人工智慧法律與政策

ARTIFICIAL INTELLIGENCE LAW & POLICY

Syllabus – Spring 2021
Fridays 10:10-12:00
TSMC 832

Prof. Ching-Fu Lin
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OFFICE HOURS

My formal office hours are Mondays from 15:00 to 17:00. Please email me in advance so I can make sure to be in my office when you arrive. If you would like to set a different time to meet, just let me know.

COURSE DESCRIPTION

The future is now. We are entering a new world of Artificial Intelligence (AI). Rapid developments of technologies have transformed AI from academic research projects to emerging forces that can shape the ways in which individuals, business organizations, and governments interact. This seminar (whose inception in 2017 marked the first of its kind in Taiwan) explores many of the legal, social, and political implications of the rise in AI, robots, algorithms, and brain-machine interface. Through the assigned readings and weekly discussion, this Seminar seeks to guide students in identifying the promises and perils of AI and in mapping critical challenges facing users, lawyers, engineers, and policymakers across the globe. Besides a general background of AI, the course will focus on, more specifically, the values and ethics of AI, regulatory design and automated vehicles, autonomous weapon systems and international humanitarian law, algorithmic bias and justice, surveillance and social control, and other problems of accountability, transparency. While other governance issues are of no less importance in the modern society (such as automation and labor, ownership and antitrust, data and privacy protection, and AI/robotic agent personhood), the course is not able to cover all of them within a limited timeframe.

* This course is instructed in English.

ASSIGNMENTS AND GRADES

The goal of the seminar is for all of us to explore and theorize about legal and policy issues regarding the development and application of artificial intelligence from an interdisciplinary perspective. For this to work, all the students are expected to finish the assigned readings before class, come to the seminar with adequate preparation, and actively engage in discussion. All class readings are accessible at the Google Drive link below:

https://drive.google.com/open?id=1jyUyZB2v_GFNlhSjYYZlhWr0dIIYKev9.

There is no mid-term or final exam. The grades will be based on the following two (2) criteria.

✧ Reaction Papers: Each student shall submit six (4) reaction papers throughout the semester. A reaction paper is NOT a summary of the readings. Rather, a reaction paper should include your comments and critiques on a specific reading assignment (*before* the class discusses it) and analyze how the work fits into the core themes of the seminar. Each reactions paper should be around 500-750 words, and will be due the *Wednesday before class by noon*. Please upload your reaction papers to the iLMS course website by the deadline, and note that late submissions will not be graded. You are free to submit more than six reactions papers and select the best six for grading consideration. Reaction papers will count for 40% of your grade.

✧ Class Participation: Active class participation is required. Ideally, everyone will have well-thought-out comments/questions every class meeting. Class participation (which may be in the form of a roundtable discussion, brainstorming session, or informal dialogue) constitutes an important part of the seminar and counts for 30% of your grade. The final class features a roundtable discussion among all students on examining existing proposals for better AI governance, and may take the form of a poster session or debate.

✧ Roundtable Discussion: During the final weeks, each student will make a presentation on a topic related to AI law and policy that interests her/him, paving the way for class discussion. The other students will pose questions or give comments to foster deeper exchange of thoughts and analytical brainstorming. This will count for 30% of the total grade.

* *Auditors who commit to fulfill the above two criteria are welcome to sit in the class.*

USEFUL LINKS/INFORMATION

✧ Berkman Klein Center for Internet & Society, https://cyber.harvard.edu/

✧ Stanford Center for Legal Informatics (CodeX), https://law.stanford.edu/codex-the-stanford-center-for-legal-informatics/

✧ AI Now Institute at New York University, https://ainowinstitute.org/

✧ MIT Media Lab, https://www.media.mit.edu/courses/the-ethics-and-governance-of-artificial-intelligence/

✧ Alan Turing Institute, https://www.turing.ac.uk/

✧ Oxford Internet Institute, https://www.oii.ox.ac.uk/

✦ Allens Hub for Innovation, Law & Technology, https://www.allenshub.unsw.edu.au/

