

Understanding Bias, Privacy and Legality Associated with AI

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DFW Data Science

Plano, Texas

October 7, 2019

Disclaimer

I am a lawyer

But I am not *your* lawyer

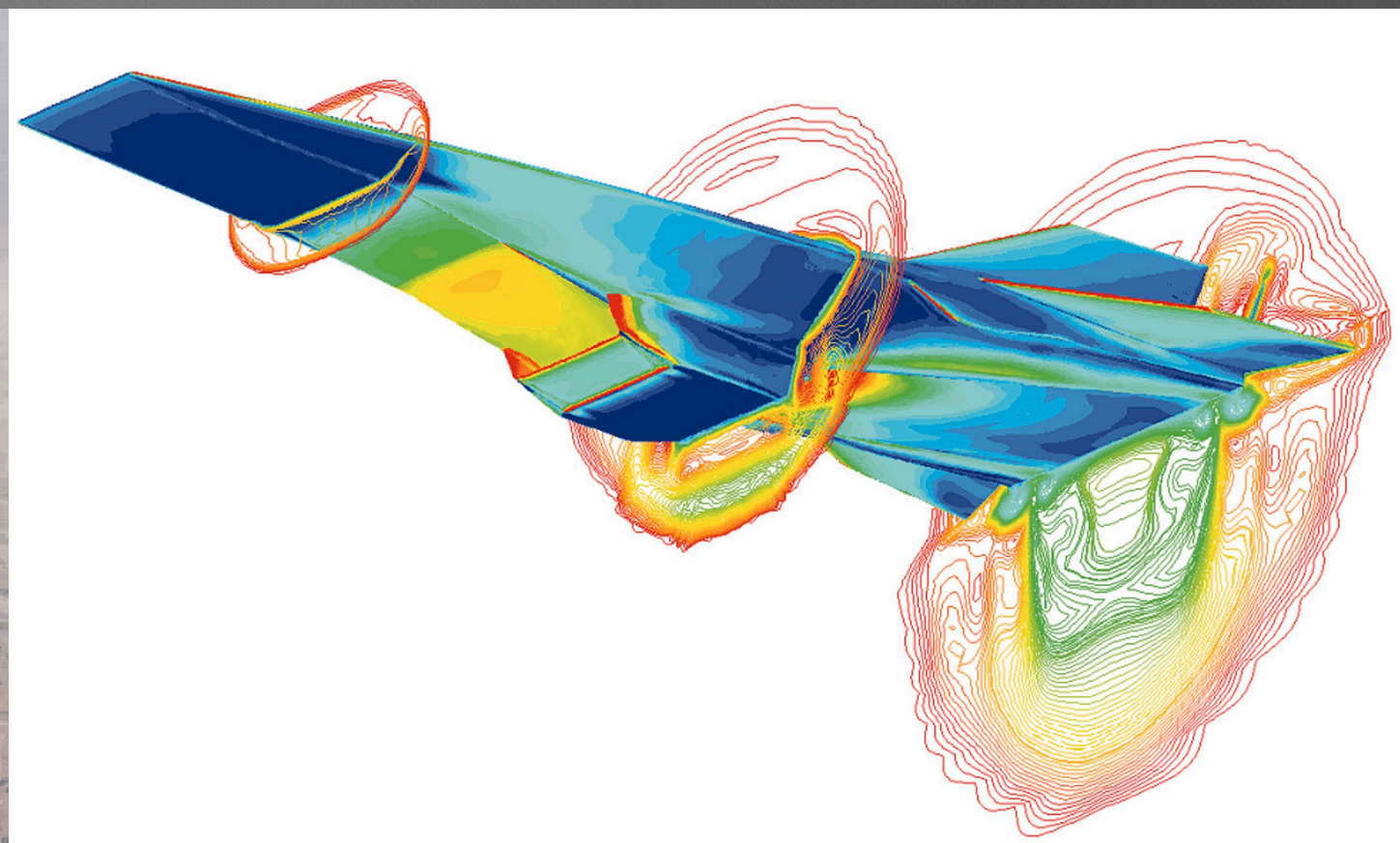
So this is *not* legal advice

Because if it was, it would be followed by a bill

**BTW, I'm also a data
scientist and AI engineer**

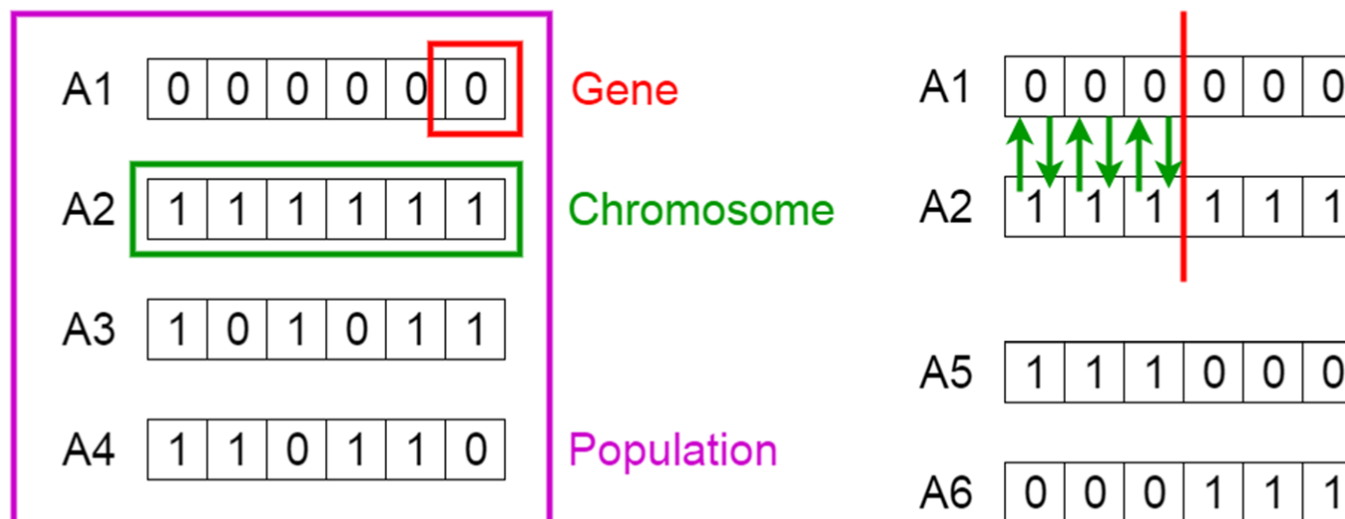
(aka a Legal Engineer)

Where I Came From...



Where I got started with AI

Genetic Algorithms



Transition to the Legal Field



US 20020143700A1

(19) **United States**

(12) **Patent Application Publication**
Wu

(10) **Pub. No.: US 2002/0143700 A1**

(43) **Pub. Date: Oct. 3, 2002**

(54) **METHOD AND APPARATUS FOR
INDIVIDUAL-CENTRIC USE OF THE
INTERNET**

(57) **ABSTRACT**

(76) **Inventor: Guangdian Guordon Wu, Houston,**

An individual-centric Internet is provided with a personal base process on a computer system. The computer system is equipped with multiple nodes that are interconnected to facilitate the communication between the nodes. The personal base service includes a personal base instance that is typically in software on at least one of the nodes of the computer system, such as a network. The personal base instance is designed to communicate with a user by any digital or analog device, such as a telephone, personal computer, personal digital assistant, or the like. A personal base server is instantiated on at least one of the nodes on the computer system and is in operative communication with the personal base instance. The personal base server is used to communicate with other personal bases or other nodes on the computer system or network in order to insulate the user from other elements of the computer system.

