The Age of AI: The Emerging Regulatory Landscape Around the World
Speakers

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Overview

• Introduction

• National Strategies

• Data Protection/Transparency

• Autonomous Vehicles

• Jurisdiction-Specific Topics
Quiz

Introduction to Artificial Intelligence (AI)

What is AI?

“The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.” (Oxford Dictionary)

• Machine Learning: one approach to creating intelligent machines – ability to "learn" with data, without being explicitly programmed.

• Deep Learning: type of machine learning approach that uses deep “neural networks”
National Strategies
Canada

• Pan-Canadian Artificial Intelligence Strategy:
  - First National Strategy on AI in the world
  - Focused on research and talent
  - March 2017: 2017 Budget of CA$125 million (about US$93.3 million)

• Strategy intended to further build on Canada’s AI research-based ecosystem by pursuing four major goals:
  - Increase artificial intelligence researchers and skilled graduates
  - Establish interconnected nodes of scientific excellence (Edmonton, Montreal, and Toronto)
  - Develop global thought leadership (economic, ethical, policy, and legal implications of advances in artificial intelligence)
  - Support a national research community on artificial intelligence
Canada

• **Concerns & Criticisms:**
  • Lack of a regulatory framework to deal with AI-related problems and challenges.
    • More recently: Advisory Council on AI
  • Canada is falling behind in respect to demand and actually adopting or commercializing the technology
    • $230 million for AI-Powered Supply Chains Supercluster (SCALE.AI)

Artificial Intelligence. Photo by Flickr user 6eo tech. Jan. 26, 2019. Used under Creative Commons license, https://creativecommons.org/licenses/by/2.0.
Germany

- Complete AI Strategy published in November 2018
- **Until 2025:** investment of €3 billion (€500 million by 2023)

**Main Priorities:**
- Invest in research
- Transfer research findings
- Develop int’l/European frameworks for AI in labor market
- Use AI in public administration
- Make data available + usable
- Revise legal framework if necessary
- Set standards
- Network + engage in dialogue

**Criticism:**
- criticized as “vague” + in need of “substantial further development” by German Commission of Experts for Research and Innovation (EFI)

→ implementation plan needed
“European Approach to AI” (3 pillars):

• Staying ahead of technological developments + encouraging uptake by public + private sectors
  • annual investment in AI is increased by 70%

• Preparing for socio-economic changes brought about by AI
  • Support + provide training + education

• Ensuring an appropriate ethical and legal framework
  • GDPR
  • Ethics Guidelines for Trustworthy AI
France

- CNIL Report (Nat’l Commission on Computer Technologies and Civil Liberties) – December 2017
- Villani report – March 2018

  - Issues discussed in both reports include:
    - impact of AI on human free will
    - inclusion of bias in AI
    - benefits of big data vs. protecting privacy
    - The “black box” problem
    - Implementing ethics in AI
    - continued human control over AI
    - Cyborg future
    - ensuring that everyone can benefit from AI
France

• **Suggestions:**
  
  • That AI development be guided by principles of loyalty (faithfulness) and vigilance/reflexivity.
  • Creation of a national body to audit algorithms.
Long-term AI Development Plan

State Council, Next Generation Artificial Intelligence Development Plan (July 20, 2017)

- Three stages concluding in 2020, 2025, and 2030.

- “By 2030, China’s AI theories, technologies, and applications would achieve world-leading levels, making China the world’s primary AI innovation center. AI legal, ethical, and policy systems would be further improved.”

- “Guarantee Measures:” regulatory and ethical frameworks; tax incentives for AI enterprises; technical standards; intellectual property protection.
China

• Three-Year Action Plan (2018–2020)

• Focus fields for 2018–2020:
  
  • intelligent network vehicles
  • intelligent service robots
  • intelligent unmanned aerial vehicles
  • medical imaging diagnosis systems
  • video image identification systems
  • Facial Recognition
    “By 2020, the effective detection rate of facial recognition in complex dynamic scenes should exceed 97%, and the correct recognition rate should exceed 90%, with support for recognition of facial features of people from different regions.”
  • intelligent voice interactive systems
  • intelligent translation systems
  • smart home products
Data Protection/Transparency
European Union

- General Data Protection Regulation (GDPR) (May 2018)

  Art. 22 (Automated individual decision-making)
  “The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her.”

