課程資訊 (Course Information)					
科號 Course Number	11110CS 560500	學分 Credit	2	人數限制 Class Size	60
中文名稱 Course Title	人工智慧倫理、法律與社會				
英文名稱 Course English Title	AI Ethics, Law and Society				
任課教師 Instructor	賴尚宏(LAI, SHANG-HONG) 郭昱廷(YU-TING KUO) 林勤富(LIN, CHING-FU) 李怡俐(LEE, YI-LI) *more information*				
上課時間 Time	F3F4	上課教室 Room	DELTA台達108		

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	- 具有活用資訊、數學及科學知識的能力。 (5%) To have the ability to apply knowledge of computer science, mathematics, and science to daily life. (5%) - 具有創新及批判性思考，能發現、定義、及解決問題的能力。 (5%) To be able to think creatively and critically as well as discover, define, and solve problems. (5%) □ 具有分析、設計、開發、整合、測試、與評估資訊系統、元件、或演算法的能力。 To be able to analyze, design, develop, integrate, test, and evaluate systems, components, and algorithms of computer science. - 具備良好的溝通技巧與跨領域團隊合作的能力。 (10%) To have good communication skills and be able to cooperate with others in interdisciplinary teams. (10%) - 具備檢索文獻、閱讀論文、與撰寫論文的能力。 (10%) To be able to search literatures, read and write academic papers. (10%) □ 具有策劃及執行研究計畫、撰寫研究報告及簡報研究成果的能力。 To be able to plan and execute research projects, write research reports, and present research results. - 能分析評估與資訊相關之產業脈動與最新的資訊科技進展。 (10%) To be able to analyze and evaluate the most recent technological and industrial advancements regarding computer science. (10%) - 瞭解資訊科技對於全球性社會、經濟、文化等層面的影響與責任。 (40%) To understand the social, economical, cultural effects of computer science and related technologies on the global level. (40%) - 瞭解國際視野及終身學習的重要性。 (10%) To understand the importance of international view as well as lifelong education. (10%) - 尊重學術、工程倫理、及智慧財產權。 (10%) To respect academics, engineering ethics, and intellectual property. (10%)

課程簡述 (Brief course description)

This AI Ethics, Law, and Society class aims to provide an introduction of various topics of AI Ethics to help establish a foundation for the students to better understand the importance, design/principles, technology, policy/regulation/governance, implementation, and impact of all aspects of AI ethics. We will discuss these topics from the perspectives of Privacy, Safety, Fairness, Equality, Robustness, Accountability, Explanability, Human dignity, Human rights, Democracy, etc. We will also introduce various use cases and scenarios of challenges in AI ethics (e.g., surveillance, recruitment, autonomous driving, finance, etc.).

課程大綱 (Syllabus)

Course keywords:
AI, Machine Learning, Deep Learning, AI Ethics, AI Privacy, AI Safety, AI Fairness, AI Equality, AI Explanability, Democracy, Responsible AI, Explainable AI, AI governance, AI laws, AI regulation

一、課程說明 (Course Description)

This AI Ethics, Law, and Society class aims to provide an introduction of various topics of AI Ethics to help establish a foundation for the students to better understand the importance, design/principles, technology, policy/regulation/governance, implementation, and impact of all aspects of AI

ethics. We will discuss these topics from the perspectives of Privacy, Safety, Fairness, Equality, Robustness, Accountability, Explanability, Human dignity, Human rights, Democracy, etc. We will also introduce various use cases and scenarios of challenges in AI ethics (e.g., surveillance, recruitment, autonomous driving, finance, etc.).

二、指定用書 (Text Books)

Instead of textbooks, there will be pre-reading materials (research papers, journal articles, blogs, etc.).

三、參考書籍 (References)

Atlas of AI, Kate Crawford, Yale University Press, 2021
The Age of AI: And Our Human Future, Henry A Kissinger, Eric Schmidt, Daniel Huttenlocher, Little, Brown and Company, 2021
A Human's Guide to Machine Intelligence: How Algorithms Are Shaping Our Lives and How We Can Stay in Control, Kartik Hosanagar, Viking, 2019
Law for Computer Scientists and Other Folk, Mireille Hildebrandt, Oxford University Press, 2020
Superintelligence, Paths, Dangers, Strategies, Nick Bostrom, Oxford University Press, 2016
The Oxford Handbook of Ethics of AI, Markus D. Dubber et al., Oxford University Press, 2021
AI Ethics, Mark Coeckelbergh, The MIT Press, 2020
Tools and Weapons: The Promise and the Peril of the Digital Age, Brad Smith and Carol Ann Browne, Penguin Books, 2021
Every Leader's Guide to the Ethics of AI, Thomas H. Davenport and Vivek Katyal, MIT Sloan Management Review, December 2018
What Do We Do About the Biases in AI?, by James Manyika et al., Harvard Business Review, October 2019
Putting Responsible AI Into Practice, Rumman Chowdhury et al., MIT Sloan Management Review, October 2020
The Regulation of AI — Should Organizations Be Worried?, Ayanna Howard, MIT Sloan Management Review, July 2019
Diversity in AI: The Invisible Men and Women, Ayanna Howard and Charles Isbell, MIT Management Review, Winter 2021
Research Handbook on the Law of Artificial Intelligence, Woodrow Barfield & Ugo Pagallo, Elgar, 2018.
Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor, Virginia Eubanks, St. Martin's Press, 2018.
The Cambridge Handbook of the Law of Algorithms, Woodrow Barfield, Cambridge University Press, 2020.
Artificial Intelligence and Law, Jan De Bruyne & Cedric Vanleenhove, Intersentia, 2021.
Law and Artificial Intelligence: Regulating AI and Applying AI in Legal Practice, Bart Custers & Eduard Fosch-Villaronga, T.M.C. Asser Press, 2022
Artificial Intelligence: Law and Regulation, Charles Kerrigan, Elgar, 2022 (in commercial contexts).
Google AI Principles: https://ai.google/principles/
Microsoft Responsible AI Principles: https://www.microsoft.com/en-us/ai/responsible-ai?activetab=pivot1%3aprimaryr6

四、教學方式 (Teaching Method)

Lectures (instructors and guest speakers) and interactive discussion (in person and virtual)

五、教學進度 (Syllabus)

(Week 1) Introduction
(Week 2) AI History and Technology Overview
(Week 3) AI Applications: Scenarios
(Week 4) Guest Speaker #1 (Professor Chao)
(Week 5) AI Design Principles: Fairness and Robustness
(Week 6) AI Design Principles: Privacy and Explainability
(Week 7) Guest Speaker #2 (TBD, Dr. Pin-Yu Chen)

(Week 8) AI Ethics in Law & Society: Discrimination, Bias and Inequality
(Week 9) Global Governance on Facial Recognition Technology and Surveillance: Features, Driving Forces, and Grand Process
(Week 10) AI Ethics in Business + Term Project introduction (30 minutes)
(Week 11) Legal Regulation of AI Weapons
(Week 12) Unemployment in the AI Age: Legal Responsibility of Government and Business
(Week 13) Guest Speaker #3 (TBD)
(Week 14) AI Ethics in Law & Society: Autonomous Driving, Smart Healthcare
(Week 15) AI Ethics in Law & Society: Law Enforcement
(Week 16) AI for Good and Social Impacts
(Week 17) Term Project Presentations I
(Week 18) Term Project Presentations II

六、成績考核 (Evaluation)

Quiz 10%
Essays (individual-based) 40%
Term project (team-based) 30%
Class Attendance 10%
Class Participation 10%