



DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Report on “Emerging Technologies in Computing, Communication and Intelligent Systems”

“Introduction to Machine Learning: Concepts and Applications”

Introduction

I, **Dr. A. Arivarasi** (SCET23EC04), Assistant professor from the **Department of Electronics and Communication Engineering** have completed an **AICTE–QIP PG Programme on “Quantum Computing and Data Science”**. As a follow-up activity to my participation in QIP course that was organized by Atal Bihari Vajpayee - Indian Institute of Information Technology and Management (ABV-IIITM), Gwalior, from February 2026 to June 2026, I presented a Knowledge Sharing Session on **“Introduction to Machine Learning: Concepts and Applications”** for students and faculty members on **27.07.2026**. The objective of the session was to share the knowledge and practical insights gained from the QIP course and create awareness about the fundamentals, methodologies, and applications of Machine Learning in engineering, research, and real-world problem solving.

Topics and Knowledge Shared

The session introduced the participants to the basic concepts of **Machine Learning (ML)** and explained how machines can learn patterns from data and use the learned patterns to make predictions or decisions. The major types of Machine Learning, namely **Supervised Learning, Unsupervised Learning, and Reinforcement Learning**, were introduced with simple examples. The concept of **Supervised Learning** was explained using classification and regression problems. Participants were introduced to commonly used algorithms such as **Linear Regression, Logistic Regression, Decision Trees, Support Vector Machines, and Ensemble Learning techniques**. The session also discussed **Unsupervised Learning**, particularly clustering, where the system identifies hidden patterns or groups within unlabeled data.

An important insight shared during the session was the **Machine Learning workflow**, which includes problem definition, data collection, data preprocessing, feature selection, model training, testing, evaluation, and deployment. The importance of selecting suitable features and appropriate algorithms according to the problem was emphasized. The participants were also introduced to important concepts such as **training and testing datasets, overfitting, underfitting, model validation, hyperparameter tuning, and performance evaluation**. The importance of using suitable evaluation metrics to determine whether a model performs reliably was highlighted.

Various real-world applications of Machine Learning were discussed, including **healthcare and disease prediction, smart agriculture, recommendation systems, cybersecurity, financial analytics, predictive maintenance, industrial automation, image and speech recognition, IoT, and smart cities**. These examples helped the



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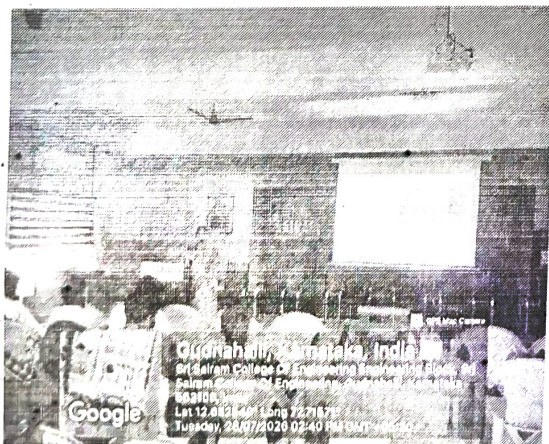
participants understand that Machine Learning is not restricted to computer science but can be effectively applied in **Electronics and Communication Engineering**, embedded systems, sensor-based applications, healthcare, agriculture, and other interdisciplinary domains.

Benefits to the Participants

The session helped students understand the fundamental concepts of Machine Learning and its relevance to current engineering applications. They gained awareness of how ML can be used to develop **intelligent and predictive systems** from real-world data. The knowledge will be useful for students in developing **mini-projects, final-year projects, internships, research work, and innovative engineering solutions**. It also provides a foundation for learning advanced areas such as **Deep Learning, Natural Language Processing, Computer Vision, and Artificial Intelligence**. The session encouraged students to think beyond conventional programming and explore systems that can learn from data and improve decision-making.

Outcome and Conclusion

The Knowledge Sharing Session successfully disseminated the key concepts and practical insights on **Machine Learning** gained through the AICTE-QIP Post Graduate Course. The participants developed an understanding of basic ML concepts, learning approaches, model development, evaluation, and practical applications. Overall, the session helped promote awareness of **Machine Learning as an important emerging technology for engineering education and research**. It motivated students and faculty members to explore ML-based solutions and integrate data-driven intelligent techniques into their academic, project, and research activities.



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17/8/26
HOD/ECE

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19/08/2026

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17/8/26
Yours truly,
Dr. A. Arivarasi

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ORGANIZES

EXPERT TALK ON INTRODUCTION TO MACHINE LEARNING: CONCEPTS AND APPLICATIONS

AN INSIGHTFUL SESSION
FOR STUDENTS & FACULTY



RESOURCE PERSON

Dr. Arivarasi A
Assistant Professor, ECE
Sri Sairam College of Engineering



DATE
28 JULY 2026
(Tuesday)



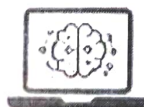
TIME
2:00 PM – 4:00 PM



VENUE
Seminar Hall,
Sri Sairam College
of Engineering

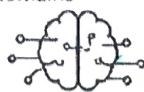
SESSION HIGHLIGHTS

- ✓ What is Machine Learning?
- ✓ Types of Machine Learning
- ✓ Supervised vs Unsupervised Learning
- ✓ Key Algorithms and Models
- ✓ Real-world Applications of Machine Learning
- ✓ Tools and Platforms for Machine Learning
- ✓ Future Scope and Career Opportunities



LEARNING OUTCOMES

- ✓ Understand fundamental concepts of Machine Learning
- ✓ Differentiate between various types of Machine Learning
- ✓ Explore key algorithms and their applications
- ✓ Apply ML concepts to solve real-world problems
- ✓ Identify tools and resources for building ML models
- ✓ Appreciate the impact of ML in various domains



TARGET AUDIENCE



Students (All Years)
Faculty Members



Dr. A. Poonguzhali
HOD, ECE



Dr. B. Shadaksharappa
Principal



Dr. Sai Prakash LeoMuthu
Chairman & CEO
Sairam Institutions



Explore • Engage • Empower • Excel