Unstructured Data Analysis

Course Syllabus

School of Management, Zhejiang University

Course Code	2021051	**Course Name**	Unstructured Data Analysis
Teaching Hours	32	**Credits**	2
Course Introcudtion	This course introduces students to the process of performing high-valued analytics using unstructured data to support business decisions. Unstructured data (text, tweets, posts, video, audio, …) consist of over 80% of the data being produced every day. Unstructured data analysis includes methods of text mining, image classification, video analysis, music recommendation, etc., and its application permeates in commercial, manufacturing, financial, medical and daily life. Most companies have minimal competencies in using unstructured data analytics for new product development, customer retention, workforce optimization, and a myriad of other areas.so this course will allow students to begin to master how to make decisions based on unstructured data, through basic unstructured data analysis and typical applications, Students can master the most advanced data analysis theory methods and models, combined with the industry big data to carry out analysis, promote data analysis and management engineering development. This course will get you started in how to lead efforts at your company to monetize their data and achieve your career objectives.		
Pre-requisite Knowledge	Python\ Calculus \ Linear algebra\Statistics		
Objectives	1. Learn to solve problems and make decisions in business by unstructured data analysis methods and models.		

	2. Understand the key methods and model principles of unstructured data analysis which include text analysis, image analysis, video analysis and audio analysis. 3. Master the application of unstructured data analysis in business, manufacturing, financial, healthcare and people's livelihood. 4. Enable students to master the most advanced data analysis methods and models, conduct analysis with big data in industries, promote the development of data analysis and management engineering.

	Book Name	Authors	Press	Publish year
Reference Books	Text Data Management and Analysis: A Practical Introduction to Information Retrieval and Text Mining,	C. Zhai and S. Massung	ACM Book Series, Morgan & Claypool Publishers	2016
	Digital Image Processing, 4th Edition	Gonzalez & Woods	Pearson	2018
	Spoken Language Processing	Alex AceroXuedong HuangHsiao-Wuen Hon	Prentice-Hall	2011

	Week	Contents
Teaching Schedule	1	Introduction to Unstructured Data Analytics
	2	Unstructured Data Source and Representation
	3	Text Analysis: Bag of words, TF, DF, IDF etc. Basic Analysis and Sentiment

	4	Image Analysis：Basic Concept
	5	Image analysis：LBP，Shifts，Hogs etc.
	6	Image Analysis：Image Classify and Retrieval for Products
	7	Audio Analysis：MFCC,Style Analysis etc.
	8	Final Exam Report