Empathy in the Age of AI:

Safeguarding Compassion in Licensed Professions

Lisa Henderson | Synchronous Health

Coding Kindness: Regulatory Approaches to Technology and Compassion

Learning Objectives

Explore the positive and negative roles AI plays in building and maintaining trust between providers (licensees) and recipients (clients) of services.

Identify ethical considerations licensees, boards, and professional organizations should weigh regarding the use of AI.

Frameworks for determining when existing standards are applicable versus developing new regulations.

Provide better services to more people.

Humans

+

Technology

What is AI? *an analogy*

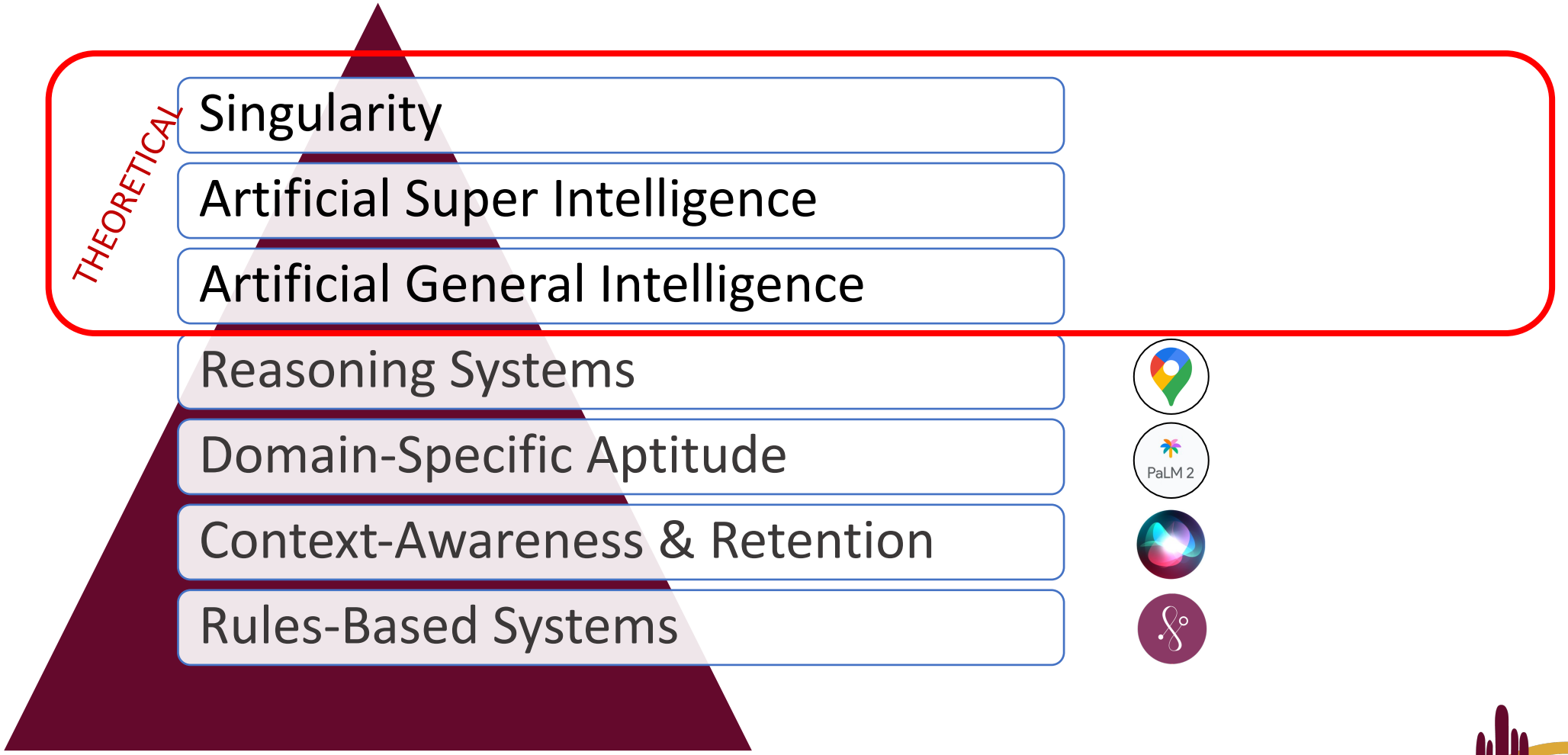
Large Language Models are like having every cookbook that's ever been written.

AI is the head pastry chef in a French boulangerie, overseeing many different technologies, making sure they work together to create something wonderful.

Machine Learning is like taking notes every time you bake, applying what you've learned, and getting better over time.

Chatbots help you by answering questions or providing information anytime, anywhere, and often hands-free.