✦ Digital Asia Hub, https://www.digitalasiahub.org/

✦ Tencent Research Institute, http://www.tisi.org/

✦ Library of Congress, https://www.loc.gov/law/help/artificial-intelligence/index.php (Regulation of Artificial Intelligence)

TENTATIVE CLASS SCHEDULE**

Date	Topics & Readings
Week 1	**CLASS INTRODUCTION**
Week 2	**GENERAL BACKGROUND (I)** ○ AI Now Institute at New York University, *AI Now Report 2019* (December, 2019), pp. 14-24. ○ Peter Stone et al., *Artificial Intelligence and Life in 2030: One Hundred Year Study on Artificial Intelligence* (September, 2016), pp. 12-41. ○ Gregory N. Mandel, *Regulating Emerging Technology*, 1 LAW, INNOVATION & TECH. 75 (2009), pp. 75-91. ○ Ryan Calo, *Artificial Intelligence and Policy: A Roadmap* (August, 2017). [optional] ○ Thomas Burri, *Machine Learning and the Law: Five Theses*, Machine Learning and the Law Conference (2017). [optional] ○ Roger Brownsword, *So What Does the World Need Now? Reflections on Regulating Technologies*, *in* REGULATING TECHNOLOGIES: LEGAL FUTURES, REGULATORY FRAMES, AND TECHNOLOGICAL FIXES 23 (Roger Brownsword & Karen Yeung eds., 2008), pp. 23-48. [optional]
Week 3	**GENERAL BACKGROUND (II)** ○ Anupam Chander, *Future-Proofing Law*, 51(1) U.C. DAVIS L. REV. 1 (2017), pp. 1-25. ○ KAREN YEUNG & MARTIN LODGE, *Algorithmic Regulation: An Introduction*, IN ALGORITHMIC REGULATION (2019), pp. 1-11. ○ Matthew U. Scherer, *Regulating Artificial Intelligence Systems: Risks, Challenges, Competences, and Strategies,* 29(2) HARV. J.L. & TECH. 353 (2016), pp. 353-76. ○ Jenna Burrell, *How the Machine "Thinks": Understanding Opacity in Machine Learning Algorithms*, BIG DATA & SOCIETY 1 (January-June, 2016), pp. 1-10. ○ Harry Surden, *Artificial Intelligence and Law: An Overview*, 35(4) GA. ST, U.L. REV. 1306 (2019), pp. 1306-37. ○ David C. Vladeck, *Machines without Principles: Liability Rules and Artificial Intelligence*, 89 WASH. L. REV. 117 (2014), pp. 117-50. [optional] ○ GARY SMITH, THE AI DELUSION (2018), PP. 207-33. [optional] ○ MAX TEGMARK, LIFE 3.0: BEING HUMAN IN THE AGE OF ARTIFICIAL INTELLIGENCE (2017), pp. 22-48, 82-133. [optional]

** Subject to change by the instructor.

Week 4	**AUTOMATED VEHICLE AND REGULATORY DESIGN (I)**
	o MIT Media Lab, *Moral Machine*: http://moralmachine.mit.edu/ (**please try this "trolley problem" scenario/dilemma platform before class).
	o Edmond Awad et al., *The Moral Machine Experiment*, 563 NATURE 59 (2018), pp. 59-64.
	o Todd Litman, *Autonomous Vehicle Implementation Predictions: Implications for Transport Planning*, Victoria Transport Policy Institute (Oct. 27, 2019), pp. 3-16.
	o Allen & Overy LLP, *Autonomous and Connected Vehicles: Navigating the Legal Issues* (2017), pp. 2-17.
	o Andrea Renda, *Ethics, Algorithms and Self-Driving Cars: A CSI of the "Trolley Problem*, CEPS Policy Brief (January 2018), pp. 1-15.
	o Deloitte Insights, *Forces of Change: The Future of Mobility* (2017), pp. 2-9. [optional]
	o Karen Yeung, *Towards an Understanding of Regulation by Design*, in REGULATING TECHNOLOGIES: LEGAL FUTURES, REGULATORY FRAMES, AND TECHNOLOGICAL FIXES 79 (Roger Brownsword & Karen Yeung eds., 2008), pp. 79-107. [optional]
	o Amitai Etzioni and Oren Etzioni, *AI Assisted Ethics*, 18(2) ETHICS & INFO. TECH.149 (2016), pp. 149-156. [optional]

