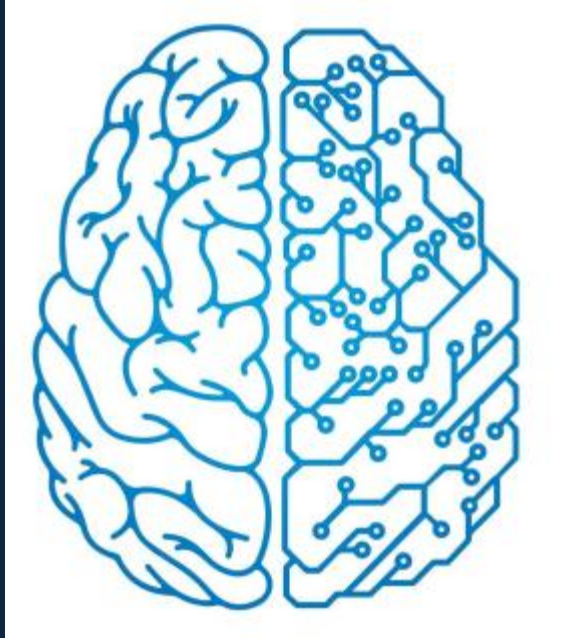


AI, Law, Privacy...

IAPP Bengaluru Knet * March 24, 2017
(via Skype)

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Agenda



- Some Basic Stuff
- Some Issues (also basic)
- One example (Alexa)
- GDPR

Some Basic Stuff

AI

- The term AI is applied when a machine mimics “cognitive” functions that humans associate with human mind, such as learning and problem solving
 - *Homo sapiens means wise man*
 - “Data”
- When machines become capable, functions thought to require intelligence are removed from the definition, e.g. OCR
 - but not yet human speech, playing Go or chess, self-driving cars, etc.
 - “AI is whatever hasn’t been done yet.”



An Underlying Premise

- “...Every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it.”
- “If a machine can do a job, then an automatic calculator can be programmed to simulate the machine.”
- “...a truly intelligent machine will carry out activities which may best be described as self-improvement.”
- “...the difference between creative thinking and unimaginative competent thinking lies in the injection of some randomness...In other words,...include controlled randomness in otherwise orderly thinking.”
 - A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence, August 31, 1955

Sounds basic?

- “It is technologically feasible to copy the brain directly into hardware and software, and that such a simulation will be essentially identical to the original.”

Some Issues

First, Data Thirst

- Machine learning needs vast amounts of data-points in order to learn
 - Machine learning is extracting models to make predictions (predictive analytics)
- we are heading towards a world of near perfect data
 - where “perfect” means everything that happens is recorded and available for someone to mine
 - *The case of Alexa*
 - Self-driving cars are constantly monitoring their surroundings, capturing image data at 250MB/ second (“you will never have an accident and you will not know what happened”)

Next, Big Data needs AI

- Big Data uses AI techniques in order to mine
 - We live in the Algorithm Era
- A bi-directional relationship

So?