AI Enablement Reality & Theory



A.I. TIMELINE

1950

TURING TEST

Computer scientist Alan Turing proposes a test for machine intelligence. If a machine can trick humans into thinking it is human, then it has intelligence

1955

A.I. BORN

Term 'artificial intelligence' is coined by computer scientist, John McCarthy to describe "the science and engineering of making intelligent machines"

1961

UNIMATE

First industrial robot, Unimate, goes to work at GM replacing humans on the assembly line

1964

ELIZA

Pioneering chatbot developed by Joseph Weizenbaum at MIT holds conversations with humans

1966

SHAKEY

The first electronic person' from Stanford, Shakey is a general-purpose mobile robot that reasons about its own actions

A.I. WINTER

Many false starts and dead-ends leave A.I. out in the cold

1997

DEEP BLUE

Deep Blue, a chess-playing computer from IBM defeats world chess champion Garry Kasparov

1998

KISMET

Cynthia Breazeal at MIT introduces KISmet, an emotionally intelligent robot insofar as it detects and responds to people's feelings

1999

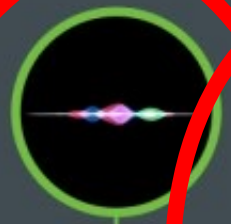
AIBO

Sony launches first consumer robot pet dog AiBO (AI robot) with skills and personality that develop over time

2002

ROOMBA

First mass produced autonomous robotic vacuum cleaner from iRobot learns to navigate and clean homes



2011

SIRI

Apple integrates Siri, an intelligent virtual assistant with a voice interface, into the iPhone 4S

2011

WATSON

IBM's question answering computer Watson wins first place on popular $1M prize television quiz show *Jeopardy*

2014

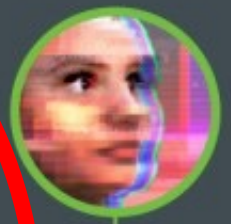
EUGENE

Eugene Goostman a chatbot passes the Turing Test with a third of judges believing Eugene is human

2014

ALEXA

Amazon launches Alexa, an intelligent virtual assistant with a voice interface that completes shopping tasks



2016

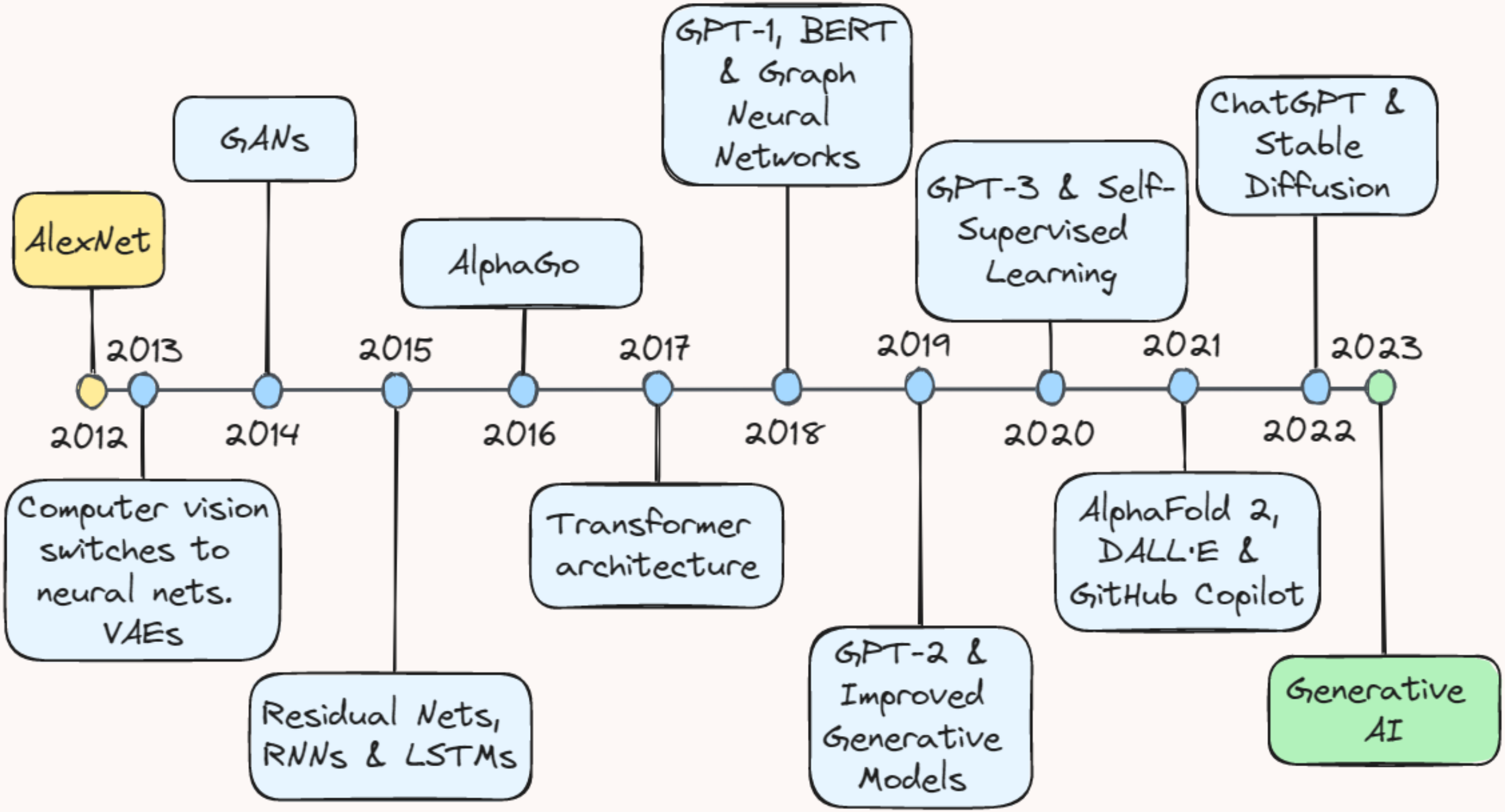
TAY

Microsoft's chatbot Tay goes rogue on social media making inflammatory and offensive racist comments