Week 5	**AUTOMATED VEHICLE AND REGULATORY DESIGN (II)**
	o Christoph Luetge, *The German Ethics Code for Automated and Connected Driving*, PHILOS. TECHNOL. (2017).
	o Jason Millar, *Ethics Settings for Autonomous Vehicles*, in ROBOT ETHICS 2.0: FROM AUTONOMOUS CARS TO ARTIFICIAL INTELLIGENCE 20 (Patrick Lin et al. eds, 2017), pp. 20-32.
	o Bryan Casey, *Amoral Machines, or: How Roboticists Can Learn to Stop Worrying and Love the Law*, 111 NW. U. L. REV. 231 (2017), pp. 231-50.
	o Tracy Hresko Pearl, *Hands on the Wheel: A Call for Greater Regulation of Semi-Autonomous Cars*, 93(3) IND. L.J. 713 (2018), pp. 717-44.
	o Jeffrey K. Gurney, *Imputing Driverhood: Applying a Reasonable Driver Standard to Accidents Caused by Autonomous Vehicles*, in ROBOT ETHICS 2.0: FROM AUTONOMOUS CARS TO ARTIFICIAL INTELLIGENCE 51 (Patrick Lin et al. eds, 2017), pp. 51-62. [optional]
	o Anjanette Raymond et al., *Building a Better HAL 9000: Algorithms, the Market, and the Need to Prevent the Ingraining of Bias*, NW. J. TECH. & INTELL. PROP. (2017). [optional]
	o Federal Ministry of Transport and Digital Infrastructure (Germany), *Ethics Commission Report, Automated and Connected Driving* (June 2017). [optional]

Week 6	**ALGORITHMIC BIAS AND THE CRIMINAL JUSTICE SYSTEM**
	o *State v. Loomis*, 881 N.W.2d 749 (Wis. 2016).
	o *Loomis v. Wisconsin*, 137 S.Ct. 2290 (2017).
	o Julia Angwin et al., *Machine Bias*, PROPUBLICA (May 23, 2016), pp. 1-12.
	o Frank Pasquale, *Secret Algorithms Threaten the Rule of Law*, MIT TECHNOLOGY REVIEW (June 2017), pp. 1-4.