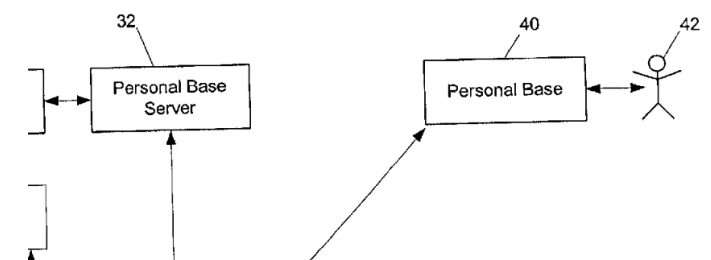
F 17/60
0; 705/1

Ownership of Data



"No, it's MY data!"

4/00



Using NLP and ML in Law

■ Ashcroft v. Iqbal, 556 U.S. 662, 129 S. Ct. 1937, 173 L. Ed. 2d 868, 77 U.S.L.W. 4387 (2009), Court Opinion

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POINTS OF LAW

pleading must contain a "short and plain statement of the claim showing that the pleader is [*678] entitled to relief." As the Court held in *Twombly*, 550 U. S. 544, the pleading standard **Rule 8** announces does not require "detailed factual allegations," but it demands more than an unadorned, the-defendant-unlawfully-harmed-me accusation. *Id.*, at 555 (citing *Papasan v. Allain*, 478 U.S. 265, 286 (1986)). A pleading that offers "labels and conclusions" or "a formulaic recitation of the elements of a cause of action will not do." 550 U. S., at 555. Nor does a complaint suffice if it tenders "naked assertion[s]" devoid of "further factual enhancement." *Id.*, at 557.

To survive a motion to dismiss, a complaint must contain sufficient factual matter, accepted as true, to "state a claim to relief that is plausible on its face." *Id.*, at 570. A claim has facial plausibility when the plaintiff pleads factual content that allows the court to draw the reasonable inference that the defendant is liable for the misconduct alleged. *Id.*, at 556. The plausibility standard is not akin to a "probability requirement," but it asks for more than a sheer possibility that a defendant has acted unlawfully. *Ibid.* Where a complaint pleads facts that are "merely consistent with" a defendant's liability, it "stops short of the line between possibility and plausibility of 'entitlement to relief.'" *Id.*, at 557 (brackets omitted).

Two working principles underlie our decision in *Twombly*. First, the tenet that a court must accept as true all of the allegations contained in a complaint is inapplicable to legal conclusions. Threadbare recitals of the elements of a cause of action, supported by mere conclusory statements, do not suffice. *Id.*, at 555 (Although for the purposes of a motion to dismiss we must take all of the factual allegations in the complaint as true, we "are not bound to accept as true a legal conclusion couched as a factual allegation" (internal quotation marks omitted)). **Rule 8** marks a notable and generous departure from the hypertechnical, code-pleading regime of a prior era, but it does not unlock the doors of discovery for [*679] a plaintiff armed with nothing more than conclusions. Second, only a complaint that states a plausible claim for relief survives a motion to dismiss. *Id.*, at 556. Determining whether a complaint states a plausible claim for relief will, as the Court of Appeals observed, be a context-specific task that requires the reviewing court to draw on its judicial experience and common sense. 490 F. 3d, at 157-158. But where the well-pleaded facts do not permit the court to infer more than the mere possibility of misconduct, the complaint has alleged — but it has not "show[n]" — "that the pleader is entitled to relief." Fed. Rule Civ. Proc. 8(a)(2).

In keeping with these principles a court considering a motion to dismiss can choose to begin by identifying pleadings that, because they are no more than conclusions, are not entitled to the assumption of truth. While legal conclusions can provide the framework of

▶ ■ Ashcroft v. Iqbal, 556 U.S. 662, 129 S. Ct. 1937, 173 L. Ed. 2d 868, 77 U.S.L.W. 4387 (2009), Court Opinion

▶ ■ Bell Atl. Corp. v. Twombly, 550 U.S. 544, 127 S. Ct. 1955, 167 L. Ed. 2d 929, 2007 ILRC 1829, 23 ILRD 11, 41 CR 567, 75 U.S.L.W. 4337 (2007), Court Opinion

▼ ■ Ass'n of Cleveland Firefighters v. City of Cleveland, 502 F.3d 545, 26 IER Cases 1105 (6th Cir. 2007), Court Opinion

The Supreme Court has recently clarified the law with respect to what a plaintiff must plead in order to survive a Rule 12(b)(6) motion. *Bell Atl. Corp. v. Twombly*, ___ U.S. ___, 127 S.Ct. 1955, 167 L.Ed.2d 929 (2007). The Court stated that "a plaintiff's obligation to provide the grounds of his entitlement to relief requires more than labels and conclusions, and a formulaic recitation of the elements of a cause of action will not do." *Id.* at 1964-65 (citations and quotation marks omitted). Additionally, the Court emphasized that even though a complaint need not contain "detailed" factual allegations, its "[f]actual allegations must be enough to raise a right to relief above the speculative level on the assumption that all the allegations in the complaint are true." *Id.* (internal citation and quotation marks omitted).

