous Institute, Affiliated Visvesvaraya Technological University, Belag  
Approved by AICTE, UGC &GoK, Accredited by ISO 9001-2015 Certified Institutio  
**Sponsored by: MOOGAMBIGAI CHARITABLE AND EDUCATIONAL TRUST**  
**Dept. of Electronics and Communication Engineering &**



## 5 days student Development programme

**"AI and Machine Learning for Beginners: From Theory to Implementation"**

**From 18th Dec 2023 to 22nd Dec 2023**

**Date : 18th Dec 2023 to 22nd Dec 2023 (From 8.30 am to 4.00Pm)**

**Venue : Satyendra Bose Seminar Hall, ECE Dept.**

**Target Participants: 3<sup>rd</sup> semester students [ECE]**

**Number of Students Participated: 134 students**

**Number of Faculty members involved: 3 MEMBERS**

**Organizing Committee:**

**Dr.R.Balakrishna, Principal**

**Dr. Rangaiah, HOD/ECE, RRCE**

**Name of the Recourse Persons::**

**Mr.Shivakumar P M      SAP LABS**

**Mr.Venkata Reddy      SAP LABS**

**Mr.Umesha S      Wipro Technologies**

**Name of the Faculty Co-ordinators:**

**Dr.Deepika J , Dept of ECE, RRCE**

**Prof.Haritha K Sivaraman, Dept of ECE, RRCE**

**Prof.Suresh M, Dept of ECE, RRCE**



**Schedule of the Event:**

**Day 1: Introduction to AI and Machine Learning**

**RESOURCE PERSON: Mr. Shivakumar P M**  
**SAP LABS**

**Date:** 18th December 2023

**Objectives:** Familiarize students with AI and ML fundamentals, terminology, and real-world applications.

Time	Topic	Activities
09:00AM - 10:30 AM	<b>Inaugural Session</b>	Program Introduction, Keynote, and Overview
10:30AM - 11:30AM	<b>Introduction to AI &amp; ML</b>	Lecture on AI/ML basics, history, and real-life examples
11:30 AM - 12:30 PM	<b>Types of Machine Learning</b>	Overview of Supervised, Unsupervised, and Reinforcement
12:30 PM - 01:30 PM	<b>Lunch Break</b>	
01:30PM - 03:00 PM	<b>Python Essentials for ML</b>	Introduction to Python, installing libraries, Jupyter
03:00PM - 04:00 PM	<b>Hands-On Lab &amp; Q&amp;A and Wrap-Up</b>	Simple Python exercises for ML basics/ Recap and Q&A session

**Day 2: Data and Preprocessing in Machine Learning**

**RESOURCE PERSON: Mr. Venkata Reddy**  
**SAP LABS**

**Date:** 19th December 2023

**Objectives:** Introduction to data handling, data cleaning, and preparing data for ML.

Time	Topic	Activities
09:00AM - 11:30 AM	<b>Importance of Data in ML</b>	Understanding datasets, sources of data
11:30 AM - 12:30 PM	<b>Data Preprocessing Techniques</b>	Lecture on cleaning, normalization, and encoding
12:30 PM - 01:30 PM	<b>Lunch Break</b>	
01:30PM - 03:00 PM	<b>Hands-On Lab: Data Preprocessing</b>	
03:00PM - 04:00 PM	<b>Exploratory Data Analysis (EDA)</b>	Visualization and feature analysis with Matplotlib/Seaborn



**Day 3: Core Machine Learning Algorithms**

**RESOURCE PERSON: Mr.Venkata Reddy**

**SAP LABS**

**Date:** 20th December 2023

**Objectives:** Understanding key ML algorithms and their use cases.

Time	Topic	Activities
09:00AM - 11:00AM	<b>Overview of ML Algorithms</b>	Classification, Regression, Clustering
11:00AM - 12:30PM	<b>Supervised Learning: Regression Models</b>	Linear and Logistic Regression
12:30PM - 01:30PM	<b>Lunch Break</b>	
01:30PM - 03:00 PM	<b>Unsupervised Learning: Clustering</b>	K-means, hierarchical clustering
03:00 PM- 04:00PM	<b>Hands-On Lab: Implementing Algorithms</b>	Build models with Scikit-Learn