- Solely
  - totally automated + no human review

- Legal or similarly significant effects
  - decision affects a person’s legal status or rights
  - something that has equivalent impact on individual’s circumstances, behavior, choices, or leads to exclusion of/discrimination against individual
  - Examples: social benefits, voting, online credit application, university admissions

- More guidance in guidelines from WP29 (endorsed by EDPB):
Canada

• The Personal Information Protection and Electronic Documents Act (PIPEDA)
  • Federal privacy law applicable to the private sector
  • “Obtain consent to collect, use and disclose an individual’s personal information….”

• House of Commons Standing Committee on Access to Information, Privacy and Ethics:
  • Transparency: “Users have little information about how they [algorithms] work, the data they collect and how they are used.”
  • Biases: “Perpetuate prejudices or discriminatory practices.”

• Office of the Privacy Commissioner of Canada (OPC)
  • Guideline on meaningful consent
  • “Obtaining meaningful consent has become increasingly challenging in the age of big data, the Internet of Things, artificial intelligence and robotics.”
Canada

- Canada’s Digital Charter
- **May 2019: Proposals to modernize PIPEDA:**
  - Innovation, Science and Economic Development Canada
  - “Increasingly, public harms — algorithmic bias and the manipulation of individuals and groups — flow from the capture and use of personal information. **New frameworks are required for the ethical use of data.**"
  - **A duty to explain decision-making by machines:**
    “Informing individuals about the use of automated decision-making, the factors involved in the decision, and where the decision is impactful, information about the logic upon which the decision is based.”
China

- **Emerging Personal Data Protection System**
  - Criminal Law; E-Commerce Law; etc.
  - Personal Data Protection Law under consideration
  - Personal Information Security Specification (effective May 1, 2018; revision proposed Jan. 30, 2019)
    - “When a decision is made on the basis of information system automated decision-making and has significant impact on the PI subject’s rights and interests (for example, when user profiling determines personal credit and loan amounts, or in user profiling for interview screening), the PI controller should provide means for PI subjects to lodge a complaint.”

- **Data Localization:**
  - Cybersecurity Law
    Personal data and important data held by “critical information infrastructure operators” must be stored within the country.
Autonomous Vehicles
Testing of Autonomous Vehicles as of January 2019
Germany

- **2016: entry into force of amendment to Vienna Convention on Road Traffic**
  - Allowed transfer of driving tasks to vehicles

- **2017: amendment to Road Traffic Act**
  - Drivers are allowed to transfer control of vehicle to highly or fully automated driving systems
  - Amendment allowed use of these vehicles on public roads
  - Driver remains obligated to take over driving functions in certain cases
  - “Black box” in car necessary
  - Max. amount that victim is allowed to recover raised to €10 million for personal injury/death and €2 million for property damage

- **Ethics Commission on Automated and Connected Driving**
  - **2017: report published**
  - 20 ethical guidelines for programming of automated driving systems
  - Focus on safety, human dignity, personal freedom of choice, data autonomy
Belgium

- 2016 “Code of Good Practices” to guide companies and institutions, esp. with regard to security standards.

- Traffic Code was amended in 2018 to allow autonomous vehicles to be tested on Belgian roads, subject to government approval.
France

Testing on public roads allowed (subject to authorization) since Jan. 1, 2019.

Strategy:

- Progressive approach to experimenting with autonomous vehicles
- Special attention to road security and cybersecurity risks
- Close cooperation between public authorities and the car industry to develop a regulatory framework
- European cooperation

- Cooperation agreement between France, Germany and Luxembourg for testing autonomous vehicles
Canada

• Testing Highly Automated Vehicles in Canada: Guidelines for Trial Organizations

• Provinces and territories – approving and overseeing trials of automated vehicles
  • Ontario
    • Ten-year pilot program to allow testing on roads
    • Definition of “Automated Vehicle” (Level 3, 4 or 5) & “Automated System”
    • Role of the Driver – “The driver must remain in the driver’s seat of the vehicle at all times and monitor the vehicle’s operation, unless approved for driverless testing.”
    • Liability
  • Quebec
    • Bill No. 165, amending the Québec Highway Safety Code.
    • Liability: Receive compensation from the SAAQ, which in turn claims the cost of such accidents from the manufacturer, distributor, or operator responsible for the test project.
China

• National Testing Rules

Administrative Rules on Intelligent and Connected Vehicle Road Testing (Trial) (effective May 1, 2018):

• Testing Process
  • Closed-road test before being eligible for testing on public roads
  • A human driver must always sit in the driver’s seat

• Vehicle
  • Test vehicle must be able to record, store, and monitor the status of the test vehicle online, and transfer the following data in real time: (1) the control model of the test vehicle, (2) vehicle location, and (3) vehicle and acceleration speed.