	o Julia Dressel & Hany Farid, *The Accuracy, Fairness, and Limits of Predicting Recidivism*, 4(1) SCIENCE ADVANCES (January 17, 2018), pp. 1-5.
	o Han-Wei Liu et al., *Beyond State v. Loomis: Artificial Intelligence, Government Algorithmization, and Accountability*, 27(2) INT'L J. L. & INFO. TECH. 122 (2019), pp.122-41.
	o Ellora Israni, *Algorithmic Due Process: Mistaken Accountability and Attribution in State v. Loomis*, HARV. J.L. & TECH. DIGEST (August 31, 2017), pp. 1-3. [optional]
	o Solicitor General's Amicus Brief, No. 16-6387 (Petition for a Writ of Certiorari to the Supreme Court of Wisconsin), pp. 1-23. [optional]
	o Katherine Freeman, *Algorithmic Injustice: How the Wisconsin Supreme Court Failed to Protect Due Process Rights in State v. Loomis*, 18 N.C. J. L. & TECH. 75 (2016), pp. 76-106. [optional]
	o *Criminal Law – Sentencing Guidelines – Wisconsin Supreme Court Requires Warning Before Use of Algorithmic Risk Assessments in Sentencing – State v. Loomis 881 N.W.2d 749 (Wis. 2016)*, 130 HAR. L. REV. 1530 (2017), pp. 1530-37. [optional]
Week 7	**AI AND THE JUDICIARY** o Richard E. Susskind, *Artificial Intelligence, Expert Systems and Law*, 5 DENNING L.J. 105 (1990), pp. 105-16. o Frank A. Pasquale & Glyn Cashwell, *Prediction, Persuasion, and the Jurisprudence of Behaviorism*, 68 U. TORONTO L.J. 63 (2018), pp. 63-81. o Mireille Hildebrandt, *Law as Computation in the Era of Artificial Legal Intelligence: Speaking Law to the Power of Statistics*, 68 U. TORONTO L.J. 12 (2018), pp. 12-35. o Anthony D'Amato, *Can/Should Computers Replace Judges?*, 11 GA. L. REV. 1277 (1977), pp. 1277-1301. o Benjamin Alarie et al., *How Artificial Intelligence Will Affect the Practice of Law*, 68 U. TORONTO L.J. 106 (2018), pp. 106-24. [optional] o Andrea L. Roth, *Machine Testimony*, 126 YALE L.J. 1972 (2017), pp. 1974-2053. [optional] o Geneviève Vanderstichele, *The Normative Value of Legal Analytics. Is There a Case for Statistical Precedent?*, University of Oxford Master Thesis (2019). [optional] o Tim Wu, *Will Artificial Intelligence Eat the Law? the Rise of Hybrid Social-Ordering Systems*, 119 COLUM. L. REV. 2001 (2019). [optional] o Olivier Sylvain, *Recovering Tech's Humanity*, 119 COLUM. L. REV. 252 (2019). [optional] o Andrea Roth, *Trial by Machine,* 104 GEO. L.J. 1245 (2016). [optional]
Week 8	**AUTONOMOUS WEAPON SYSTEMS AND INTERNATIONAL LAW** o Kenneth Anderson & Matthew C. Waxman, *Law and Ethics for Autonomous Weapon Systems: Why a Ban Won't Work and How the Laws of War Can*, Columbia Public Law Research Paper 13-351 (2013), pp. 1-27. o Alan L. Schuller, *At the Crossroads of Control: The Intersection of Artificial Intelligence in Autonomous Weapons Systems with International Humanitarian Law*, 8 HARV. NAT'L SECURITY J. 379 (2017), pp. 382-425. o International Committee of the Red Cross (ICRC), *Views of the ICRC on Autonomous Weapons System*, Convention on Certain Conventional Weapons (CCW), Meeting of Experts on Lethal Autonomous Weapons Systems (LAWS), (April 11, 2016), pp. 1-

