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The Nexus Between Artificial Intelligence and the Law

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Overview

- **Artificial Intelligence (“AI”) in use today**
- **Relevance to both criminal/civil legal issues**
- **Use growing exponentially**
- **Raises practical as well as theoretical issues**
 - Practical:
 - (1) How is it being used?
 - (2) In criminal proceedings, does AI usage raise search and seizure, due process, or confrontation clause issues?
 - (3) AI enabling new and different crimes
 - How is responsibility allocated?
 - (4) In civil proceedings, how is it coming up?
 - Does it create new liability issues or eliminate issues?
 - Use of algorithms resulting in bias questions
 - (5) Privacy issues
 - Theoretical:
 - (1) Do humans add something unique that we do not want to lose in investigating, litigating and judging?
 - (2) Can AI be programmed to understand the concepts of “fairness” and “justice”?

AI Utilization

▪ In 2019: Actual utilization

- Criminal justice system
 - Law enforcement:
 - Patrolling
 - Monitoring (behavior/object detection)
 - Investigation:
 - Evidence repositories
 - Predictive profiling
 - DNA identification
 - Pattern analysis (e.g., to identify/understand complex financial transactions/money laundering)
 - Voice/facial/gait recognition
 - Document review
 - Pre-trial release, sentencing and incarceration:
 - Predictions of compliance with release conditions
 - Predictions of recidivism
 - Penal housing determinations

AI Utilization (cont.)

▪ In 2019: Actual utilization

- Civil
 - Torts
 - Intellectual Property:
 - Patent
 - Copyright
 - Trademark
 - Financial services:
 - Credit analysis
 - Lending
 - Trading (tax/RICO)
 - Employment:
 - Application sorting
 - Hiring
 - “Efficiency” transfers
 - Termination
 - §1983:
 - False arrest
 - False identification

Defining AI

- **Why AI now?**

- Increases in computational power
- Availability of enormous data sets

- **“Teaching” AI to think**

- Machine learning (large data sets)
- Neural networks

- **Narrow AI**

- Device/single purpose

- **General AI**

- Broad usage

- **AI: not just “robots”**

- Software
- Not necessarily in a single device
- May not “see it” at all/inside a computer

- **Local or distributed**

Defining AI (cont.)

- **AI: machines that learn**

- Able to exceed initial programming/to go beyond what humans taught them
- Able to make rational, reasonable decisions
 - Decisions not based on emotions/bias

- **Artificial General Intelligence**

- “Singularity”

- **Apart from the initial act of creation and goal setting, human involvement is unnecessary**

- **What AI is not:**

- Not simply a computer program instructed to accomplish a discrete task
- Not just “hi-tech” or sophisticated software

AI is Already in Use

- **AI is no longer the stuff of science fiction**
- **Deployed within the U.S., but far more use in certain parts of the world**
- **Example: China**
 - Law enforcement:
 - Use of facial recognition technology primarily for racial profiling/law enforcement purposes
 - Authorities using massive system of facial/voice/gait recognition technology to identify, track and control ethnic minorities
 - Across multiple provinces, regions
 - Use of AI by governments
 - “City Brain”:
 - Chinese company Alibaba created the “City Brain” and deployed it in city of Hangzhou
 - Uses AI to gather information, analyzes data in real time
 - Videos of roads
 - Live GPS data of vehicles
 - Uses:
 - Traffic rationalization
 - Government monitoring
 - “Social Credit” System:
 - Local governments using AI to track citizens’ behavior

AI in U.S. Today

▪ Ubiquitous in U.S. today

- Law enforcement
- Manufacturing: the Industrial Internet of Things
- Military
- Browser searching
- Smartphones
 - Siri
 - Google Translate
 - Curated news feeds
- Home devices: Amazon Echo (Alexa), Google Home, NEST
- Entertainment
 - Netflix, Pandora Radio
- Inventory stockers
- Customer service representatives
- Medical diagnostics
- Surgical robotics
- Virtual reality/stroke rehab.
- Telepresence
- Financial analysis: lending (tax audit candidates)
- Social Security Administration/benefit analysis
- Advertising
- Code writing/music creation/news article drafting

