MSAI 448: Law and the Governance of Artificial Intelligence
Fall 2019

Instructor:	Daniel W. Linna Jr.	Email:	daniel.linna@law.northwestern.edu
Time:	Monday, 5-8pm	Place:	Technological Institute F281

Course Description:
This course introduces engineers to the legal, regulatory, ethical, and policy questions raised by advancements in artificial intelligence and its increasing use. We will study issues in the use of artificial intelligence in various forms by businesses, governments, and nongovernmental organizations. We will explore the roles of individuals and organizations as well as governments, regulatory bodies, and the broader international community for the successful governance of artificial intelligence. This course also explores the use of artificial intelligence to preserve and promote the rule of law, improve justice, and expand access to law and legal services.

Prerequisites:
MSAI 348: Introduction to Artificial Intelligence

Course Materials:
Readings consist of research papers, case studies, articles, and portions of relevant books.

Course Goals/Objectives:
The goal of this course is to prepare engineers to proactively identify legal, regulatory, and ethical issues during the innovation and development processes, well before deployment. Students will also consider how compliance, individual rights, democratic principles, and the rule of law can be implemented in the innovation process and artificial intelligence systems by design and default.

Topics:
- Artificial intelligence policy, law, and regulation
- Relevant existing law, including discrimination and privacy law
- Bias, fairness, accountability, and transparency
- Ethical concerns raised by the use of artificial intelligence
- Liability for physical injuries, including injuries caused by autonomous vehicles
- Democratic principles, information platforms, and bot speech
- Artificial intelligence in policing and the criminal justice system
- Using artificial intelligence to expand access to law and legal services
- Agency and robot rights
- Autonomous weapons and assessing the existential threat question
- Automation, the future of work, and policy

Grading Policy:

- Team project: 50%
- Short (1,000 word) paper due mid-term: 20%
- Weekly participation in online discussion forum: 15%
- Class participation: 15%

Course Paper

Each student will complete a short paper (1,000 words +/- 5%) styled as a blog post. Choose a law and artificial intelligence topic that you find interesting, ideally a topic that has some relevance to your future career. It is best to choose a narrow topic to manage the necessary background. You must cite a few sources, but this is not intended to be a deep-dive research paper. You will submit your topic, a simple bullet-point outline, and list of initial resources for my review and feedback.

Your paper must be submitted via Canvas by **5:00pm Friday, November 8**. As measured by the word count feature in Microsoft Word, your paper must be 1,000 (+/- 5%) words, including title, headings, and footnotes. Footnotes should be used for citations, but little else. If something is important, incorporate it into the body of your paper. Substantive footnotes should be eliminated, or at least limited to only those essential details that cannot be incorporated into the body of your paper. Before you submit your final paper, calculate the word count and **state the word count on the first line of your paper before the title**.

I encourage you to pursue publication of your paper, as an article, post on a third-party blog, or post on your LinkedIn account or personal blog. Keep this in mind as your develop your topic, including as you consider your target audience of readers. This area is rich with opportunities to contribute to the discussion.

Paper Deadlines

- Friday, October 11, 5:00pm - Submit Topic Proposal on Canvas (approximately 100 words) [Deadline will be extended for anyone who asks before the deadline passes.]
- Friday, October 25, 5:00pm - Submit an Alphanumeric Outline, Proposed Title, and Resources to be Cited (no more than 250 words, not counting resources)
- Friday, November 8, 5:00pm - Final Paper Due on Canvas

Alphanumeric Outline: The purpose of creating an outline is to organize your ideas. Before creating your outline, review this example:
https://owl.purdue.edu/owl/general_writing/the_writing_process/developing_an_outline/documents/20081113013048_544.pdf
For more on why to create an outline, review this page:
https://owl.purdue.edu/owl/general_writing/the_writing_process/developing_an_outline/how_to_outline.html

Paper Grading Rubric

- **Quality of Ideas** - Range and depth of argument; logic of argument; quality of original thought; appropriate sense of complexity of the topic; appropriate awareness of opposing views.
- **Mechanics** - Grammatically correct sentences; absence of comma splices, run-ons, fragments; absence of usage and grammatical errors; accurate spelling; careful proofreading; attractive and appropriate format; timely submission; compliance with all instructions in syllabus.
- **Organization & Development** - Clarity of thesis statement; topic sentences; logical and clear arrangement of ideas; effective use of transitions; unity and coherence of paragraphs; good development of ideas through supporting detail and evidence.
- **Clarity & Style** - Ease of readability; appropriate voice, tone, and style for assignment; clarity of sentence structure; gracefulness of sentence structure; appropriate variety and maturity of sentence structure.

Course Project:

Students will work in teams of three to identify a relevant, real-world challenge in the area of law, regulation, and ethics of artificial intelligence and propose a possible solution or pathway to improving beyond the status quo. Student teams will workshop their ideas during a class meeting. Student teams will present their project at the end of the term and submit a case study describing the problem, presenting their proposal, and providing evidence of the efficacy and viability of their proposal, as demonstrated by their own work and the work of others.

Team Final Project Presentations

During the last class meeting, each team will do a 10-minute presentation and demo of their team final project, which will be followed by a question and answer period. Your time must be approximately equally distributed among team members. We will further discuss the requirements for the final presentation in class.

Presentation slides must be done in Google Slides. Your final presentation deck must be finalized and shared with the class through Canvas by **5pm Wednesday, November 27**.