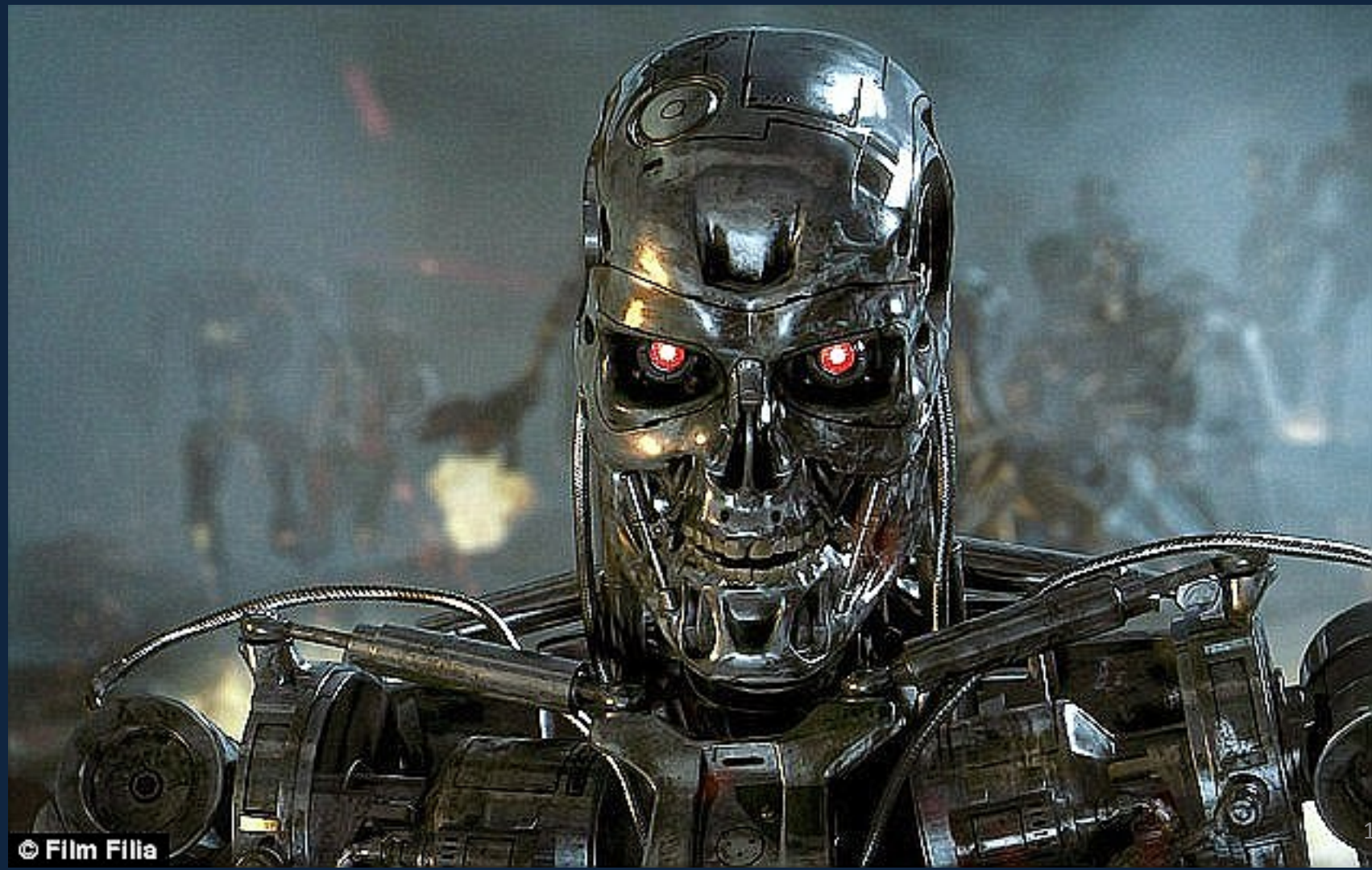
- **Transparency**
 - “you will never have an accident and you will not know what happened”
 - “plug and pray”
- **Privacy (and data protection)**
- **Profiling (and surveillance)**
 - Bias induced by input data creates a vicious cycle of self-fulfilling prophecies. Feedback the machine receives reinforces the initial bias
 - The Holocaust
 - *Minority Report*

Algorithm v. Algorithm

- First, we need lots of data for AI to work
- Then we need AI to mine Big Data
- Algorithmic models have transparency, privacy and profiling issues
- **So?** We need another algorithm to make sure the earlier algorithmic model is fair and lawful? Nice!

Flavor of Things

- Apple *Siri* / Google *Assistant* / Microsoft *Cortana* / Amazon *Alexa* / Samsung *Bixbie*
- iRobot *Roomba*
- Self-driving cars
- Autonomous weaponized drones (and terminators)



Nothing to Worry, Really

- “The development of full artificial intelligence could spell the end of the human race. Once humans develop artificial intelligence, it will take off on its own and redesign itself at an ever-increasing rate. Humans, who are limited by slow biological evolution, couldn’t compete and would be superseded.”
 - *Stephen Hawkins, October 2015 as reported by BBC*
- “Artificial intelligence is the next stage in evolution.”
 - *Samuel Butler, Darwin Among the Machines, 1863; expanded by George Dyson, 1998*

Well...