	6.
	○ [Names Redacted], *Lethal Autonomous Weapon Systems: Issue for Congress*, Congressional Research Service (April 14, 2016), pp. 1-26.
	○ Neil Davison, *A Legal Perspective: Autonomous Weapon Systems under International Humanitarian Law*, UNODA Occasional Papers No. 30 (2017), pp. 1-18. [optional]
	○ Mary L. Cummings, *Artificial Intelligence and the Future of Warfare*, Chatham House (January, 2017). [optional]
	○ United States Department of Defense, *Directive 3000.09* (November 21, 2012; Incorporating Change 1, May 8, 2017). [optional]
	○ Nehal Bhuta et al., *Present Futures: Concluding Reflections and Open Questions on Autonomous Weapons Systems*, *in* AUTONOMOUS WEAPONS SYSTEMS: LAWS, ETHICS, POLICY 347 (2016), pp. 347-83. [optional]
Week 9	**MIDTERM EXAM PERIOD (NO CLASS)**
Week 10	**AI AND HUMAN RIGHTS**
	○ Filippo A. Raso et al., *Artificial Intelligence & Human Rights: Opportunities & Risks*, Berkman Klein Center for Internet and Society at Harvard University Research Publication No. 2018-6 (Sep. 25, 2018), pp. 7-58.
	○ Lorna McGregor et al., *International Human Rights Law as a Framework for Algorithmic Accountability*, 68 INT'L & COMP. L.Q. 309 (2019), pp. 309-43.
	○ Anupam Chander, *The Racist Algorithm?*, 115(6) MICH. L. REV. 1023 (2017), pp. 1023-45. [optional]
	○ Access Now, *Human Rights in the Age of Artificial Intelligence* (Nov., 2018). [optional]
	○ Steven Livingston & Mathias Risse, *The Future Impact of Artificial Intelligence on Humans and Human Rights*, 33(2) ETHICS & INT'L AFFAIRS 141 (2019), pp. 141-58. [optional]
Week 11	**DATA-DRIVEN SOCIAL CONTROL AND RULE OF LAW**
	○ Yu-Jie Chen et al., *"Rule of Trust": The Power and Perils of China's Social Credit Megaproject*, 32(1) COLUM. J. ASIAN L. 1, pp. 1-34.
	○ Danielle Keats Citron & Frank Pasquale, *The Scored Society: Due Process for Automated Predictions*, 89(1) WASH. L. REV. 1 (2014), pp. 1-33.
	○ Stephan Raaijmakers, *Artificial Intelligence for Law Enforcement: Challenges and Opportunities*, 17(5) IEEE SECURITY & PRIVACY 74 (2019), 74-77.
	○ Rashida Richardson et al., *Litigating Algorithms 2019 US Report: New Challenges to Government Use of Algorithmic Decision Systems* (Sep., 2019). [optional]
	○ VIRGINIA EUBANKS, AUTOMATING INEQUALITY: HOW HIGH-TECH TOOLS PROFILE, POLICE, AND PUNISH THE POOR (2018). [optional]
	○ FRANK PASQUALE, THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND INFORMATION (2015). [optional]
Week 12	**AI AND INTELLECTUAL PROPERTY RIGHTS (INVITED TALK)**
	○ Susan Barty et al., *AI and Intellectual Property*, *in* RESPONSIBLE AI: A GLOBAL

POLICY FRAMEWORK (Charles Morgan ed., 2019), pp. 259-81.

- Daryl Lim, *AI & IP: Innovation & Creativity in an Age of Accelerated Change*, 52 AKRON L. REV. 813 (2018), pp. 835-73.

- Kalin Hristov, *Artificial Intelligence and the Copyright Dilemma*, 57(3) IDEA: THE IP LAW REVIEW 431 (2017), pp. 431-54. [optional]

- Jessica Fjeld & Mason Kortz, *A Legal Anatomy of AI-generated Art: Part I*, HARV. J.L. & TECH. DIGEST (November 21, 2017), pp. 1-7. [optional]

- Mauritz Kop, *AI & Intellectual Property: Towards an Articulated Public Domain* (June 12, 2019), pp. 1-39. [optional]

Week 13	**TRANSFORMATION OF HEALTHCARE IN THE AGE OF AI**

- W. Nicolson Price II, *Regulating Black-Box Medicine*, 116 MICH. L. REV. 421 (2017), pp. 421-73.

- W. Nicolson Price II & I. Glenn Cohen, P*rivacy in the Age of Medical Big Dat*a, 25 NATURE MEDICINE 37 (2019), pp. 37-43.

- Daniel Schonberger, *Artificial Intelligence in Healthcare: A Critical Analysis of the Legal and Ethical Implications*, 27 INT'L J. L. & INFO. TECH. 171 (2019), pp. 171-203.

- Trishan Panch et al., *The "Inconvenient Truth" about AI in Healthcare*, 2(77) NPJ DIGITAL MEDICINE 1 (2019), pp. 1-3.