Project Presentation Grading Rubric

- **Organization & Development** (30%) - Effective title; effective slides (not text heavy; text and graphics support message; clean and professional looking; high image quality); clarity of thesis statement; logical and clear arrangement of ideas; effective use of transitions; good development of ideas through supporting detail and evidence.
- **Mechanics** (30%) - Speakers well-rehearsed; speech well-paced; no “dead air;” no “uhm,” “so,” “like,” “you know” or other verbal tics; not reading slides; not reading from notes; speaker engages audience through vocal tone range and eye contact; no spelling or grammatical errors on slides; compliance with all technical requirements (e.g., timing).
- **Clarity & Style** (20%) - Ease of comprehension; appropriate voice, tone, and style for audience; to the point; strong opening; strong closing.

- **Quality of Ideas** (20%) - Quality of original thought; appropriate sense of complexity of the topic; engaging content.

Class 1 - Introduction

- Laura Traldi, *Why technology needs ethics. In conversation with Luciano Floridi*, Design@Large (Oct. 10, 2018), http://www.designatlarge.it/luciano-floridi-technology-needs-ethics/?lang=en
- Introduction (p. 1-13), Chapter 1 (p. 17-28), and Chapter 2 (p. 29-57) of: Gillian K. Hadfield, *Rules for a Flat World: Why Humans Invented Law and How to Reinvent It for a Complex Global Economy* (Oxford: Oxford University Press, 2017), available for no charge to Northwestern students as an e-book through ProQuest Ebook Central: https://search.library.northwestern.edu/permalink/f/5c25nc/01NWU_ALMA51736106450002441

In-class exercise: In addition to being prepared to discuss the assigned readings, be prepared to discuss the following:

- Of the topics identified above to be discussed in this course, which are of most interest to you? Why?
- Which topics not listed should be on the list? Why?
- Which topics in this subject area do you think are most important? Why?

Week 2 - AI Governance Agenda; Legal Reasoning and Computation

- Cath C. (2018) *Governing artificial intelligence: ethical, legal and technical opportunities and challenges*. Phil. Trans. R. Soc. A 376: 20180080. http://dx.doi.org/10.1098/rsta.2018.0080
- Livermore, Michael A., *Rule by Rules* (May 13, 2019). Available at SSRN: https://ssrn.com/abstract=3387701
- Katz DM, Bommarito MJ, II, Blackman J (2017) *A general approach for predicting the behavior of the Supreme Court of the United States*. PLoS ONE 12(4): e0174698. https://doi.org/10.1371/journal.pone.0174698

Week 3 - attending "Regulating Big Tech?" Talk at Northwestern Law School

- Andrew Burt, *How will the GDPR impact machine learning?*, O'Reilly (May 16, 2018), https://www.oreilly.com/ideas/how-will-the-gdpr-impact-machine-learning
- Eline Chivot and Daniel Castro, *The EU Needs to Reform the GDPR To Remain Competitive in the Algorithmic Economy*, Center for Data Innovation (May 13, 2019), https://www.datainnovation.org/2019/05/the-eu-needs-to-reform-the-gdpr-to-remain-competitive-in-the-algorithmic-economy/
- Maria Korolov, *California Consumer Privacy Act (CCPA): What you need to know to be compliant*, CSO Online (Oct. 4, 2019), https://www.csoonline.com/article/3292578/california-consumer-privacy-act-what-you-need-to-know-to-be-compliant.html

- Paul Friedrich Nemitz, *Constitutional Democracy and Technology in the age of Artificial Intelligence* (August 18, 2018). Royal Society Philosophical Transactions A. Available at SSRN: https://ssrn.com/abstract=3234336 (publication copy available on Canvas)
- **Before 5pm on Monday, October 14**, read the assignments above and write a short post on the Canvas discussion board address these three points:
    - Do the GDPR and CCPA get this right? Why or why not?
    - How can we balance individual rights such as privacy and freedom from discrimination with the opportunities to innovate and improve society?
    - What one question are you prepared to ask the panel during the talk on Monday evening?
- Also **before 5pm on Monday, October 14**: Read and comment on the posts of at least two other classmates.

Week 4 - Mitigating Bias in Machine Learning; Overview of Law of Artificial Intelligence

- Mohsen Abbasi, Sorelle A. Friedler, Carlos Scheidegger, and Suresh Venkatasubramanian, *Fairness in representation: quantifying stereotyping as a representational harm* (Jan. 28, 2019), https://arxiv.org/abs/1901.09565 (available on canvas)
- Woodward Barfield, *Towards a law of artificial intelligence*, *in* Research Handbook on the Law of Artificial Intelligence (Woodward Barfield and Ugo Pagallo eds., 2018) (available on canvas)
- Prepare for in-class discussion on team project topics and forming teams For project ideas, consider:
    - Creating a framework for evaluating AI legal technology used to deliver legal services (We will read more about this in class soon. For an introduction, see: https://www.legaltechlever.com/2018/09/training-lawyers-assess-artificial-intelligence-computational-technologies/.)
    - Building the ANN described in Livermore's "Rule by Rules" and assessing this approach
    - Demonstrating other applications of code operating as law
    - Building something called for in NSF Program on Fairness in Artificial Intelligence in Collaboration with Amazon (FAI): https://www.nsf.gov/pubs/2019/nsf19571/nsf19571.htm
    - Tackling another technical challenge at the intersection of law and technology

Week 5 - Bias, Fairness, Accountability, and Transparency (CLASS MEETS ON 10/30)

- Joy Buolamwini, Timnit Gebru, *Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification* (2018), http://proceedings.mlr.press/v81/buolamwini18a/buolamwini18a.pdf
- Watch 02:50 to 53:07 of: Kate Crawford, *AI Now: Social and Political Questions for Artificial Intelligence*, University of Washington (Mar. 6, 2018), https://www.youtube.com/watch?v=a2IT7gWBfaE&feature=youtu.be
- In-Class Exercise: Project teams create and present their project plan.