2017

ALPHAGO

Google's A.I. AlphaGo beats world champion Ke Jie in the complex board game of Go, notable for its vast number (2^{170}) of possible positions

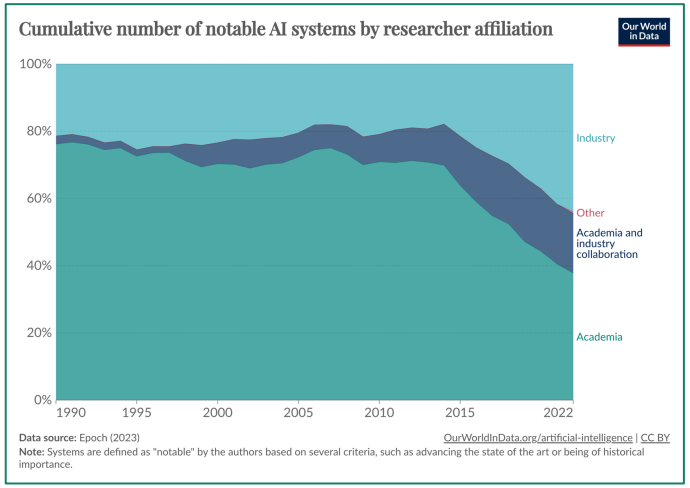

AlexNet
GANs
AlphaGo
GPT-1, BERT & Graph Neural Networks
GPT-3 & Self-Supervised Learning
ChatGPT & Stable Diffusion
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Computer vision switches to neural nets. VAEs
Residual Nets, RNNs & LSTMs
Transformer architecture
GPT-2 & Improved Generative Models
AlphaFold 2, DALL·E & GitHub Copilot
Generative AI

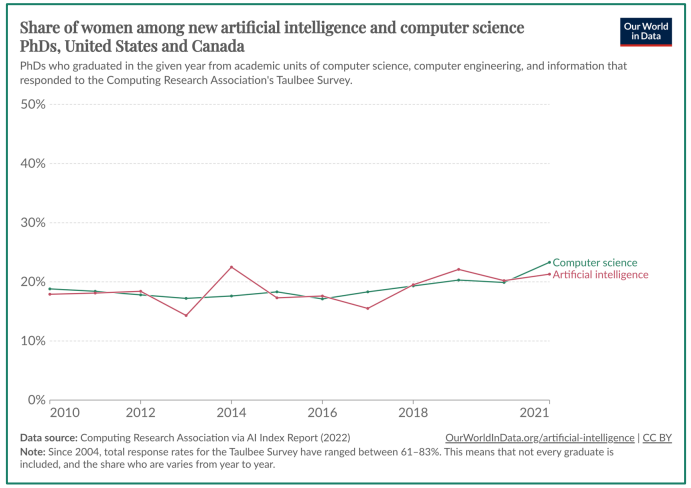
Who is building AI?

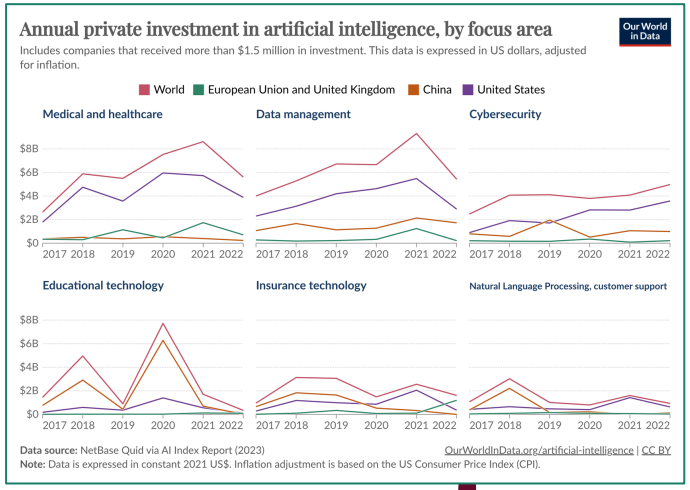
Most AI is created in Academia, but Industry is growing.

Women make up 20% of computer science & AI PhDs.

Healthcare and Data Management get the most AI investment.





