

Text Analytics with KNIME: from fundamentals to LLMs

Lecturer: Maria Chiara Debernardi

Language

English

Course description and objectives

This course introduces text analytics using KNIME Analytics Platform. It covers the main steps involved in transforming unstructured text into representations that can be analyzed, including text preprocessing, numeric representation, classification, and sentiment analysis.

Through guided examples and practical exercises, students will build KNIME workflows for selected text analytics tasks, including spam detection, topic classification, and sentiment analysis. The final part of the course introduces the use of local Large Language Models (LLMs) for text analysis and compares LLM-based approaches with more traditional NLP techniques.

The course focuses on the main concepts, workflow design, and interpretation of results rather than on programming or the mathematical foundations of NLP models.

At the end of the course, participants will be able to:

- describe the main stages of a basic text analytics workflow
- use KNIME Analytics Platform to import, preprocess, and represent textual data
- apply basic supervised learning techniques to text classification tasks and interpret standard evaluation metrics
- perform basic sentiment analysis using traditional NLP techniques
- use local LLMs for selected text analysis tasks through prompt-based approaches
- compare traditional NLP and LLM-based approaches in terms of workflow, data requirements, results, and computational requirements

Audience

This course is open to all Bocconi students. It is particularly suited for:

- students who prefer a visual, workflow-based approach to text analysis and do not necessarily have a programming background
- students interested in analyzing textual data through practical experience with text classification and sentiment analysis

- students interested in understanding how traditional NLP techniques and Large Language Models can be applied to these tasks

Prerequisites

No coding background or prior knowledge of KNIME is required. Having completed the Computer Science course (30424), or an equivalent course, may be helpful but is not required.

Guidelines

Registration:

You can sign up for the course only through the yoU@B student Diary, in the "**Sign-up for various activities**" box (please note that the box appears only when registrations open. It will not be visible before then).

Cancellations must also be submitted through the Diary **by the registration deadline**.

No other cancellation methods will be accepted.

Registration will be confirmed a few days before the course starts via a message posted in the yoU@B student Diary.

Attendance:

- Attendance of **75% or more** of the lessons: obtainment of the **Open Badge**
- Attendance of **less than 25%** of the lessons: **Exclusion list**

Duration

12 academic hours

Teaching Mode

This course will be only taught in person. Distance mode will not be provided.

Calendar

Lecture	Date	Time	Room
1	Wed 04/11/2026	18:15 – 19:45	5 (Sarfatti)
2	Tue 10/11/2026	18:15 – 19:45	5 (Sarfatti)
3	Wed 11/11/2026	18:15 – 19:45	5 (Sarfatti)
4	Wed 18/11/2026	18:15 – 19:45	5 (Sarfatti)
5	Wed 25/11/2026	18:15 – 19:45	5 (Sarfatti)

6

Wed 02/12/2026

18:15 – 19:45

5 (Sarfatti)

Note: lessons will be held in the traditional room, and **all the students must bring their own device.**

Syllabus of the course

Lecture	Topics
1	Getting started with KNIME and text analytics - KNIME workflows and text data - Introduction to text analytics and NLP <i>Exercise: building a first text analytics workflow</i>
2	Text preprocessing and representation - Cleaning, tokenization, and normalization - Bag-of-Words and TF-IDF representations <i>Exercise: building a text preprocessing pipeline</i>
3	Text classification - Supervised text classification - Spam/ham and topic classification - Model evaluation and performance metrics <i>Exercise: building and evaluating text classifiers</i>
4	Sentiment analysis with traditional NLP - Introduction to sentiment analysis - Lexicon- and feature-based approaches - Strengths and limitations of traditional NLP methods <i>Exercise: analyzing sentiment with NLP techniques</i>
5	From traditional NLP to Large Language Models - Introduction to LLM-based text analysis - Local LLMs and prompting - Using LLMs for sentiment analysis <i>Exercise: sentiment analysis with a local LLM and comparison with traditional NLP approaches</i>

Lecture	Topics
6	Topic classification with LLMs and final comparison - LLM-based topic classification - Traditional NLP vs LLM-based approaches - Comparing results, flexibility, and computational requirements <i>Exercise: topic classification with a local LLM and comparative evaluation</i> <i>Optional: building a simple chatbot with a local LLM</i>

Suggested bibliography

Materials will be provided by the instructor during the course and will be accessible on Blackboard.

Software

KNIME Analytics Platform ([knime.com](https://www.knime.com)): latest standard release available (5.12.0 or higher)

Download it [here](#)

Please note that registration is not required for download, but users must enter a valid email address (your Bocconi one is recommended) and accept the *terms and conditions* of the open-source license.

Available seats

This activity is limited to **110** participants. Registration cannot be carried out once this number has been reached or after closing the registration period.

Please remember that you may unsubscribe from ITEC courses only through the yoU@B Diary and only before the registration deadline.