

# Text Mining and Analytics

## Course Synopsis:

The internet is full of text data and messages. However, deriving high-quality information from these text requires certain techniques and know-how. This course covers the concepts and principles of text mining. Participants will learn the various techniques for analysing text to extract useful insights and patterns to support decision making. They will also learn about text classification, detection of topics in documents, and methods to group them into similar topics.

## Learning Objectives:

Upon successful completion of this course, the learners will be able to:

1. Describe the various techniques for analysing text to extract useful and relevant insights.
2. Use the techniques to address the challenges in text mining.
3. Explain and apply suitable text mining and analytics techniques in solving real-world problems.

## Analytical Software:

- Python and its Natural Language Processing (NLP) libraries
- KNIME or RapidMiner

Some basic programming knowledge is assumed, and the course requires participants to complete programming tasks in Python.

## Course Fee:

This is a course under the SkillsFuture Series. The course fee and subsidy table as follows (exclude GST):

Course Name	Total Programme Fee	Singapore Citizen < 40 yrs old and Permanent Residents	Singapore Citizens ≥ 40 yrs old	Singapore Citizens and Permanent Residents under SME
Text Mining & Analytics	\$840.00	\$252.00	\$84.00	\$84.00

The course fee is inclusive of venue and course materials. Certificate of participation will be provided for participants who have attended 75% of the course.

## Course Programme:

Day		Programme
1	AM	<b>Introduction to Text Mining &amp; Analytics</b> <ul style="list-style-type: none"> <li>Course objectives and outcomes</li> <li>Fundamental of text mining and analytics</li> <li>Application of text mining and analytics</li> <li>Reading and discussion: Application of text mining and analytics</li> </ul>
	PM	<b>Text Preprocessing</b> <ul style="list-style-type: none"> <li>Introduction to preprocessing techniques</li> <li>Text normalization including tokenization and lemmatization</li> <li>Text and character N-grams</li> <li>Stopword removal, and stemming</li> <li>Hand-on practice: Text preprocessing</li> </ul>
2	AM	<b>Text Analysis Techniques</b> <ul style="list-style-type: none"> <li>Vector space model and term weighting</li> <li>Named Entity Recognition (NER)</li> <li>Part-Of-Speech (POS) tagging</li> <li>Hand-on practice: Text analysis techniques</li> </ul>
	PM	<b>Text Retrieval</b> <ul style="list-style-type: none"> <li>Introduction to text retrieval</li> <li>Evaluation methods for text retrieval</li> <li>Reading and discussion: Text retrieval</li> </ul>
3	AM	<b>Sentiment Analysis</b> <ul style="list-style-type: none"> <li>Introduction to sentiment analysis</li> <li>Introduction to machine learning approaches</li> <li>Reading and discussion: Machine learning approaches</li> </ul>
	PM	<b>Sentiment Analysis in Practice</b> <ul style="list-style-type: none"> <li>Sentiment analysis using machine learning approaches</li> <li>Sentiment analysis using hybrid approach</li> <li>Hand-on practice: Sentiment Analysis using machine learning approaches</li> </ul>
4	AM	<b>Topic Modelling</b> <ul style="list-style-type: none"> <li>Introduction to topic modelling</li> <li>Introduction to topic modelling approaches</li> <li>Hand-on practice: Topic modelling</li> </ul>

Day		Programme
	PM	<b>Trend in Text Mining and Analytics</b> <ul style="list-style-type: none"><li>• Introduction to deep learning</li><li>• Introduction to text analytics using deep learning</li><li>• Reading and discussion: Text analytics using deep learning</li></ul> Conclusion