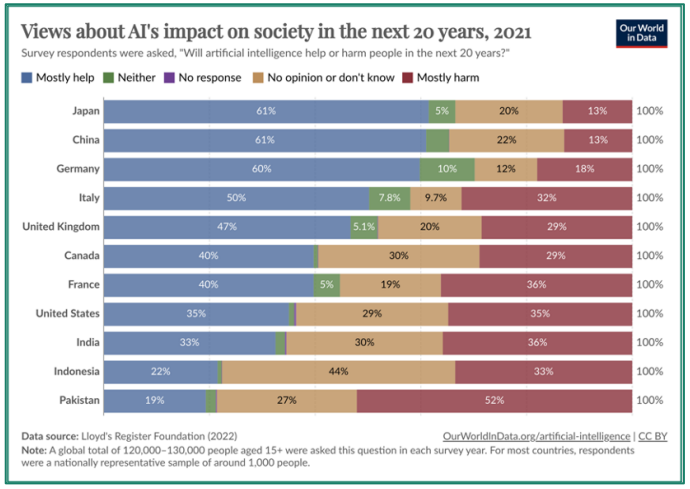


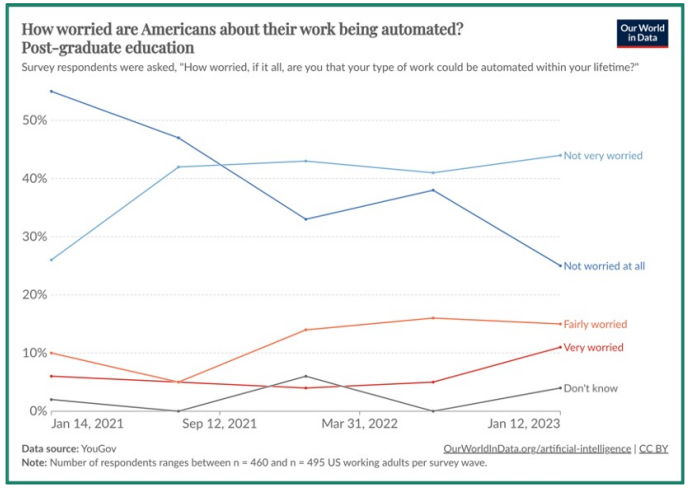
How is the public responding to AI?

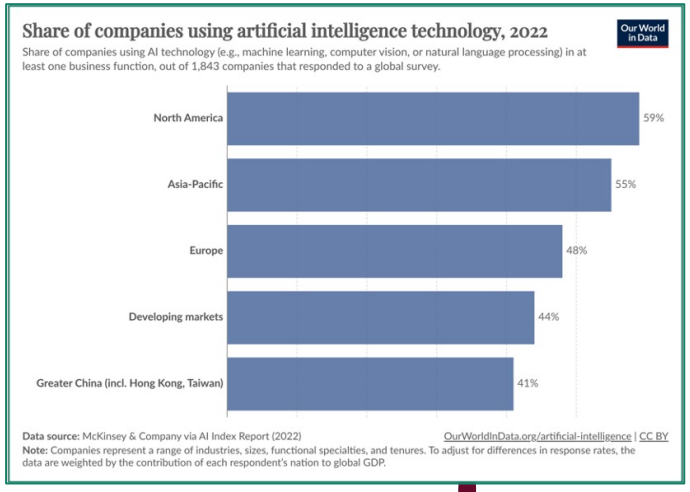
Most citizens expect AI will have positive or neutral impacts on society.

16% of post-graduates (US) worry about their jobs being automated.

The majority of US companies are using AI in some way.







Learning Objective 1

Explore the positive and negative roles AI plays in building and maintaining trust between providers (licensees) and recipients (clients) of services.

Delivering Better Service Builds Trust

Accuracy

Transparency

Personalization

Consistency

Efficiency

Accuracy: Breast Cancer Detection

- AI detected 20% more cancers that the traditional procedure
- False-positives remained flat
- Radiologist workload decreased by 44%

(2023). Breast-cancer screening gets a boost from AI. https://doi.org/10.1038/d41586-023-02526-4