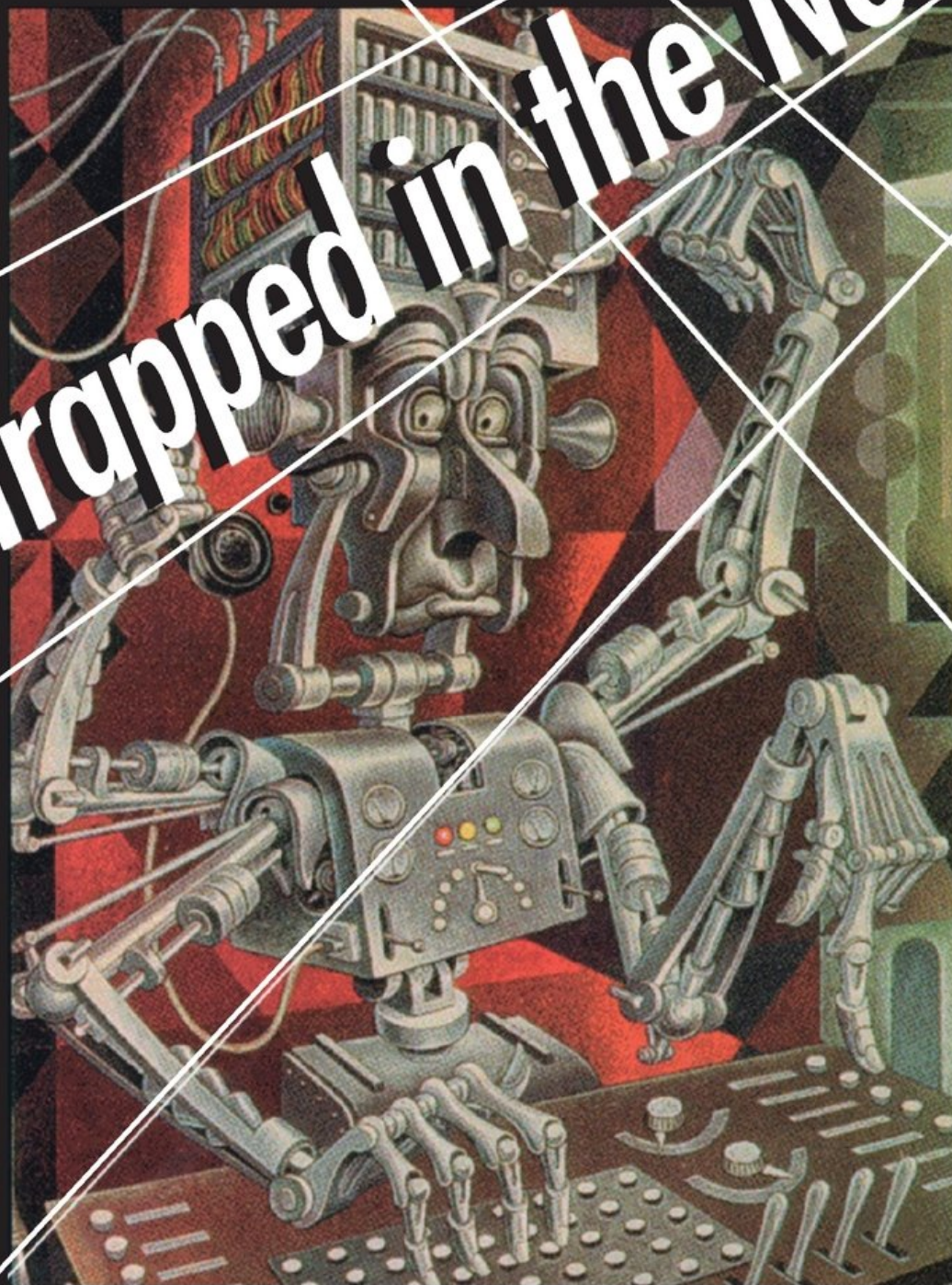
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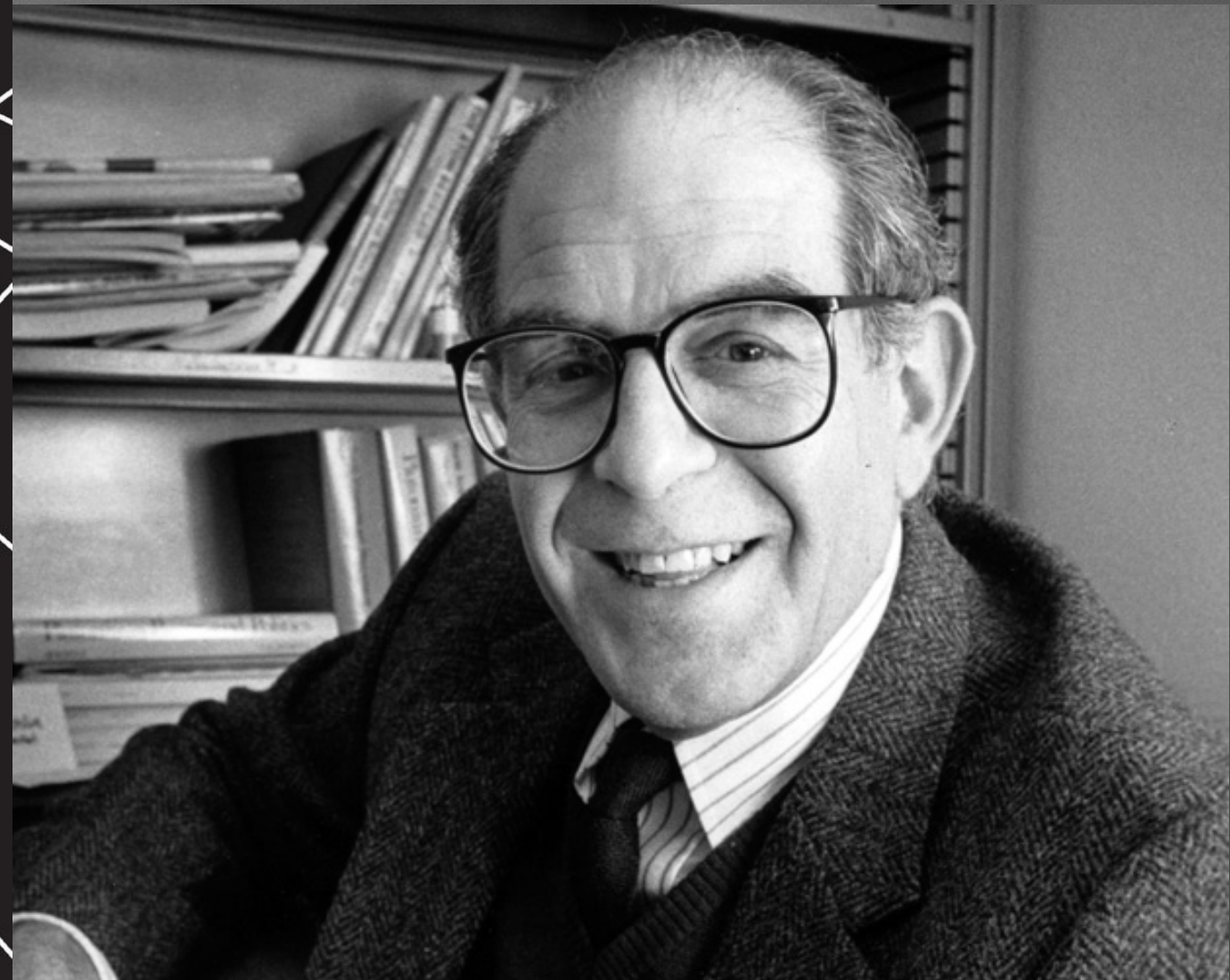
Information
Litigation
Regulatory
tax
Privilege
evidence
Justice
raw data
Income
Litigation Support
Corporate
Law
agreement
Judge
act
exemption
Security
Victim
Intent
Metadata
Discovery

Trapped in the Net



**The Unanticipated Consequences
of Computerization**

GENE I. ROCHLIN



"This dark, exhilarating work is the most important book of its generation about the relationship between law, cyberspace and social organization."



AND OTHER LAWS OF CYBERSPACE

LAWRENCE LESSIG



Law

Behavioural norms and standards created and enforced by some recognised social authority.

Social Norms

Behavioural norms and standards created and enforced through social expectation and peer pressure.

The Market

Price setting on a market biases the behaviour of suppliers and demanders. Profit/loss disciplines behaviour.



Architecture

Some physical, social, technological structure that permits and limits certain forms of behaviour

Next Generation Law: Data Driven Governance and Accountability Based Regulatory Systems in the West, and Social Credit Regimes in China.

Larry Catá Backer¹

Abstract: Data driven governance systems are transforming the regulatory landscape of both states and other governance institutions. Grounded in principles of accountability and embedded in incentive-based systems for reducing risk and managing behaviors through mechanisms of choice and markets, these governance systems may well reshape the way states and other governance organs are constituted and operate. This short essay has two objectives. The first is to examine the challenges that social credit, ratings or assessment systems pose for effective implementation. Social Credit itself refers generally to a new mode of data driven governance through which data analytics are used to create and operate algorithms that provide a basis for rewards and punishment for targeted behaviors. More specifically, social credit references the specific project of the Chinese state to create a comprehensive legal and regulatory mechanism grounded in data driven metrics that they have named "social credit." To that end, Section II considers first the difficulties of separating the role of social credit as a set of techniques and as a means of advancing ideological principles and objectives, in the context of Chinese efforts. The second is to consider the resonances of China's social credit initiatives in the West. Section III then examines some of the ways in which Western efforts at social credit institutions have sought to meet similar challenges. The section first explores the context of social credit systems in the West, and its operationalization, principally in the private sphere and through the use of market mechanisms for behavior management. It then examines the way that social credit might be used in the West as a technique of governance and as a means of embedding international standards in domestic behavior. The essay concludes by suggesting that social credit represents the expression of new forms of governance that are possible only through the correct utilization of big data management. The shift in regulatory forms also point to significant shifts in the relationship between law, the state and government. Accountability regimes grounded in behavior standards enforced through data driven analytics may well change the focus of public law from constitution and rule of law to analytics and algorithm.

