This course aims to provide the students with knowledge and skills in applied text analytics focusing on Machine Learning and Natural Language Processing tools.

In particular the course:

- Presents the area of text analytics and provides fundamental tools to extract, represent and analyse information from text sources using machine learning models.

- Provides a fundamental understanding of concepts and tools to build effective language aware systems and applications.

- Presents basic understanding of deep learning models for Natural Language Processing applications and related research.

- Discusses current research advances, business cases and future direction of the field.

**LEARNING OUTCOMES – SUBJECT MASTERY**

- Demonstrate understanding of the text analytics process and relevant applications.

- Work with text analytic tools to uncover information from text.

- Understand challenges related to implementation and scalability.

- Understand Deep learning approach to NLP problems and some available tools for implementation.
- Demonstrate understanding of some recent advances in the field of NLP & text analytics.

**LEARNING OUTCOMES – PERSONAL ABILITIES**

- Problem analysis and critical review
- Report writing and presentation skills
- Working in groups
- Use a range of software for ML, text analytics and NLP

**SYLLABUS**

Following topics will be covered with varying levels of depth:

- Overview on ML models, techniques and use cases & ML project design.
- Language model & text processing principles
- Text classification & visualization
- Text Clustering & topic modeling
- Context-aware text analysis & n-gram model
- Chatbots
- Scaling text analytics
- A deep learning approach to NLP:
F20AA Applied Text Analytics

- Sequence models (ex: RNN, BRNN, LSTM) & transfer learning

- Applications in Named Entity Recognition, learning word-embeddings, machine translation, sentiment classification

- Research Directions and Business Cases

LOCATION AND ASSESSMENT METHODS

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