Natural Language Processing (NLP) and Indic Language Computing

Detailed Course Syllabus

Module I - Natural Language Processing (NLP)

Objective: To learn about the basic concepts of Linguistics and NLP, text pre-processing.
Topics:

- Introduction to Linguistics – Basic Linguistics needed for NLP
- Basics of Programming – with Python
- Overview of Natural Language Processing (NLP)
    - Components of NLP
    - NLP pipeline
    - Phases of NLP
- Applications of NLP
- Indic NLP

Module II Text Pre-processing

Objective: Gain the knowledge of text pre-processing for Indic languages
Topics:

- Introduction to Text pre-processing
    - Tokenizer
    - Morphanalyser
    - POS
    - Chunker
    - Clause Boundary Identifier
    - Named Entity Recognizer
- Machine Learning (ML) for NLP
    - KNN(K-Nearest Neighbour)
    - CRFs (Conditional Random Fields)
    - SVM (Support Vector Machine)
- Deep Learning (DL) for NLP
    - RNN (Recurrent Neural Networks)
    - NMT (Neural Machine Translation)

Module III Indic NLP applications

Objective: Learn about various NLP applications along with Indic languages perspective.
Topics:

- Information Retrieval
- Text Classification
- Topic Modelling
- Machine Translation
- Sentiment Analysis