

課程資訊 (Course Information)					
科號 Course Number	10720COM 526000	學分 Credit	3	人數限制 Class Size	80
中文名稱 Course Title	深度學習				
英文名稱 Course English Title	Deep Learning				
任課教師 Instructor	林澤(LIN, CHE) <i>more information</i>				
上課時間 Time	W3W4F3	上課教室 Room	DELTA台達215		
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此科目對應之系所課程規畫所欲培養之核心能力 Core capability to be cultivated by this course	<input type="checkbox"/> 發掘、分析、解決問題與獨立研究之能力 The ability to discover, analyze, solve problems and to research independently. <input type="checkbox"/> 通訊科技整合與創新之能力 The ability to integrate and innovate communication technology. <input type="checkbox"/> 學習新知識與技術之能力 The ability to learn new knowledge and techniques. <input type="checkbox"/> 良好溝通、表達與外語能力 The ability to communicate and express oneself effectively and to be proficient in foreign languages. <input type="checkbox"/> 具團隊精神及遵守專業倫理 The ability to possess team spirit and to comply with professional ethics.				
課程簡述 (Brief course description)					
<p>Deep learning is form of machines learning that enable computers to learn from experience and understand the world in terms of a hierarchy of concepts with a deep representation of many layers. It has been proven to be highly successful in predictive tasks for applications such as computer vision and natural language processing. In this course, we will introduce a broad range of topics, applications and latest research in deep learning.</p>					
課程大綱 (Syllabus)					
<p>Course keywords: deep learning, ai, data science, machine learning, RNN, CNN</p> <p>一、課程說明 (Course Description) Deep learning is form of machines learning that enable computers to learn from experience and understand the world in terms of a hierarchy of concepts with a deep representation of many layers. It has been proven to be highly successful in predictive tasks for applications such as computer vision and natural language processing. In this course, we will introduce a broad range of topics, applications and latest research in deep learning.</p> <p>二、指定用書 (Text Books) Deep Learning by Ian Goodfellow, Yoshua Bengio, Aaron Courville</p> <p>三、參考書籍 (References)</p> <p>四、教學方式(Teaching Method) Interactive lecture. We will incorporate collaborative learning approach into our lectures. Constant interaction with other students and the lecturer is expected.</p> <p>五、教學進度 (Syllabus)</p> <p>1.Introduction & Linear Algebra 2.Probability, Information Theory & Numerical Computation</p>					

3. Machine Learning Basics
4. Deep Feedforward Networks
5. Regularization for Deep Learning
6. Convolutional Neural Networks
7. Recurrent Neural Networks
8. Gated Recurrent Neural Networks
9. Linear Factor Models
10. Auto-Encoders
11. Structured Probabilistic Models
12. Monte Carlo Methods
13. Confronting the Partition Function
14. Approximate Inference
15. Deep Generative Models
16. Generative Stochastic Networks

六、成績考核 (Evaluation)

TBA