AI: More on Horizon

▪ More on the near-term horizon

- Advanced medical analytics
- Further replacement of “repetitive” jobs
- Hospitality: check in/concierge replacement, cleaning staff
- Advertising: further replacement
- Self-driving cars, buses, trains
- “Flying” taxis
- Automated delivery services
- Certain legal services (drafting documents, researching, reviewing materials)
- Fast-food restaurants (self-ordering machines/cooks/inventory)
- Volumetric telepresence
- Enhanced virtual reality environments
- Replacement of 25-40% of jobs within 15 years (Brookings Inst.)
 - Significant workplace disruption
 - Disproportionate impact on lower paid/lower skilled workers

Criminal Justice Context

- **New crimes enabled by AI:**

- Cyber attacks
- Identity theft
- Credit card fraud
- Money laundering schemes
- Drug acquisition, distribution
- Harassment

- **AI currently used in the criminal justice area:**

- Law enforcement
 - Predictive policing
 - Autonomous policing
 - Behavior detection/shoplifting
 - Identification of objects (stolen vehicles)
 - Crowd monitoring
 - Area monitoring

Criminal Justice Context (cont.)

▪ Devices as evidence repositories

- Amazon Echo, Siri
- Data resident within other home devices
- Voice recognition and interpretation
- Predictive capabilities

▪ Investigations

- Tools for identification (facial/voice recognition; DNA)

▪ Use in pre-trial release/sentencing proceedings

- Predictions of compliance with release terms
- Predictions of recidivism
- Penal housing determinations

Criminal Justice Context (cont.)

▪ Evidentiary questions

- How much insight does/should courts/parties have into software underlying AI
- Tests of accuracy?
- Bias
- Tensions between due process/reliability issues and intellectual property rights

Criminal Justice: General Issues

▪ AI vs. humans

- AI as repository of “facts”
- “Facts” = “truth”?
- AI as a witness? AI as “truth teller”
 - Same evidence
 - Higher potential degree of accuracy: factual “truth”
 - Absence of personal motivations

▪ Issues:

- AI has human birth parents (created by humans)
- Humans determine algorithm inputs and weights
- Human actions underlying current data sets, which AI accesses
- Humans determine goals, objectives
- Human biases: built in?

Challenging Concepts of Justice

▪ Can AI mimic human-type justice?

- Should it?
- What “philosophy of punishment” does AI have?
 - Incapacitation?
 - Retribution?
 - Rehabilitation?
 - Mitigating factors?
- Is justice “objective”? Will/should AI view justice and fairness as the same thing?
- AI’s use in sentencing implicates theories of justice/fairness
- Can AI understand changing human notions of justice
 - Learn
 - Predict
- Why would a machine necessarily have the same notions of right and wrong?

Criminal Justice: General Issues (cont.)

▪ Precedent evolving

- Public/private balance
- Human choices: AI has initial programming
 - Whether a machine “listens”, how long, for what
 - Whether it records
 - What it deems a pattern – and how it interprets typicality
 - Two instances as random or two instances as a pattern?
 - Whether the algorithm produces accurate output/answers

▪ How do we test all of this?

- Accuracy
- Reliability
- Need information on design, data sets
- Balance between proprietary rights and due process

Investigations: Identification

- **Profiling/DNA identification**

- Access to broad databases
- Increased chances of positive identification
- Decreased chances of error rate (?)

- **Issues with biased data sets?**

- Historical data sets

- **Biased/unfair “array”?**

- **How to handle “array” challenges when the sample set is vast?**

Investigation: Pattern Analysis

▪ Document review/financial pattern recognition

- Reduction in human reviewers
- Reduction in error rate (?)
- Predictive results
 - Based on context
 - Based on perceived patterns
- Evidentiary issues
 - Allow into evidence: “machine found patterns”?
 - Too suggestive of “correct” answer?

