

Course Title:	Text and Vision Intelligence
Course Code:	COMP700
Descriptor Start Date:	31/01/2025
POINTS:	15.00
LEVEL:	7
PREREQUISITE/S:	None
COREQUISITE/S:	None
RESTRICTION/S:	None

LEARNING HOURS

Hours may include lectures, tutorials, online forums, laboratories. Refer to your timetable and course information in Canvas for detailed information.

Total learning hours: 150

PRESCRIPTOR

Language and vision are fundamental to human perception and cognition, yet there is relatively little understanding of how the two interact or operate together at a system level to aid learning and recognition. This paper covers fundamental and advanced aspects of language (especially text) and vision from an artificial intelligence perspective. The primary focus is on practical algorithms, tools and systems of text, vision intelligence, as well as their performance evaluation. Techniques of representing information in semi-formal languages such as Standard Generalized Markup Language (SGML) and free text are compared. The issues associated with representation and extraction of information encapsulated in textual and visual formats, such as the semantic unit perceived as an event, will be explored. Examples of text and visual modelling techniques such as probabilistic and vector models will be used to illustrate AI applications.

Disclaimer: Course descriptors may be amended between teaching periods/semesters

LEARNING OUTCOMES

1. Demonstrate understanding of the basic concepts, approaches and algorithms used in text and visual intelligence;
2. Demonstrate knowledge of how to apply algorithms and techniques for text and visual modelling
3. Extract the features that can be used to understand text and visual information;
4. Demonstrate knowledge of how to design and implement an AI system using AI based text and visual models;
5. Evaluate the complexities involved in the automatic extraction of knowledge encoded in free texts;
6. Explain how AI theories could be used in text and visual analytics.

CONTENT

- Structure of a semi-formal and a free text.
- Feature representation in textual formats.
- Text and visual processing algorithms.
- Models of text and visual intelligence.
- Knowledge based Event computing.
- AI theory for text and visual analytics
- Techniques related to text and visual analytics, text based image/video tagging, social network tagging, etc.

LEARNING & TEACHING STRATEGIES

Lectures, tutorials, readings, exploration of research papers, programming and presentation.

ASSESSMENT PLAN

Assessment Event	Weighting %	Learning Outcomes
Assessment 1	50.00	1,5,6
Assessment 2	50.00	2,3,4

Grade Map	MAP1
	A+ A A- Pass with Distinction
	B+ B B- Pass with Merit
	C+ C C- Pass
	D Fail

Overall requirement/s to pass the course:

To pass this course, students must achieve a minimum overall grade of C-.

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LEARNING RESOURCES

Readings: A recommended reading list will be provided Optional text: Manning, C. D., Raghavan, P., and Schtze, H. (2008). Introduction to Information Retrieval. New York, NY: USA. Cambridge University Press. Feldman R., Sanger J. (2007). The Text Mining Handbook – Advanced Approaches in Analyzing Unstructured Data. New York, NY, USA: Cambridge University Press.

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Principal Programme: **AK3697, Bachelor of Computer and Information Sciences**

Related Programme/s: **AK3698**
AK1041
AK3001
AK3003
AK3756
AK3706

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