I. Introduction

About a decade ago, when the attention of influential thinking about governance was occupied elsewhere,² one might have noted a curious development in the nature of the forms of governance and its objectives within Western liberal democracies in the for of surveillance.³

Definitions

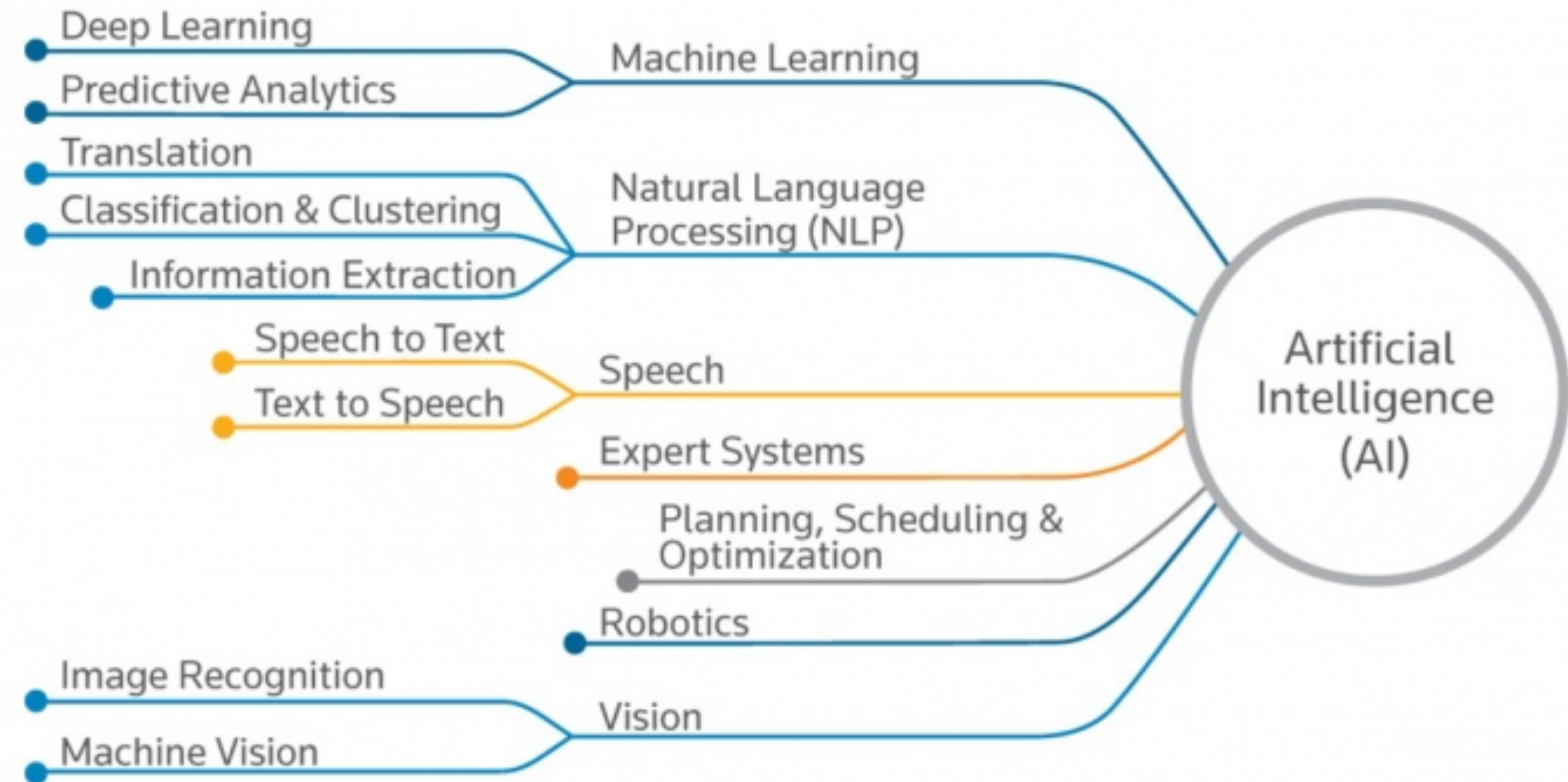
Definition of data: “factual information (such as measurements or statistics) used as a basis for reasoning, discussion, or calculation ”

– Merriam-Webster Dictionary

<https://www.merriam-webster.com/dictionary/data>

“We define AI as the study of agents that receive percepts from the environment and perform actions.”

***– Stuart J. Russell & Peter Norvig
Artificial Intelligence: A Modern Approach (Third Edition)***



<https://blogs.thompsonreuters.com>

Overview

- Agency
- Ownership
- Bias
- Privacy
- Liability



Why?

Because law is the
regulation of *actions*
between
people
within a jurisdiction

People can play many roles in
the actions
(humans, agents, companies)

Moreover

What those actions mean are **data**

What led to the actions are **data**

What transpired during the actions are **data**

Ramifications from the actions are **data**

And...

Because law is the
regulation of *actions*
between
people
within a jurisdiction

Law can regulate data

Agency

Law of Agency

- Mainly a branch of Commercial Law concerning contracts
- Key is a “fiduciary relationship” to someone else (the “principal”)
- The agent is authorized to act on behalf the principal to create legal relations with a third party
- The principal can be bound (legally) based on what the agent does
- Authority of the agent can be *actual* or *implied*

Law of Agency

- If the AI can pass the Turning Test, it can be mistaken for a human agent
- Liability of the Agent to the Third Party
- Liability of the Agent to the Principal
- Liability of the Principal to the Agent
- Duties of the Agent
- Termination of the Agency

Ownership

Ownership of Data



aka, “the Owners”

How Can They Own AI?

- Three Main Intellectual Property Laws for Data and AI
 - Patents (for the design/use of the ML models)
 - Copyrights (for the data used to train the ML models)
 - Trade Secrets (depending upon the architecture)



US005214746A

United States Patent [19]

Fogel et al.

[11] **Patent Number:** **5,214,746**[45] **Date of Patent:** **May 25, 1993**

[54] **METHOD AND APPARATUS FOR
TRAINING A NEURAL NETWORK USING
EVOLUTIONARY PROGRAMMING**

[75] **Inventors:** **David B. Fogel, San Diego; Lawrence
J. Fogel, La Jolla, both of Calif.**

[73] **Assignee:** **Orincon Corporation, San Diego,
Calif.**

[21] **Appl. No.:** **716,687**

[22] **Filed:** **Jun. 17, 1991**

[51] **Int. Cl.⁵** **G06F 15/18**

[52] **U.S. Cl.** **395/23; 395/11;
395/21**

[58] **Field of Search** **395/23, 13**

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Primary Examiner—Michael R. Fleming

Assistant Examiner—Robert W. Downs

Attorney, Agent, or Firm—Spencer, Frank & Schneider

[57] **ABSTRACT**

A method and apparatus for training neural networks using evolutionary programming. A network is adjusted to operate in a weighted configuration defined by a set of weight values and a plurality of training patterns are input to the network to generate evaluations of the training patterns as network outputs. Each evaluation is compared to a desired output to obtain a corresponding error. From all of the errors, an overall error value corresponding to the set of weight values is determined. The above steps are repeated with different weighted configurations to obtain a plurality of overall error values. Then, for each set of weight values, a score is determined by selecting error comparison values from a predetermined variable probability distribution and comparing them to the corresponding overall error value. A predetermined number of the sets of weight values determined to have the best scores are selected and copies are made. The copies are mutated by adding random numbers to their weights and the above steps

Copyright

- Covers the “expression of an idea that is fixed in a tangible media by an author in an original fashion”
- Ideas and facts are not copyrightable
- If there is only one way to express something, then it cannot be copyrighted (Doctrine of Merger)
- The selection and arrangement of facts (e.g., data) are copyrightable

Copyright

- Four types of copyrightable works:
 - Original works (e.g., code from scratch)
 - Derivative works (e.g., modified code)
 - Collective works (e.g., Wikipedia)
 - Compilation works (e.g., assembled and munged data)

Example Scenario

- Data scientist gathers pre-munged data from a third party
- ML engineer devises a neural network tailored to the task
- ML engineer uses the pre-munged data to train the NN
- Resulting model moved to production
- Company hits exit strategy
 - The model is subject to due diligence audit for violation of intellectual property rights (Representations & Warranties)

Bias

So far, bias is prevalent in...