Investigation: Voice/Facial Recognition

- **How used?**

- Voice recordings
- Photographs
- Large databases

- **In use (e.g., China)**

- **Recognition beyond what humans can do**

- Face in crowd
- Voice separated from cacophony
- Traditional concepts of “fairness”?

- **Evidentiary issues:**

- Allow into evidence: “machine identified it”
- Would this be too suggestive of “correct” answer?

Investigations: 4th Am. Issues for Home AI?

- **Expectation of privacy (?)**
- **Particular search/seizure concerns (?)**
 - Smart devices collect/store information
 - Information can be used for:
 - Location monitoring: where you are or have been
 - Appointments: whether they are made and kept
 - Browsing and purchasing history: not only what you actually bought, but what you viewed/wanted, what you decided not to purchase
 - Recollection, prediction, contextualization
 - Pattern recognition and variations
 - Voice interpretations: emotion, stress, anxiety
- **Judicially authorized search warrants: would they alleviate concerns?**
- **Increased capabilities of these devices in the coming years will present new and complex challenges and concerns**

Criminal Investigations: Home AI

▪ Evidence repositories

- What's on these devices anyway?
- Who has access to cameras/recording for face/voice/gait recognition?
 - Governmental entities
 - Use of home computer cameras
- Who controls what's recorded/stored?
 - Duration
- Who can access it?
- Third parties listening to Alexa/Alexa listening to you
 - “Hearing” a crime
- Is data on these devices really any different from data resident on a cellphone?
(e.g., text or documents within the home)

Investigations: 4th Am. Issues for Home AI (cont.)

▪ Useful case law already exists

- Robust body of case law regarding the **search and seizure** of cell phones ([Riley](#))
 - Emails
 - Texts
 - Voicemails
- Big question: are these home devices/Alexas different?
 - Similar to an interactive storage device
 - Cell phones can do what Alexas can do

▪ Recent cases:

- Two relatively recent cases
 - 2017: Amazon Echo device in home of murder suspect; sought by law enforcement
 - Amazon opposed production
 - Ultimately, the suspect agreed to turn over (Amazon withdrew its objection)
 - 2018: Double murder case; similar information sought
- Reasonable expectation of privacy
- Warrant typically may be needed; but with judicially authorized warrant (or voluntary disclosure) accessible

▪ In sum: 4th Amendment has not prevented access

Legal Proceedings: 5th Amendment

- AI's use in criminal proceedings
- 5th Amendment:
 - Due Process
 - Self incrimination
- Does required (versus voluntary) production of (Alexa's) recordings of voice commands violate protections against self incrimination?
 - Testimonial?
- Implications of AI in criminal proceedings today
 - Proprietary software
 - Predictions of danger
 - Predictions of recidivism
 - Predictions of effective terms for supervision
- Insight into algorithms and data sets: Due Process

Criminal Justice: Sentencing/Incarceration

- **Utilization in connection with sentencing**

- **Predictions of recidivism**

- **Loomis case**

- Defendant fled from a police officer/auto theft
- Split sentence
- Risk assessment tool used in arriving at period of incarceration
- Proprietary software: “COMPAS”
- Predictive software
- Defendant not allowed access to underlying algorithm/data
- Due Process challenge

- **Wisconsin’s highest court**

- No Due Process violation (I would disagree)
- Court referred to study of results by New York State’s Division of Criminal Justice Service
 - “Satisfactory results”
- No insight into choices by humans of weighing of race/other characteristics

- **Penal housing determinations**

- Behavioral predictions

Criminal Justice: 6th Amendment

- **Do witnesses need to be human?**
- **AI witnesses: more accurate repository of information**
 - Better memory
 - More likely to be a “truth teller”?
 - Less likely to mis-remember/lie?
 - Less bias?
- **AI advancing: towards testimonial functionality**
 - AI may soon have testimonial capabilities beyond human percipient witnesses
- **AI as “expert” witness**
 - Example: trajectory of bullets have allowed for shooter to be in “X” location
 - Is it more likely that A shot B first?
- **Confrontation Clause issues?**
 - Right to confront AI
 - What does “confronting AI” mean?

