Techno India NJR Institute of Technology, Udaipur

Advance Machine Learning Using MATLAB

Training Module

Total Time: 15 days

MODULE

- Overview of Machine Learning
- Finding Natural Patterns in Data
- Classification Methods
- Regression Methods
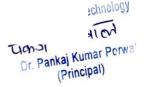- Neural Networks
- Conclusion

Overview of Machine Learning

- What is Machine Learning ?
- Overview
- Import Data
- Process Data
- Extract Features
- Build a Model
- Evaluate the Model
- Review

Finding Natural Patterns in Data

- Course Example - Grouping Basketball Players
- Low Dimensional Visualization
- k-Means Clustering
- Gaussian Mixture Models
- Interpreting the Clusters
- Hierarchical Clustering
- Project - Clustering

Classification Methods

- Course Example - Classifying Fault Types
- Nearest Neighbor Classification
- Classification Trees
- Naive Bayes Classification
- Discriminant Analysis
- Support Vector Machines

- Project - Classification Methods

Regression Methods
- Course Example - Fuel Economy
- Linear Models
- Stepwise Fitting
- Regularized Linear Models
- SVMs and Trees
- Gaussian Process Regression
- Project – Regression

Neural Networks
- Overview of Neural Networks
- Self-Organizing Maps
- Feed-Forward Networks

Conclusion
- Additional Resources
- Survey