• Insurance
  • The testing entity must purchase traffic accident insurance that has a coverage of no less than RMB5 million (about US$741,300) for each test vehicle, or provide an equivalent letter of guarantee.
Jurisdiction-Specific Topics
Ethical Rules for AI – European Union

• April 2019: High-Level Expert Group on Artificial Intelligence (AI HLEG) released final “Ethics Guidelines for Trustworthy Artificial Intelligence”
  • Human agency and oversight
  • Robustness and safety
  • Privacy and data governance
  • Transparency
  • Diversity, non-discrimination and fairness
  • Societal and environmental well-being
  • Accountability

• June 2019:
  • AI HLEG published policy recommendations for EU + national policymakers
  • pilot phase launched (testing of ethics guidelines by organizations)

• Until Dec. 2019: online survey to gather feedback + interviews

• Early 2020: release of revised version
Algorithmic Impact Assessment – Canada
Canada

• **Example:** Screening and processing immigration applications ("sorting mechanism")
  • Pilot project 1: visitor/temporary visas from China & India
  • Pilot project 2: humanitarian & compassionate applications/ pre-removal risk assessments

• **Guiding principles of “effective and ethical use of AI” for government services and programs:**
  • Impact of AI
  • Transparency in the use of AI
  • Meaningful explanations about AI decision-making
  • Ability to review results and challenge decisions
  • Be as open as possible by sharing source code, training data, and other relevant information, all while protecting personal information, system integration, and national security and defense
  • Provide sufficient training to government employees
Canada

• Directive on Automated Decision-Making

  • Algorithmic Impact Assessment:
    A questionnaire or tool “designed to help [federal institutions] assess and mitigate the risks associated with deploying an automated decision system.”

  • Questionnaire:
    • Impact Assessment: Does the decision made by the system include elements of discretion? What impact will the decision have on the rights or freedoms, the health and well-being, and economic interests of individuals or communities?
    • Procedural Fairness: Does the system provide an audit trail that records recommendations or decisions? Does the system enable human override of system decisions?
Responsible AI – Singapore

• Model AI Governance Framework
  • Principles for Responsible AI:
    • Decisions made by AI should be explainable, transparent, and fair
    • AI systems, robots, and decisions should be human-centric
  • Proposed AI Governance Framework
    • Internal governance structures and measures
    • Risk management in autonomous decision-making
    • Operations management
    • Customer relationship management
AI in Governance & Justice – France

• AI to assist auditing of government spending.

• AI to assist French courts:
  • Two Courts of Appeals tested predictive justice software on various appeals cases in 2017.

• Backlash: recent legislation bans the use of data to predict how specific courts or judges would decide a case.
Legal Personality – European Union

• **Feb. 2017**: European Parliament adopted legislative initiative resolution on robotics and AI.

• Among other things, it asked the European Commission to consider

  “creating a specific legal status for robots in the long run, so that at least the most sophisticated autonomous robots could be established as having the status of electronic persons….”

• A number of experts in an open letter in April 2018 called upon European Commission to ignore the Parliament’s request

• European Commission in its follow-up to the resolution did not address the issue of electronic personhood
Legal Personality – Estonia

- **March 27, 2018**: Cross-sectoral group of experts developed AI strategy

- The group is also preparing a bill:
  - Debate has partly focused on algorithmic-liability law
  - Giving algorithms a separate legal personality, similar to companies.

- Released AI strategy did not adopt the proposal to grant separate legal personality to algorithms – instead followed the approach of the European Union:

  “The European Union has proposed a framework for the implementation of responsible artificial intelligence. We want to build on the EU framework, not to start creating and arguing for it ourselves.”
Law Library Resources on AI


- **Global Legal Monitor Updates on AI:** [http://www.loc.gov/law/foreign-news/?glm_s=%22artificial%20intelligence%22&glm_topic=&glm_jurisdiction=&glm_author=&glm_date_after=&glm_date_before=&s=%2B%2B](http://www.loc.gov/law/foreign-news/?glm_s=%22artificial%20intelligence%22&glm_topic=&glm_jurisdiction=&glm_author=&glm_date_after=&glm_date_before=&s=%2B%2B)
Thank you!

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