- Hiring
- Policing
- Judicial Sentencing
- Financial Services

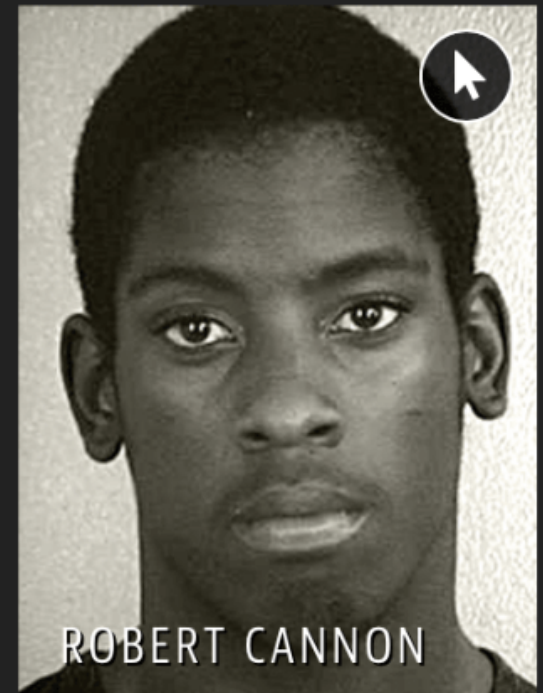
Two Shoplifting Arrests



JAMES RIVELLI

LOW RISK

3



ROBERT CANNON

MEDIUM RISK

6

After Rivelli stole from a CVS and was caught with heroin in his car, he was rated a low risk. He later shoplifted \$1,000 worth of tools from a Home Depot.

BUSINESS & ECONOMICS, RESEARCH

Mortgage algorithms perpetuate racial bias in lending, study finds

By [Public Affairs](#), UC Berkeley | NOVEMBER 13, 2018



TOP STORIES



UC now holds largest CRISPR-Cas9 patent portfolio



Ask Me Anything — Chancellor Carol Christ...



Joining forces for a better Berkeley

RELATED STORIES



Collapse of desert birds due to heat



Does being a 'superwoman'

Racial Bias in Lending

- Equal Credit Opportunity Act (ECOA)
- Fair Housing Act (FHA)

Equal Credit Opportunity Act

- The ECOA forbids credit discrimination on the basis of race, color, religion, national origin, sex, marital status, age, or whether you receive income from a public assistance program. Creditors may ask you for most of this information in certain situations, but they may not use it as a reason to deny you credit or to set the terms of your credit. They are never allowed to ask your religion. Everyone who participates in the decision to grant credit or in setting the terms of that credit, including real estate brokers who arrange financing, must comply with the ECOA.

Equal Credit Opportunity Act

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Fair Housing Act (FHA)

- The FHA forbids discrimination in all aspects of residential real-estate related transactions, including:
 - making loans to buy, build, repair, or improve a place to live;
 - selling, brokering, or appraising residential real estate; and
 - selling or renting a place to live
- The FHA also forbids discrimination based on **race, color, religion, sex, national origin, handicaps, or familial status**. That's defined as children under 18 living with a parent or legal guardian, pregnant women, and people securing custody of children under 18.

Example Scenario

- Financial services company commissions development of AI to predict probability of a non-performing loan
- Data Scientist, who doesn't know about the ECOA or FHA requirements, includes racial features in the training data
- Neural Network is designed and trained with that data
- That neural network cannot be used to determine whether that loan will be made, or the terms thereof

Privacy

<example>

Data are Used to Form a Contract

- Data used to determine what the customer (might) want
- Data leveraged to cause the customer to want something
- Data used to determine what the customer would be willing to pay
- Data used to determine if the customer would be willing to be an unpaid employee for the company

**Customer data is valuable
and often obtained for free**

**... to the customer's
detriment**

**Because the customer is
powerless to prevent it**

(That's why we set it up that way)

**Only government can
correct that imbalance**

**GDPR, CCPA,
State Breach/Notification
HIPAA, GLBA, COPPA,
CAN-SPAM, CFAA, ECPA,
TCPA, FCRA, FACTA, etc.**

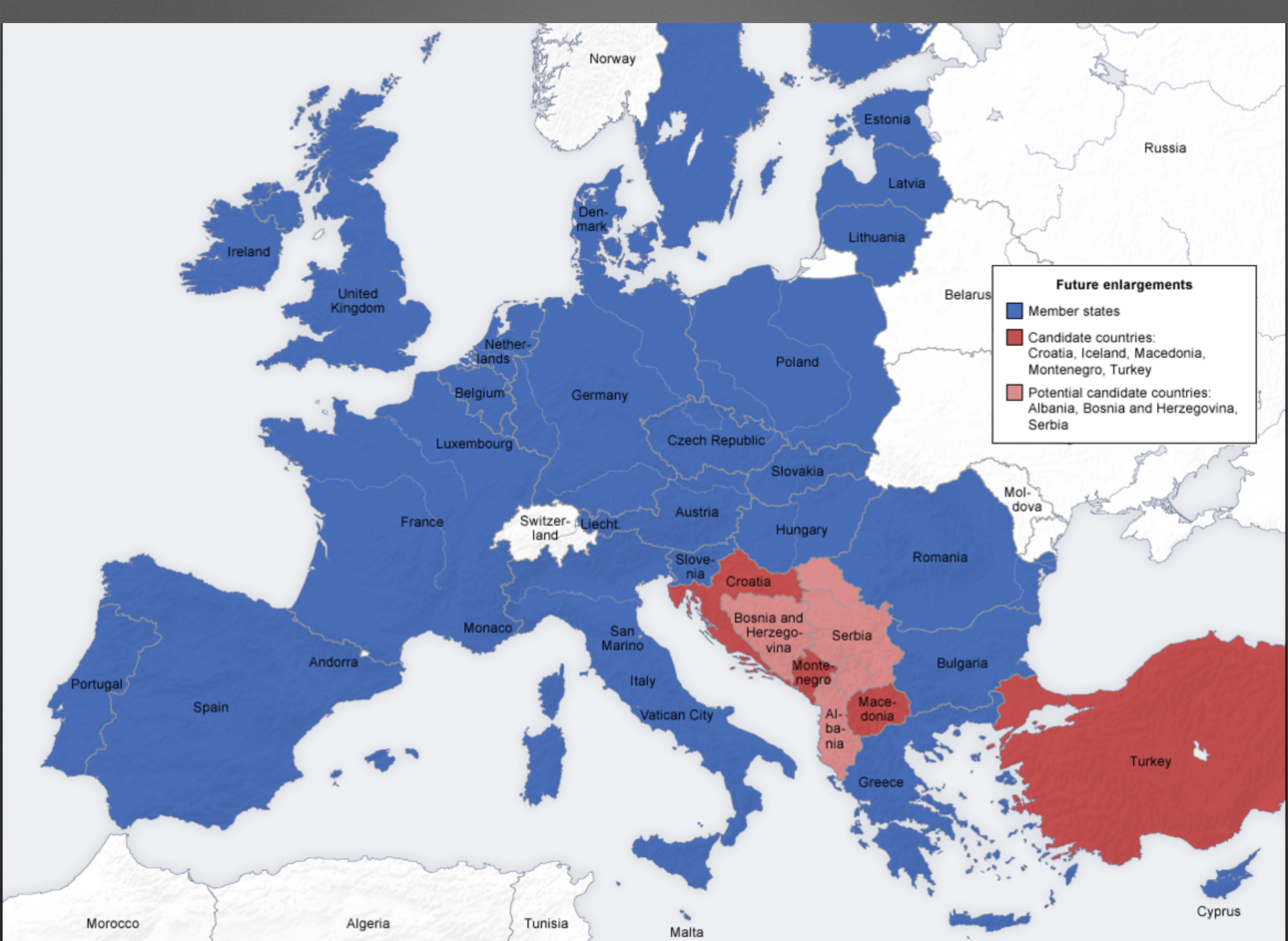
<example>

GDPR

Who Promulgated GDPR?