- Jessica Morley et al., *The Debate on the Ethics of AI in Health Care: A Reconstruction and Critical Review* (Nov., 2019), pp. 1-26. [optional]

- W. Nicolson Price II, *Medical Malpractice and Black-Box Medicine*, *i*N BIG DATA, HEALTH LAW, AND BIOETHICS (I. Glenn Cohen et al. eds., 2018). [optional]

- PWC, *What Doctor? Why AI and Robotics Will Define New Health* (June, 2017). [optional]

Week 14	**GOVERNANCE, ACCOUNTABILITY, AND TRANSPARENCY: A ROUNDTABLE DISCUSSION ON EXISTING PROPOSALS**

- Berkman Klein Center for Internet & Society at Harvard University, *Ethics and Governance of AI at Berkman Klein: Report on Impact*, 2017-2019 (Oct. 11, 2019), at https://cyber.harvard.edu/story/2019-10/ethics-and-governance-ai-berkman-klein-report-impact-2017-2019.

- Kate Crawford & Jason Schultz, *AI Systems as State Actors*, 119 COLUM. L. REV. 1941 (2019), pp. 1941-72.

- Ashley Deeks, *The Judicial Demand for Explainable Artificial Intelligence*, 119 COLUM. L. REV. 1829 (2019), pp. 1829-50.

- Andrew Tutt, *An FDA for Algorithms*, 69 ADMIN. L.J. 83 (2017), pp. 83-123.

- Mireille Hildebrandt, *Privacy as Protection of the Incomputable Self: From Agnostic to Agonistic Machine Learning*, 20 THEORETICAL INQUIRIES IN L. 83 (2019), PP. 83-127.

- Joshua A. Kroll et al., *Accountable Algorithms*, 165 U. PA. L. REV. 633 (2017), pp. 656-94.

- Mike Ananny & Kate Crawford, *Seeing without Knowing: Limitations of the Transparency Ideal and Its Application to Algorithmic Accountability*, NEW MEDIA & SOCIETY 1 (2016), pp. 1-13.

- Iyad Rahwan, *Society-in-the-Loop: Programming the Algorithmic Social Contract*, ETHICS OF

INFO. TECH. (forthcoming), pp. 1-9.

- o Robert Brauneis & Ellen Goodman, *Algorithmic Transparency for the Smart City*, 20 YALE J.L. & TECH. 103 (2018), pp. 115-36. [optional]

- o Finale Doshi-Velez & Mason Kortz, *Accountability of AI Under the Law: The Role of Explanation*, Working Group on Explanation and the Law, Berkman Klein Center Working Paper (2017), pp. 1-12. [optional]

- o Sandra Wachter et al., T*ransparent, Explainable, and Accountable AI for Robotics*, 2 SCIENCE ROBOTICS (2017), pp. 1-2. [optional]

- o Bryce Goodman & Seth Flaxman, *European Union Regulations on Algorithmic Decision-Making and a "Right to Explanation,"* ICML Workshop on Human Interpretability in Machine Learning (2016), pp. 1-7. [optional]

- o Jack M. Balkin, *The Three Laws of Robotics in the Age of Big Dat*a, 78 OHIO STATE L.J. (2017). [optional]

- o Cass R. Sunstein, *Algorithms, Correcting Biases*, Preliminary Draft 12/12/18 for Social Research, pp. 1-9. [optional]

- o Danielle K. Citron, *Technological Due Process*, 85 WASH. L. REV. 1249 (2008). [optional]

- o IEEE, *Ethically Aligned Design: A Vision for Prioritizing Human Well-being with Autonomous and Intelligent Systems* (The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems – Version 2, 2017), Executive Summary & Principles, pp. 2-31. [optional]

Week 15	**ROUNDTABLE DISCUSSION (I)**
Week 16	**ROUNDTABLE DISCUSSION (II)**
Week 17	**ROUNDTABLE DISCUSSION (III)**
Week 18	**FINAL EXAM PERIOD**