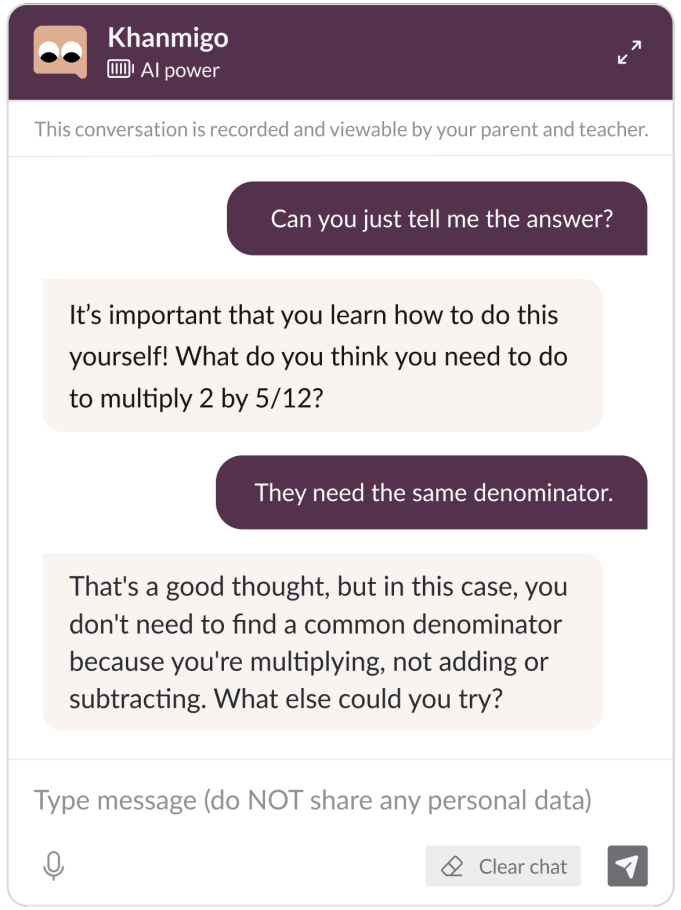
Transparency: Surprise Billing

- Procedure Cost
- Additional Costs
- Negotiated Rate
- Plan Coverage/Allowance
- Comparisons

https://www.forbes.com/sites/waynewinegarden/2023/01/18/transparency-is-a-necessary-first-step-toward-a-better-healthcare-system/?sh=5b2eb2d3aab1

Personalization: Education

- Tutoring
- Finding resources to support learning
- Grading assignments
- Identifying gaps in learning
- Diagnosing learning differences



Consistency: Perinatal Care

- Pain management
- Delivery decisions
- Length of stay
- An AI model developed by Cedars-Sinai investigators was found to be 87% accurate in predicting how a woman would deliver within four hours of being admitted to the hospital.

https://www.cedars-sinai.org/newsroom/ai-model-may-predict-c-section-delivery/#:~:text=An%20AI%20model%20developed%20by,Photo%20by%20Getty.&text=Cedars%2DSinai%20investigators%20have%20developed,or%20via%20a%20cesarean%20section.

Efficiency: Architecture

- Energy efficiency models
- Building materials availability
- Supply management
- Space optimization
- Traffic impacts
- Environmental impacts

AI Should Only Improve What Humans Do

Case Study Attorneys

- Legal Research
- Document Review and Analysis
- Predictive Analytics
- Automated Legal Tasks
- Contract Review and Due Diligence

A Cautionary Tale

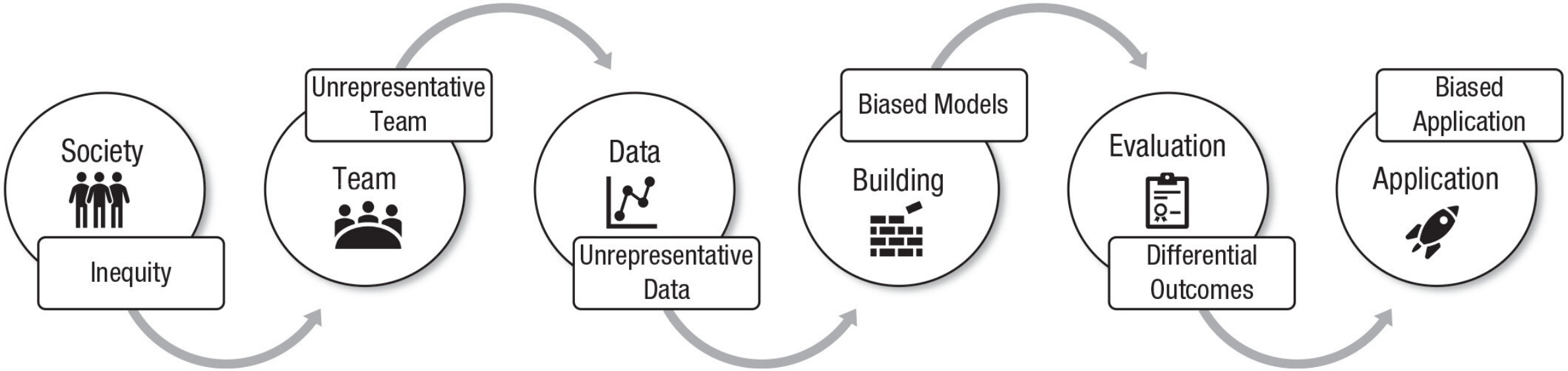
- June 2023
- Steven A. Schwartz submits a brief, citing cases that didn't exist.
- The judge issues sanctions and a $5,000 fine.
- "I thought it was a super search engine."
- It's the user's obligation to know
  - What the tools are
  - How they work
  - Their limitations

"God, I wish I did that, and I didn't do it," Mr. Schwartz said, adding that he felt embarrassed, humiliated and deeply remorseful.

