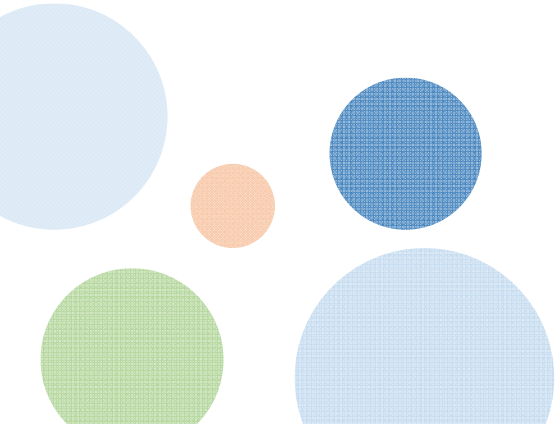
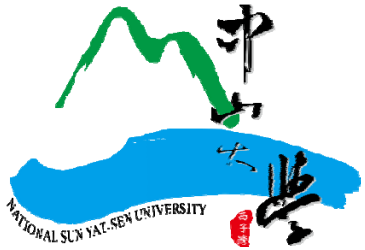
機器學習實務與應用





Course introduction

Course info

- Instructor:
  - 張雲南 Yun-Nan Chang
    - Room EC5006, TEL: (07) 525-2000-ext 4332
    - Email: ynchang@cse.nsysu.edu.tw
- Invited instructors:
  - 資工系蕭勝夫教授
  - 電機系魏家博教授
- TA:
  - 陳冠蓁 m063040035@student.nsysu.edu.tw @ 電資EC5009B
- Office Hour @ 電資EC5006
  - Tue 10:00~12:00
  - Thu 14:00~16:00

Course info

- Pre-requisites:
  - Python programming recommended.

- Grading Policy:
  - Homework + Exam 70%
  - Project 25%
  - Others 5%

- Course Homepage:
  - 中山網路大學 http://cu.nsysu.edu.tw

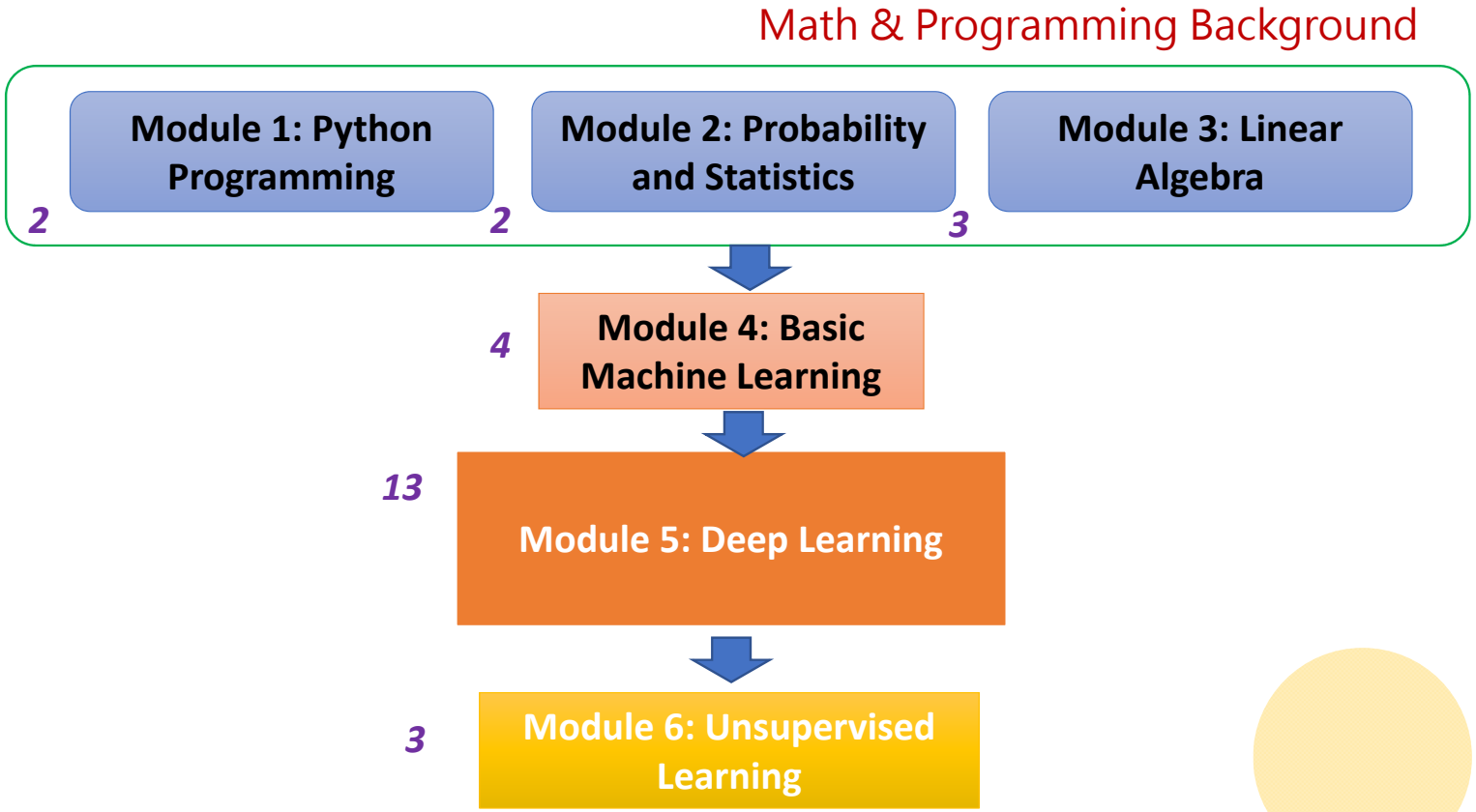
- Notes:
  - 期末專題報告及測驗預計將另外安排非上課時間進行。
  - 預計每週都有安排作業繳交。