The EU Parliament



GDPR Overview

- Covers certain types of data...
- ... of people within the EU ...
- ... and gives those people certain rights ...
- ... that data scientists have to deal with.

But I'm not in Europe!

Doesn't Matter!

GRPR Description

- Article 3 (territorial scope) of the GDPR
 - Key is *what* gets processed...
 - Such as data that can lead to a potential commercial transaction; or
 - Data regarding *behavior* conducted within the EU
 - ... *regardless* of where the data is kept or processed

GRPR Description

- Article 4 (what is covered) of the GDPR
 - ‘personal data’ means *any information* relating to an identified or identifiable natural person (‘data subject’); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person;

Has Google Finally Proven That Online Ads Cause Offline Purchases?

by **Niraj Dawar**

JUNE 01, 2017



SUMMARY



SAVE



SHARE



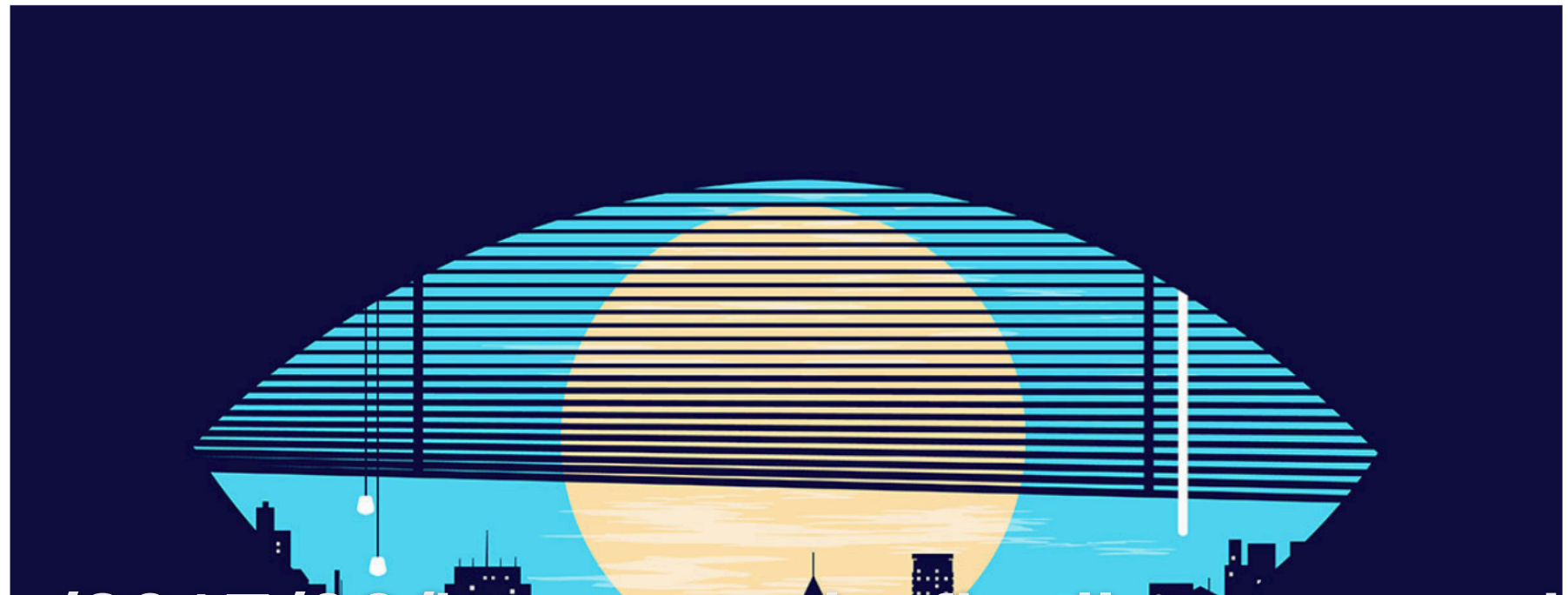
COMMENT

TEXT SIZE



PRINT

\$8.95 BUY COPIES



<https://hbr.org/2017/06/has-google-finally-proven-that-online-ads-cause-offline-purchases>

GRPR Description


- Individuals have a right...
 - to have access to the data
 - to have the data be portable (e.g., for another party)
 - to have restrictions put on the use of the data
 - to be forgotten (erasure of the data)
- Penalties (20M€ fine or 4% of gross income)

What you need to know (GDPR)

- Know which elements of your data are affected
- Know where all of the affected elements of your data are stored
- Know that data (in and from) *AI models* about covered people can be affected
- Know to whom you can provide the data, and how
- Know that affected elements of your data may have restrictions

What you need to know (GDPR)

- Know that you may have to show where you got the data
- Know that affected data must be protected, regardless...
- Know that there is no “grandfather clause” to affected data
- Know that you might have to delete affected data (no refunds)



Providing free access to primary legal materials, developing legal research tools, and supporting academic research on legal corpora.

Responding to GDPR “Right to Erasure” Requests

Recently, we received a GDPR request from our domain registrar asking that we remove a court document from our database on CourtListener. It appears that this is a growing problem for other legal publishers too, with techdirt doing a write up of the issue late last week:

GDPR Being Used To Try To Disappear Public US Court Docket <https://t.co/PIXcm0wl4n>

— techdirt (@techdirt) September 21, 2018

GDPR is a major development in the regulation of the Internet. It includes protections for individuals and a variety of regulations that apply to service providers like us. When GDPR went into effect, we were easily able to comply with its numerous privacy regulations because we were already being extremely conservative about who we shared data with and how much data we collected (see our privacy policy for details). For us, adopting compatible procedures with the GDPR just meant a few tweaks — no big deal.

Until last week that is, when we received a “Right to Erasure” request demanding that we remove a case from CourtListener. Now we have an EU regulation that’s at odds with our goal of gathering and sharing important legal information. What’s worse, if we complied with this request, we would be removing precedential information from CourtListener. Our policy is to never do that without a court order from a competent jurisdiction. In short, this take down request is at odds with our goals — and with the

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Oh, by the way...

The ePrivacy Directive

- Also by the EU Parliament
- ePrivacy Directive compliments the GDPR
- The ePrivacy Directive ensures the protection of fundamental rights and freedoms, in particular the respect for private life, *confidentiality* of communications and the *protection* of personal data in the electronic communications sector.

Liability

Criminal Law & Civil Law

Some Basic Criminal Law

- *Actus Reus* (guilty act)
 - Requires an act or failure to act (when duty requires)
- *Mens rea* (guilty mind)
 - Requires knowledge or being informed

TECH
TRANSFORMERS

Robot with \$100 bitcoin buys drugs, gets arrested

PUBLISHED TUE, APR 21 2015•6:32 AM EDT | UPDATED WED, APR 22 2015•5:09 AM EDT



Arjun Kharpal

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<https://www.cnbc.com/2015/04/21/robot-with-100-bitcoin-buys-drugs-gets-arrested.html>

Criminal Models for AI

- Perpetrator-via-another
 - AI lacks *mens rea*, but user could be liable
- Natural-Probable-Consequence
 - AI did *actus reus* but could have had *mens rea*
 - AI might escape liability if there was no conspiracy
- Direct-Liability
 - AI attributed with both *actus reus* and *mens rea*