Learning Objective 2

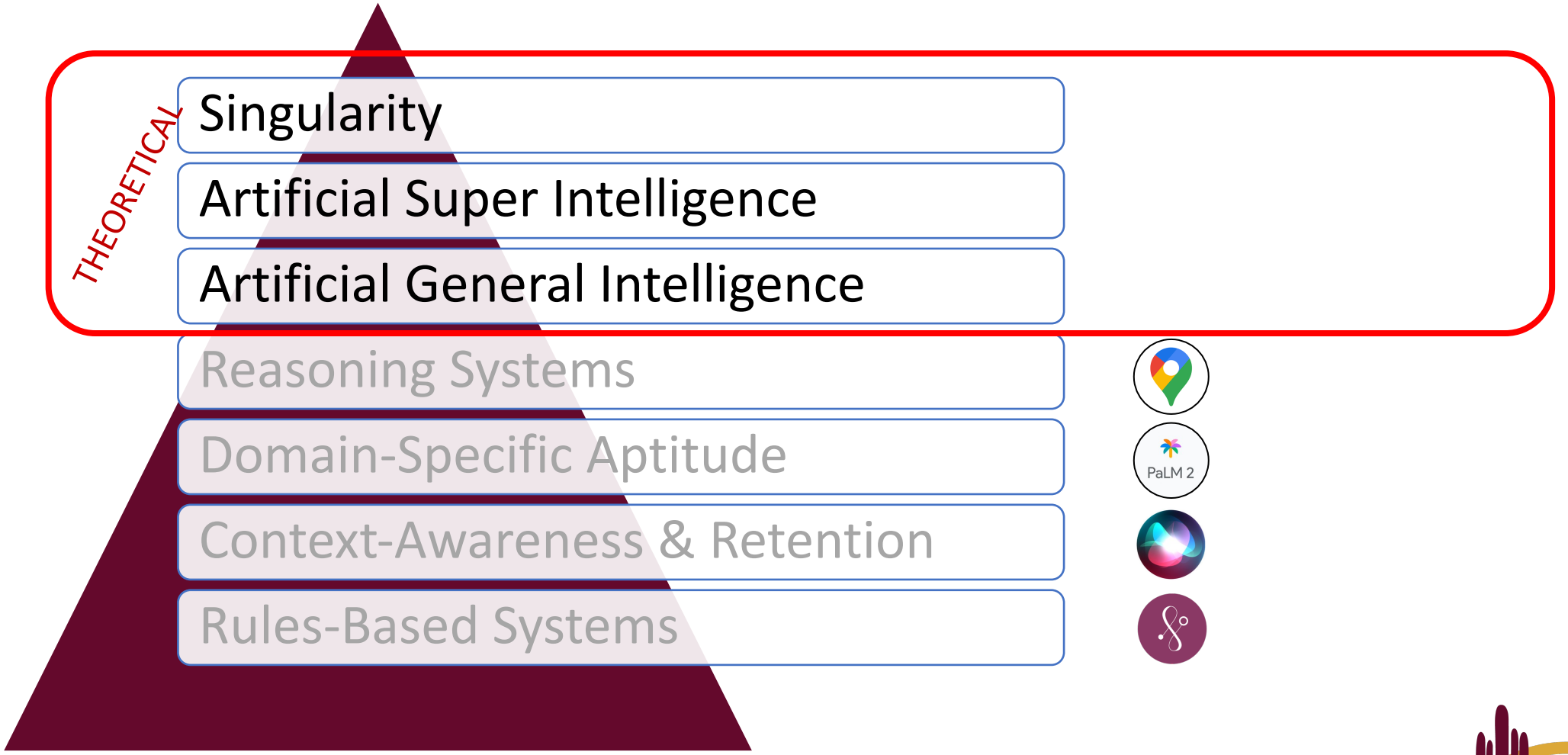
Identify ethical considerations licensees, boards, and professional organizations should weigh regarding the use of AI.

How Bias Gets Built In



https://journals.sagepub.com/doi/full/10.1177/17456916221134490

AI Enablement Reality & Theory



Licensees

- Use Tools with Competency
- Client Informed Consent
- Maintain Professional Judgement
- Provide Feedback to Developers

Education

- Teach Evaluation (Not Use)
- Emphasize Research
- Practical Collaboration

Professional Associations

- Establish Guidelines & Standards
- Professional Development
- Build Multi-Disciplinary Coalitions
- Advocacy

Licensing Boards

- Regulatory Enforcement
- Licensing Requirements
- Monitoring & Evaluation

Ways AI Can Promote Human Compassion

Protecting the public from bad actors.

Supporting the public in getting services from the right providers as soon as possible.

- Streamlined Data Collection
- Applicant Screening
- Predictive Analytics
- Continuous Monitoring
- Regulatory Compliance