Teaching materials

- Reference:
  - Ian Goodfellow and Yoshua Bengio, 2016, Deep Learning, The MIT Press, Cambridge, Massachusetts, London, England

- Handout Materials (Slides)

Course outlines



Course contents

模　組	課程主題	授課老師	預計授課時間
M1: Python programming	Review of Python Programming	張	2/18
	Introduction to key Python modules	張	2/18
M2:Probability and Statistcis	Review of probability related to machine learning	蕭	2/25
	Introduction to basic Statistics	張	3/4
M3: Linear Algebra	Matrix operation and property	蕭	3/4
	Matrix decomposition	蕭	3/11
	Linear Equation and Matrix Calculus	魏	3/18
M4: Basic Machine Learning	Introduction to machine learning process and linear regression	張	3/18
	Fundamental machine learning algorithms for classification	張	3/25
	Decision tree and Ensemble learning	張	4/1
	Introduction to SVM and Kernel methods	張	4/1
	Basic Image Classification methods	魏	4/8

Course contents

模　組	課程主題	授課老師	預計授課時間
M5: Deep Learning	Overview of Deep learning and Data visualization	魏	4/15
	TensorFlow and Optimization of Loss Functions	魏	4/15
	Introduction to Neural Networks	魏	4/22
	Introduction to Convolutional Neural Networks	蕭	4/29
	Training of Neural Networks	蕭	4/29
	Training of Deep Neural Networks	蕭	5/6
	Introduction to key CNN Architectures	蕭	5/13
	DNN architectures for Object Detection and Segmentation	蕭	5/13
	DNN Hardware and Software	蕭	5/20
	Introduction to Recurrent Neural Networks	魏	5/27
M6: Reinforcement Learning	Introduction to Reinforcement Learning	張	6/3
	Advanced Reinforcement Learning algorithm	張	6/10
M7: Unsupervised Learning	Introduction to basic unsupervised learning methods	張	6/10
	Introduction to Generative Adversarial Network	張	6/17