Criminal Justice: 6th Amendment (cont.)

- **Key Confrontation Clause issue:**

- Can AI be cross-examined?
 - Yes, it can be queried
 - Less prone towards confusion, bullying

- **What is the real purpose of cross examination?**

- Attempt to test veracity/accuracy of testimony
- Attempt to test credibility
- Attempt to reveal bias
- Capability for this: on the horizon
- AI will be able to provide the basis for answers
 - Opinions will be able to be explored

- **Who wins? Who loses?**

- Do we lose or win if AI is a witness?
- What is special about a human witness?
- Do the qualities that make a human witness “special” add to truth telling?
 - Sympathy garnering?
 - Or other emotional impact?
- Don’t we want the fact finder to make decisions based on **facts** not **emotions**?

- **Ongoing role for skilled cross examination**

Civil: Intellectual Property

- Patent/copyright/trademark areas
- Questions of agency in both
 - “Who” is the actor
- Protecting AI as an invention (patent), AI’s works (copyright)
- Protecting avatars/virtual reality environments (trademark?)
- IP claims
 - Infringement (direct/contributory)
 - Not patentable (Alice, §101 challenges)
 - Markmans

Civil: Intellectual Property – Patent

- **Used today to make creative works**

- Music
- Books
- Art

- **Agency**

- Authorship
- Ownership
- Distributed environment

- **Authorship and ownership**

- Who authors and who owns machine-created works?
 - What is the “origin” of a machine’s idea?
 - Who is legally responsible for a machine’s infringement of the property rights of a human?
- Under current law, for a work to be copyrightable, it must be created by a human
- Work-for-hire doctrine

- **Use of large data sets**

- Copyrightable?
- Infringement claims

Civil: Intellectual Property – Patent

- **Thousands of patents**

- Challenges on the horizon

- **Alice/§101 issues**

- AI's use of algorithms
 - Algorithms protected?
 - Protection of data sets

- **Markman Hearings**

- **Broad language**

- Industry standards (?)

Civil: Tort Issues

- **General: how to determine responsible actor**

- Allocation of responsibility

- **Medical malpractice claims**

- Increasing use in healthcare diagnostics
 - Diagnostics generally
 - Radiology
 - Use in rehab.

- **Reduction in human error (?)**

- Reduction in intuition?
 - E.g., “unusual tumors”?

- **Delivery of healthcare**

- Dispensing medications
 - Nursing
 - Surgery
 - Implants

- **Automated machines (cars, delivery mechanisms, manufacturing)**

- Liability issues: responsibility with [manufacturer] [technology company]

Civil: Privacy Claims

- Use of data
- Targeting

Civil: Algorithms

▪ Use of data sets

- Based on historical bias
- Entrenching bias?

▪ Inputs/weightings of algorithms

- Who chooses

▪ Transparency/accountability

- Making accessible to “mere mortals”

Civil: §1983 Claims

- **Use of algorithms to predict behavior/identity**

- **§1983: Claims re unlawful state action**

- False identification
- False arrest
- Unreasonable state action

- **Division of responsibilities**

- Data set at fault?
- Algorithm at fault?
- Police officer able to check/accountability

- **Qualified immunity (?)**

Civil: Employment

- AI assisting with HR process, also taking over certain jobs
- Union issues
 - Automation/job elimination
 - AI has already changed manufacturing
 - Other fields are next
- Hiring issues: used to find “appropriate” candidates, weed out others
 - Algorithms/human inputs and weights
 - Databases/historical
 - Status issues: race, age, gender, disability
- AI as a product of human creation
- Automated efficiency analysis: transfers, job changes, job elimination
 - Based on data from operations plus data from employers
 - Discrimination claims
- Automated firing/termination
 - Human role remains
 - Suggested efficiencies
 - Human empathy vs. machine vs. stockholders