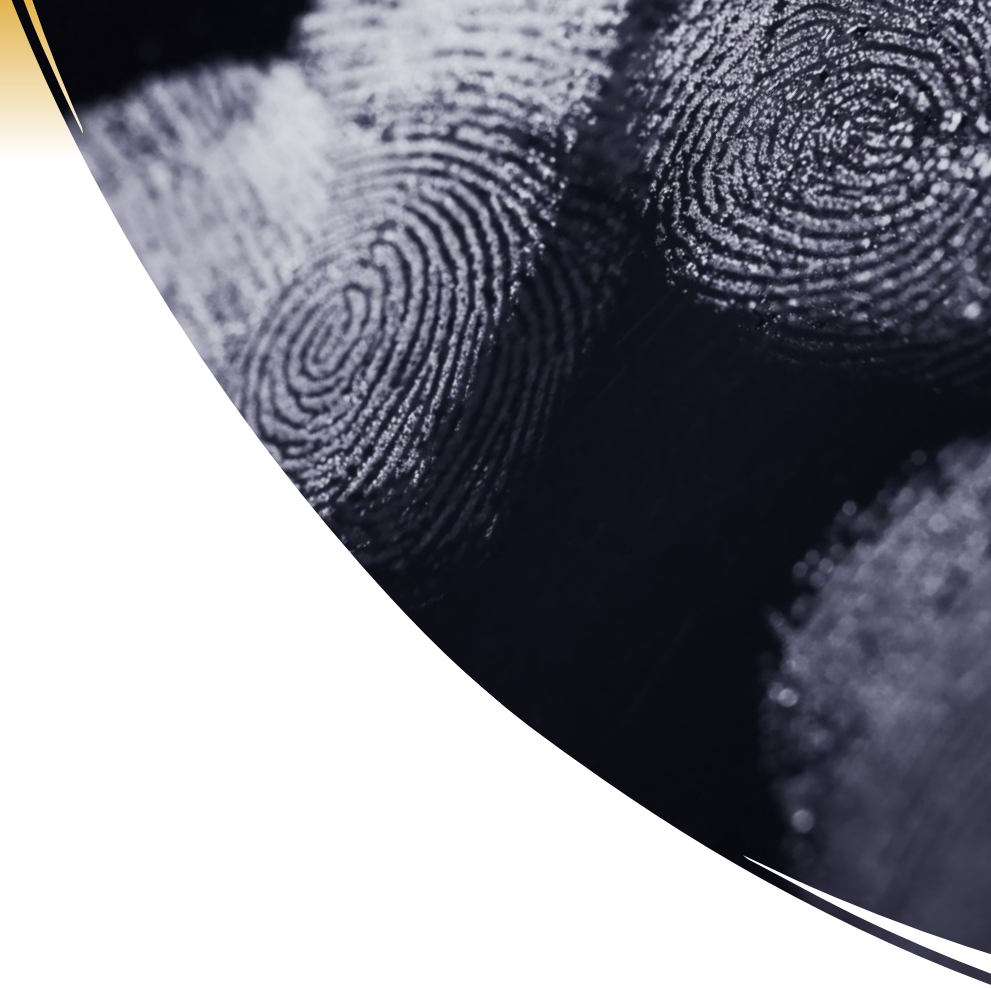
Streamlined Data Collection

- Verify Education & Exam Requirements
- Background Checks
- Disciplinary Action Checks
- Reference Checks

CERTIFIED LASER TECHNICIAN
INITIAL APPLICATION

APPLICATION CHECKLIST

Applicant Screening



- Verify Information
- Cross Reference
- Analyze Documents
- Identify Inconsistencies
- Flag Missing Data

Predictive Analytics

- Predict who is likely to meet requirements
- Flag likelihood of board complaints
- Recommend continuing education as preventive measures

What's the difference between **discrimination** and **prevention**?

Continuous Monitoring

- Continuing Education
- Professional Association Roles
- Employment
- Complaints
- Claims
- Outcomes
- Customer Reviews