- “I think we should be very careful about artificial intelligence. If I were to guess like what our biggest existential threat is, it’s probably that...Increasingly scientists think there should be some regulatory oversight, maybe at the national and international level, just to make sure that we don’t do something very foolish. With artificial intelligence, we are summoning the demon...”
 - *Elon Musk, MIT Aeronautics and Astronautics department’s Centennial Symposium , Jan 2015*
- *"I am in the camp that is concerned about super intelligence. First the machines will do a lot of jobs for us and not be super intelligent. That should be positive if we manage it well. A few decades after that though, the intelligence is strong enough to be a concern. I agree with Elon Musk and some others on this and don't understand why some people are not concerned."*
 - *Bill Gates on Reddit’s Ask Me Anything, as reported by Washington Post, Jan. 29, 2015*

An Example (Alexa)

Amazon Echo - White

Amazon

4.4 out of 5 stars 53,412 customer reviews

| 1000+ answered questions

#1 Best Seller in Home Automation Hubs & Controllers

Price: \$179.99 | FREE One-Day
or 5 monthly payments of \$36.00



Alexa

In Stock.

Get it tomorrow, March 24. Order within **15 hrs 15 mins** and choose **Same-Day Delivery** at checkout.

Ships from and sold by Amazon Digital Services LLC. Gift-wrap available.

Color: Black

- Plays all your music from Amazon Music, Spotify, Pandora, iHeartRadio, TuneIn, and more using just your voice
- Fills the room with immersive, 360° omni-directional audio
- Allows hands-free convenience with voice-control
- Hears you from across the room with far-field voice recognition, even while music is playing
- Answers questions, reads the news, reports traffic and weather, reads audiobooks from Audible, gives info on local businesses, provides sports scores and schedules, and more using the Alexa Voice Service
- Controls lights, fans, switches, thermostats, garage doors, sprinklers, locks, and more with compatible connected devices from WeMo, Philips Hue, Samsung SmartThings, Nest, ecobee, and others
- Always getting smarter and adding new features, plus thousands of skills like Uber, Domino's, and more

State of Arkansas v. James Andrew Bates

Benton County, Arkansas

- Nov. 22, 2015: Bates 911 call to report that he found his friend Victor Collins deceased in Bates' hot tub on the patio of Bates' residence after a night of watching a football match with some friends when all got drunk
- Victor and two friends decided to get into a hot tub while he went off to sleep past midnight. Victor and another friend had plans to sleep over because they "were arguing with their wives"
- Bates found Victor's body in the hot tub when he woke up
- Looks like murder
- **No one else was in the house**

Alexa was there

- Police found that Bates had Alexa
- What did Alexa know/ record?
- Does “she” constantly record or only when someone calls her name?
- Amazon should know
- Search warrant issued against Amazon in November 2016
- Amazon mounted an aggressive defense to quash warrant

March 2017; But Story is Not Over

- March 3: Bates consents to Amazon's disclosure of recordings
- March 8: Court approves Amazon's motion to withdraw earlier motion to quash search warrant
- So, what all did Alexa know?
- What's the law regulating collection, storage, disclosure et al.?



“If the law supposes that,” said Mr. Bumble,... “THE LAW IS AN ASS...his eye may be opened by experience, by experience!”

- Charles Dickens, *Oliver Twist*, chapter 51, p. 489 (1970). First published serially 1837–1839.

GDPR, the new cop on the block

- We know GDPR imposes many privacy and data protections measures by design and by default (data minimization, informed consent, etc. etc.)
- Individuals not to be subject to a decision based solely on automated processing, including profiling, unless such decision is provided by law (e.g. fraud prevention systems) or is necessary to perform under a contract or based on data subject's explicit consent
- Citizens will have a right to understand why an algorithm has made a certain choice if the algorithm is predictive and significantly affects data subjects
- May 25, 2018 (“this story has not even begun...”)



Thank you!



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