

DR. S. & S. S. GHANDHY GOVERNMENT ENGINEERING COLLEGE – SURAT



IIC, DIC & SSIP 2.0 CELL

REPORT

Dimension Reduction Techniques in Machine Learning

Introduction

The Department of Computer Engineering organized a session on 'Dimension Reduction Techniques in Machine Learning' with the objective of providing students with an understanding of handling high-dimensional data efficiently. The session aimed to bridge theoretical knowledge and practical applications.

Session I – Theory

Topics covered included:

- Curse of dimensionality
- Feature selection and extraction
- Overview of dimension reduction techniques
- PCA, LDA, t-SNE, Autoencoders

Session II – Practical / Hands-on

- Applying PCA on datasets
- Visualization of data in 2D/3D
- Performance comparison
- Understanding feature importance

Objectives of the Program

- Understand high-dimensional data
- Learn dimension reduction techniques
- Explore ML applications
- Bridge theory and implementation

Outcomes of the Program

- Knowledge of reduction techniques
- Better handling of large datasets
- Practical implementation skills
- Improved ML readiness

Applications

- **Data visualization**
- **Image processing**
- **Natural language processing**
- **Recommendation systems**

Glimpses :