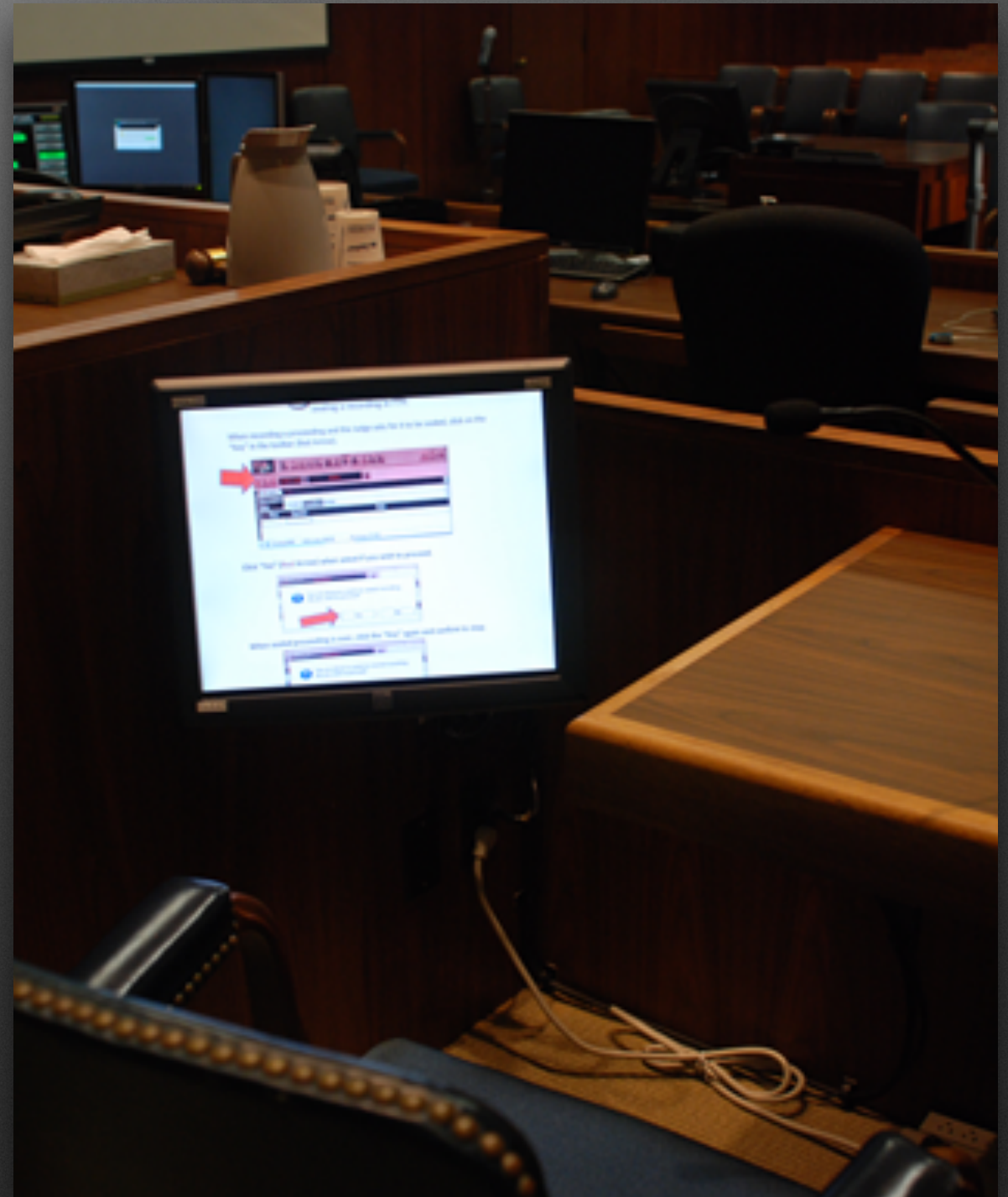
Civil Models for AI

- Negligence
 - Duty/Breach/Causation/Damage
- Breach of Warranty / Breach of Contract
- Product Liability
 - Is AI a product or a service?
 - If “product” (warranty of merchantability)
 - If “service” (duty of care)

**Liability for AI (as an Agent)
will focus on ownership and/
or control over the AI**

Defenses for AI

- Trojan horse defense
 - The AI was contaminated by someone else
 - This defense has worked in many cybercrime cases
- The design of the AI was bad
- The data used in the AI was bad
 - Shift liability to developers



Possible Legal Mechanisms

- Requirement of **Digital Identity** for each instance of an AI model
- License requirement for developers
- Logging requirement (to preserve evidence of what the AI did)
- Require that the AI be knowable and explainable



Defense Advanced Research Projects Agency > Program Information

Explainable Artificial Intelligence (XAI)

Dr. Matt Turek

RESOURCES

[DARPA-BAA-16-53](#)

[DARPA-BAA-16-53: Proposers Day Slides](#)

[XAI Program Portfolio](#)

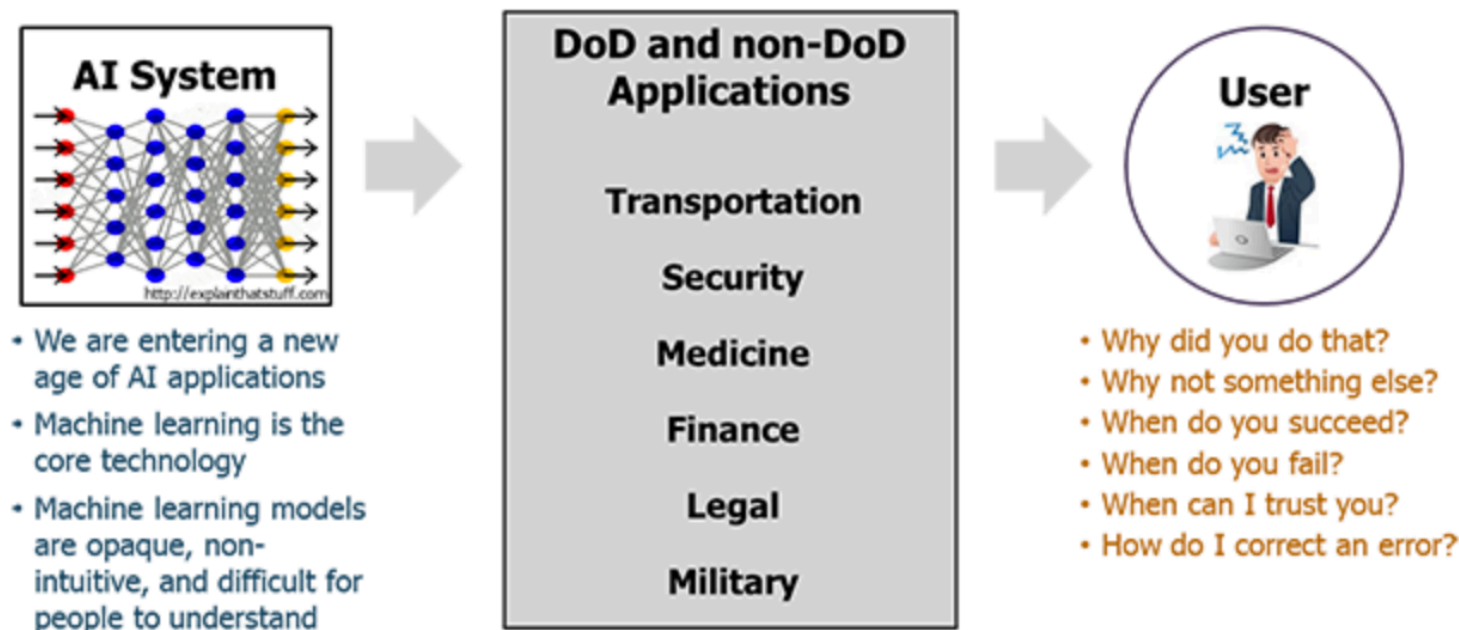


Figure 1. The Need for Explainable AI

Dramatic success in machine learning has led to a torrent of Artificial Intelligence (AI) applications. Continued advances promise to produce autonomous systems that will perceive, learn, decide, and act on their own. However, the effectiveness of these systems is limited by the machine's current inability to explain their decisions and actions to human users (Figure 1). The Department of Defense (DoD) is facing challenges that demand more intelligent, autonomous, and symbiotic

Conclusions / Observations

Questions Lawyers Will Ask

- Where did you get the data? (chain of custody)
- Did you have permission/license to the data?
- What is in the data? (privacy-related)
- Who else saw the data? (Outside developers? **AWS?!!**)
- What was done to the data to develop the ML/AI?