**Day 4: Model Evaluation and Tuning**

**RESOURCE PERSON: Mr.Shivakumar P M**

**SAP LABS**

**Date:** 21st December 2023

**Objectives:** Teach students how to evaluate models and improve performance.

Time	Topic	Activities
09:00AM - 11:00AM	<b>Introduction to Model Evaluation</b>	Accuracy, precision, recall, F1 score
11:00AM - 12:30PM	<b>Over fitting and Under fitting</b>	Understanding model complexity and trade-offs
12:30PM - 01:30PM	<b>Lunch Break</b>	
01:30PM - 03:00 PM	<b>Hyper parameter Tuning</b>	Grid search, cross-validation, and regularization
03:00 PM- 04:00PM	<b>Hands-On Lab: Model Tuning</b>	Tuning models for accuracy with Scikit-Learn



**Day 5: Capstone Project and Real-World Applications**

**RESOURCE PERSON: Mr.Umesha S**

**Wipro Technologies**

**Date:** 22nd December 2023

**Objectives:** Apply concepts learned to a capstone project and discuss career opportunities.

Time	Topic	Activities
09:00AM - 11:00AM	<b>Capstone Project Introduction</b>	Overview and instructions for the project
11:00AM - 12:30PM	<b>Hands-On Lab: Project Implementation</b>	Build a small ML model with guidance
12:30PM - 01:30PM	<b>Lunch Break</b>	
01:30PM - 03:00 PM	<b>Project Finalization and Presentation</b>	Complete the project and present results
03:00 PM- 04:00PM	<b>AI/ML Career Pathways</b>	Discussion on AI/ML roles, skills, and resources
04:00 PM - 04:30 PM	<b>Closing Ceremony and Feedback</b>	Certificate distribution and feedback collection

**Outcome of the Program:**

- **Increased Knowledge of AI/ML Fundamentals:** Students will gain a strong foundation in AI and ML concepts, terminology, and real-world applications, aligning with the initial objective to familiarize them with the basics.
- **Hands-On Experience with Essential Tools and Techniques:** Students will be introduced to essential Python programming skills for ML, data preprocessing techniques, and tools like Jupyter, Matplotlib, and Seaborn for data visualization and exploration. They will perform hands-on labs each day, applying theoretical knowledge to practical exercises.
- **Understanding of Core ML Algorithms:** The students will learn the fundamentals of different machine learning algorithms, including supervised and unsupervised learning,



through both theoretical lectures and hands-on activities with Scikit-Learn, which will help them understand when and how to apply each type.

- **Skills in Model Evaluation and Optimization:** By learning model evaluation metrics (accuracy, precision, recall, F1 score) and techniques like hyperparameter tuning and regularization, students will develop skills to improve model performance.
- **Application of Concepts through a Capstone Project:** The capstone project will allow students to implement a small ML model, fostering problem-solving and project management skills. This experience will solidify their understanding and give them a project to showcase.
- **Career Insights in AI/ML:** The final day includes a session on AI/ML career pathways, offering students guidance on the roles, skills, and resources relevant to a career in this field, which aligns with their potential professional development goals.



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**Poster for 5 days student Development programme " AI and Machine Learning for  
Beginners: From Theory to Implementation"**



## **RAJARAJESWARI COLLEGE OF ENGINEERING**

Affiliated to VTU, Approved by AICTE, UGC & GoK

**Department of Electronics and Communication Engineering**

### **5 DAYS STUDENT DEVELOPMENT PROGRAMME "AI AND MACHINE LEARNING FOR BEGINNERS: FROM THEORY TO IMPLEMENTATION"**

**Key Note Speakers:**

**Mr. Shivakumar P M**  
SAP LABS

**Mr.Umesha H.S**  
Wipro Technologies

**Mr.Venkata Reddy**  
SAP LABS



**FROM 18TH DEC 2023 TO 22ND DEC 2023** **Venue:**  
**9.00AM - 04.00 PM**

**Dr. A.P.J. Abdul Kalam Conference Hall  
RRCE Campus**

**Faculty Co-Ordinators :**

**Dr.Deepika J**  
Dept.of ECE, RRCE

**Prof.Haritha K Sivaraman**  
Dept.of ECE, RRCE

**Prof.Suresh.M**  
Dept.of ECE, RRCE

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**Dept. of Electronics and Communication Engineering &**

**5 days student Development programme " AI and Machine Learning for Beginners: From Theory to Implementation" – Event Photographs**



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