

Business Intelligence and Big Data Analytics

商業智慧與巨量資料分析
這是一門整合的課程：
自然語言處理,網頁前後端技術,深度學習,文字探勘,爬蟲技術,Python資料分析的輿情大數據系統!

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About This Course

Public opinion analysis is an important application of big data

關於輿情大數據是商業智慧與巨量資料分析的一個重要的應用場景

- ✔ (I) Public opinion is the collective opinion of the people of a society or state on an issue. A public opinion analysis is an important application domain of big data analysis and artificial intelligence. This course will introduce how to implement a public opinion analysis system.
- ✔ (II) A public opinion analysis system involves several technologies including: (1) Natural Language Processing (NLP) —abstract extraction, document similarity and recommendation, document classification and emotional classification (2) Machine learning and deep learning, and (3) Website design.
- ✔ (III) In this course, you will learn how to use Python, Keras, and Django to implement a real world public opinion analysis system.

- (I) 本課程將介紹大數據分析的一個重要的應用場景—輿情分析 (Public opinion analysis)。
- (II) 課程會學習輿情分析用到的相關技術，包括機器學習與自然語言處理NLP，例如:文件摘要、文章相似度、文件推薦文件分類、情緒分類等技術。
- (III) 使用的工具包含Python程式、Keras深度學習模型、Django網頁前端後端整合設計。

Syllabus授課內容

Python基礎

- 1.常用資料結構: list []串列 (類似陣列), tuple (), dict {}字典, set {}集合, 2.數學運算, 3.判斷, 4.迴圈, 5.自訂函數(方法), 6.numpy套件, 7.pandas套件,

自然語言處理NLP

- 1. 斷詞, 2. 詞性分析, 3. 詞頻統計, 4. TFIDF, 5. 文件摘要, 6. 主題分析, 7. 文章相似度, 8. 詞嵌入模型word2vec, doc2vec, 9. 文件推薦,

Python introduction

- 1.Useful data structure: list, tuple, dict, set, 2.Arithmetic, 3.Selection, 4.loop (for, while, for each), 5.Define function, 6.numpy package, 7.pandas package,

Natural Language Processing_(NLP).

- 1. Word Segmentation, 2. Part of Speech Analysis, 3. Keyword frequency, 4. TFIDF, 5. Abstract extraction, 6. Topic modeling, 7. Word embedding, 8. Document similarity, 9. Document

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網頁技術

1. 網頁爬蟲, 2. 前端網頁技術, 3. Django後端網頁技術, 4. Ajax

機器學習與深度學習

1. 深度學習模型, 2. 模型訓練與測試, 3. Keras語法, 4. MLP或CNN
深度學習模型, 5. 文件分類, 6. 情緒分類,

Websites design

1. Web page Crawler, 2. Front end technology, 3. Back end technology, 4. Ajax,

Machine Learning and Deep Learning

1. Machine Learning and Deep learning, 2. Model training and testing, 3. Keras package, 4. MLP or CNN deep learning model, 5. Document classification, 6. Emotional classification,

Why choose this course?

這是一門整合性質的課程，你會用到你在大學與研究所階段學到的IT技術，開發完成一個可以在真實世界運行的系統。



你學到目前很紅並受重視的IT技術

你將會熟悉以下技術(You will familiar with these techniques):

- Python
- Django website design (Python web framework)
- jQuery, JavaScript (web)
- HTML, Bootstrap4 (web)
- Deep Learning (MLP or CNN)
- NLP Natural Language Processing (基礎自然語言處理)
- Word embedding詞嵌入

你可以真正動手實作，而不是課堂上聽聽而已

- Learning by doing從做中學

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你學到的這些技術，可以豐富你的履歷表

After finishing this class, you can say that you have some experience in frontend and backend web techniques. You are able to add several new skills in your resume.

在你的履歷新增以下經驗:網頁前端設計，網頁後端設計，數據分析，人工智慧深度學模型，文字探勘等。未來可以朝向網頁前後端工程師，Python程式設計師，數據分析師，人工智慧工程師等領域發展。

Scoring/Grading評分規定？



- 1. (30%) Class exercises and home works 課堂操作 (每一節課都有任務須完成) 與 作業
- 2. (35%) Midterm project期中專案:
public opinion analysis website 線上新聞文字大數據分析網頁專案(Basic)
- 3. (35%) Term project期末專案:
public opinion analysis website 線上新聞文字大數據分析網頁專案(Complete)

You may do the project alone. Or you may group a two-person team to finish it. But I encourage you to finish the project alone.

1~2人一起完成期中、期末專題。



Frequently Asked Questions

常見的問題，你可能也會有這些疑問？

1. This course is taught in English. My English is not good. Can I take this course?

這門課程是英文授課，我的英文不好，可以修這門課嗎？

+
2. Do I have to speak English to ask questions in class?

課堂上問問題一定得說英文嗎？

+
3. I haven't written a Python program. This course is suitable for me?

我沒有寫過Python程式，我適合修這門課嗎？

+
4. Although I have a basic programming skill, I haven't written a web program. This course is suitable for me?

我只有程式基礎，但是沒有寫過網頁程式，我適合修這門課嗎？

+
5. This course has mid-term and final term projects. What can I do if I can't complete it?

這門課有期中與期末專案，我沒有把握，我無法完成怎麼辦？

+
6. What should I do if I have questions on how to write programs?

寫程式時遇到問題怎麼辦？

+
7. Who is eligible for this course?

這門課適合怎樣的人選修？

+
8. I am a management group student, not a technical group student. Am I suitable for this course?

我是管理組，不是技術組的學生，我適合修這門課嗎？

+
9. What kind of computer equipment is required in this course?

修這門課需要怎樣的電腦配備？

+
10. Do I need my own laptop for this course?

修這門課一定需要自己的筆電？

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