Questions Lawyers Will Ask

- Is there a mechanism for auditing the data & AI model for bias and/or privacy?
- Is there a mechanism to remove certain biases or data from the AI model?
- How does the AI work?
- What does the AI interface with?
- Who (and how) is the AI controlled or used?

Don't Lose Sight of the Big Picture

- Data is having an effect on companies “bottom line”
- Data (and AI) have become lucrative
- Owners are very interested in lucrative
- AI and analytics needs data — *Lot's* of data
- Data can be used to throttle AI/analytics, and thus data can be *leveraged to extract a fee* for the Owners
- IP and privacy laws are just symptomatic of that leveraging
- More squabbles over data are forthcoming...

Things to Consider

- Typical legal mechanisms affecting data:
 - **Contracts** — risk-shifting for data and AI
 - **Mergers & Acquisitions**
 - **Intellectual Property Laws** (civil and criminal penalties)
 - **Regulatory statutes/rules/ordinances** (for Privacy/anti-Bias)
 - **Civil and Criminal sanctions**
- Law will be used to *regulate* who gets what data and how
- Law will be used to *generate* artificial scarcity of data

Forthcoming Data Squabbles Will Affect on Your Job

(Again, ownership and privacy laws are simply symptomatic of that condition)

CAUTION



Intellectual Property Insurance: Everything You Need to Know

Intellectual property insurance protects inventors and companies if they're sued for infringement by another company. •

8 min read

What Is Intellectual Property Insurance?

Intellectual property insurance protects inventors and companies if they're sued for infringement by another company. The most common type pays for legal fees and monetary damages if you're found guilty of [intellectual property infringement](#). Pursuit policy insurance is another form that helps pay expenses if you must sue someone for intellectual property infringement.

What Is Intellectual Property?

Intellectual property is divided into two categories:

- **Industrial Property:** This includes patents, trademarks, and industrial design.
- **Copyright:** This covers artistic works. Examples include books, films, music, paintings, photos, and sculpture.

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Product liability insurance

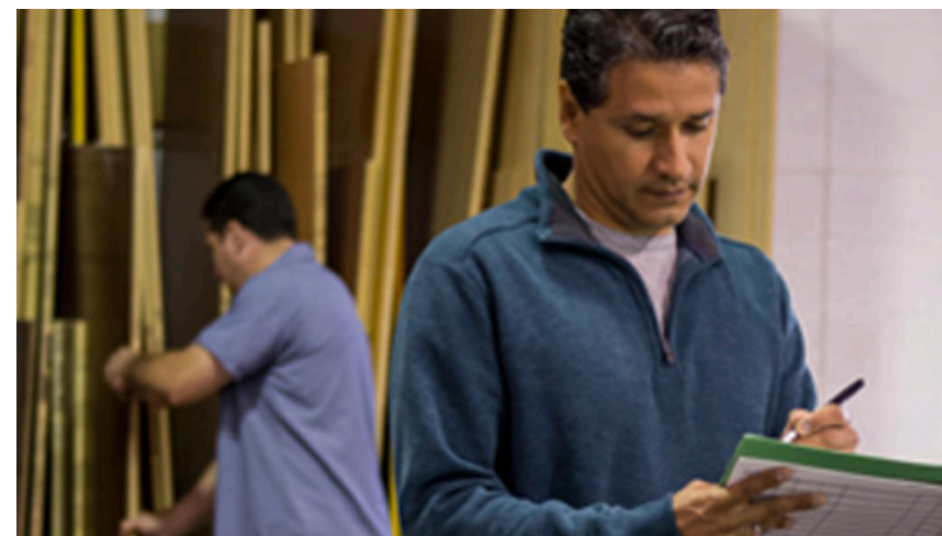
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What is product liability insurance for small businesses

Despite the hard work that small businesses put in to ensure they manufacture high-quality goods, there is still the chance that products could fail to work properly. For example, a children's apparel company could produce clothing that fits improperly and poses a suffocation hazard, or a food service business could bake pastries with an ingredient that triggers a customer's allergic reaction.

There is always the potential for defects that can result in bodily injury or property damage - serious risks neither your business nor customers can afford. That's why all businesses that sell products should have product liability coverage. Find out what product liability insurance is and how much your small business might need:

How does product liability coverage work?



Data Scientist Insurance

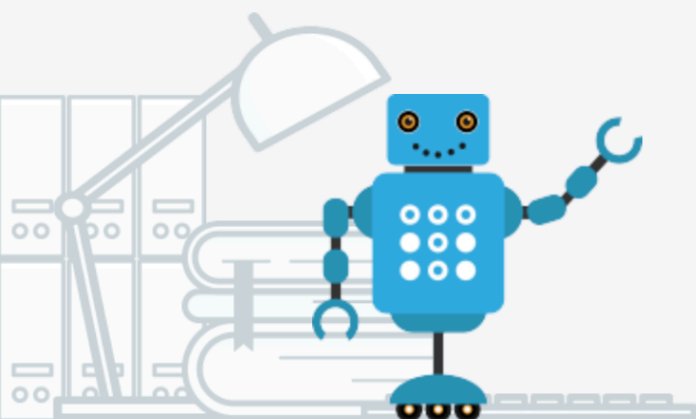
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Small Business Insurance for Data Scientists

Data scientist was dubbed the [sexiest job of the 21st century](#) a few years ago by the Harvard Business Review, and it continues to live up to its rep. In fact, [Bloomberg reports](#) by 2018, the US could face a **50 to 60 percent gap** between demand and available analytic talent.

Interested in an IT data scientist career? You're probably wondering, "What are data scientist qualifications?" and "How do I become a data scientist?" For starters, you'll need:

- A deep understanding of applied mathematics and statistics.
- Knowledge of programming languages and applications, such as SQL, R, Python, and Tableau.
- The ability to interpret data and create reports.

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Freddie Mac Using Shady AI Company for Mortgage Loans

ZestFinance is implicated in high-cost payday lending and backed by Peter Thiel. It's now working with a government-sponsored mortgage giant.

BY MAX MORAN OCTOBER 7, 2019



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Opinion
US politics

America's new aristocracy lives in an accountability-free zone

David Sirota

@davidsirota

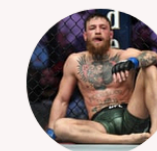
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10,661

Accountability is for the little people, immunity is for the ruling class. If this ethos seems familiar, that is because it has preceded some of the darkest moments in human history



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[Blockchains](#)

Blockchains for business and commerce, smart contracts, distributed autonomous organizations (digital corporations), business governance. Smart legal contracts, automated business processes, as well as regulatory and antitrust issues related thereto.



[Cybersecurity & Privacy](#)

Matters involving computer/network security such as cybersecurity measures, privacy policies, privacy regulations, security breach and notification requirements, incident response, privacy issues, privacy policies, information technology system audits, corporate espionage, identity theft, and computer crimes.



[Legal Engineering](#)

Automation of human/robotic workflow particularly with respect to legal workflows. Development of algorithms and AI-methods for robotics and modeling, software development to integrate disparate software systems, document assembly, automated document review, document retention policies.



[Electronic Discovery](#)



[Artificial Intelligence](#)

Development and implementation of systems involving artificial intelligence and machine learning, particularly for workflow automation. Ownership of artificial intelligence and the regulation of artificial intelligence. Litigation involving devices that incorporate machine learning and artificial agents.



[Intellectual Property](#)

Patents, Trademarks, Copyrights, Trade Secrets and related Antitrust matters.



[Electronic Commerce](#)

Software licensing (both closed source and open source software), contracts, service agreements, end-user license agreements, service level agreements.



[Data Science](#)