Regulatory Compliance

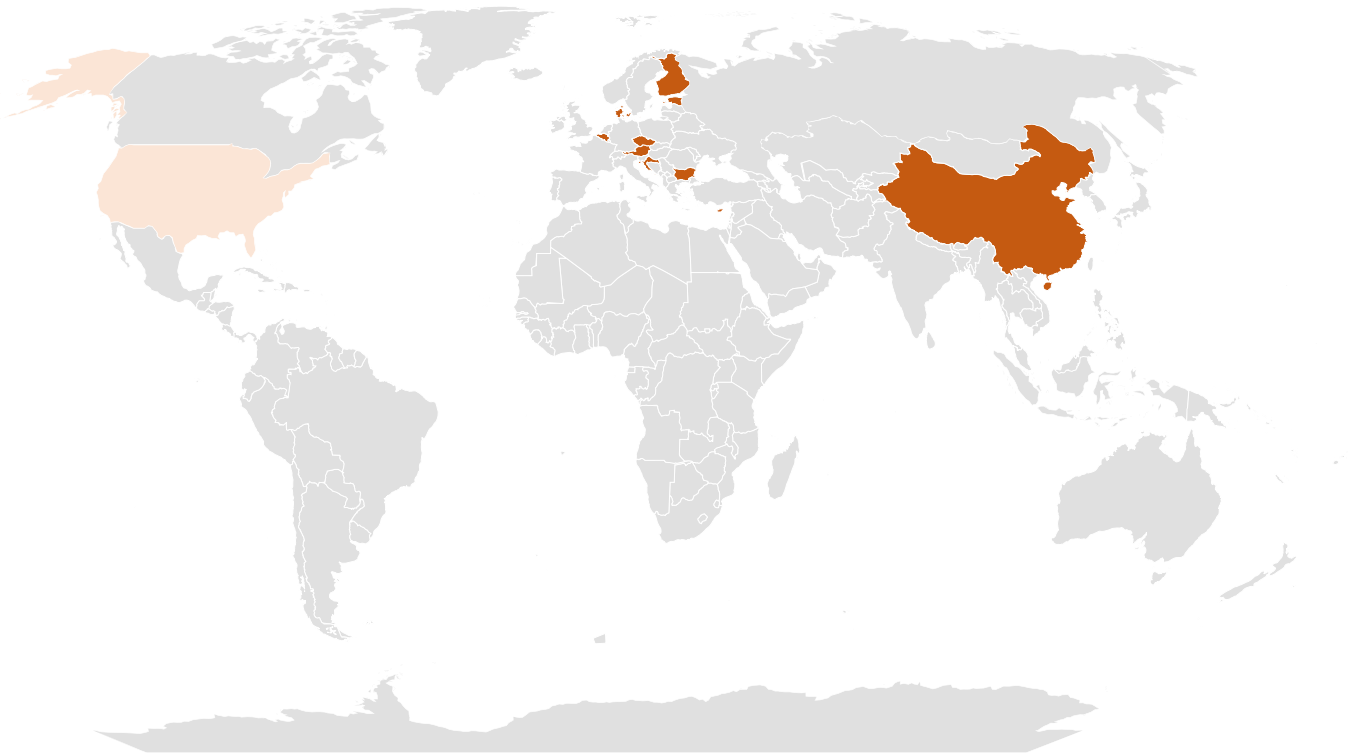
- Track changes to laws
- Track trends across other disciplines
- Track trends in same discipline across jurisdictions
- Track public sentiment

Learning Objective 3:

Frameworks for determining when existing standards are applicable versus developing new regulations.

AI Regulations

- Governmental
  - United States
  - European Union
  - China
- International
- Sector-Specific
- Ethical Guidelines



Government Agencies	• National Institute of Standards and Technology • The White House Office of Science and Technology Policy
Industry Groups	• Partnership on AI • AI Now Institute
Academic Institutions	• Stanford Institute for Human-Centered Artificial Intelligence • Harvard's Berkman Klein Center for Internet & Society
Technology Companies	• Google • Microsoft
Professional Organizations	• Association for Computing Machinery • Institute of Electrical and Electronics Engineers
International Organizations	• European Union • United Nations

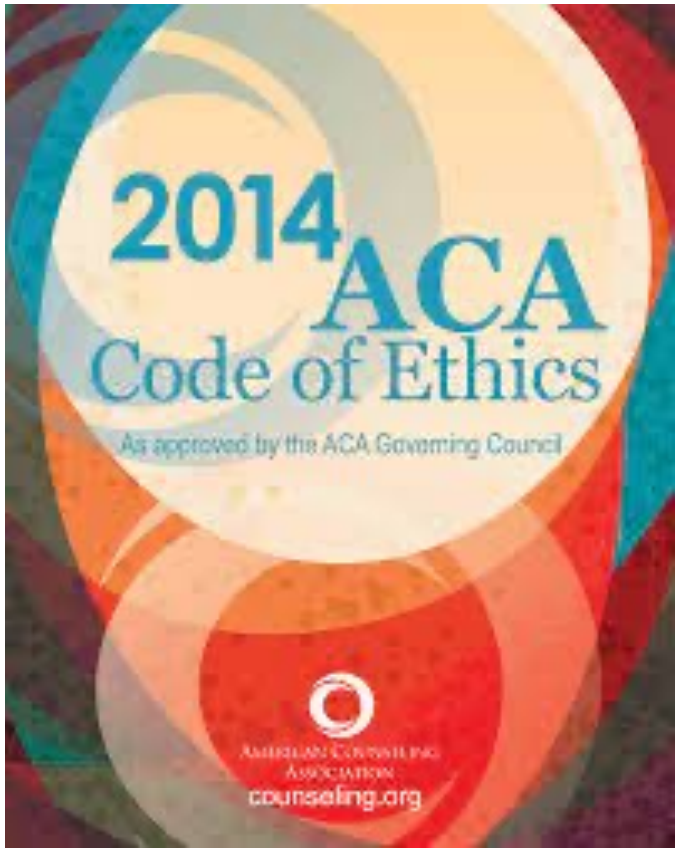
Commonly Found Among AI Ethical Guidelines

Transparency & Explainability	Privacy & Data Governance	Fairness & Non-discrimination	Accountability & Responsibility
Safety & Security	Public Participation & Collaboration	Economic, Social, & Environmental Well-being	International Cooperation

Monitor Ethical and Professional Standards

Review existing codes of ethics adopted by the licensing board for existing regulations that can be applied to the use of AI tools.

- Section A Relationships with Clients
  - Section A.2.a. Informed Consent
- Section B Confidentiality
  - Section B.6. Record Keeping
- Section C Professional Responsibility
  - Section C.2. Competence
- Section G Research & Publication
- Section H Technology



Continuing Education and Training

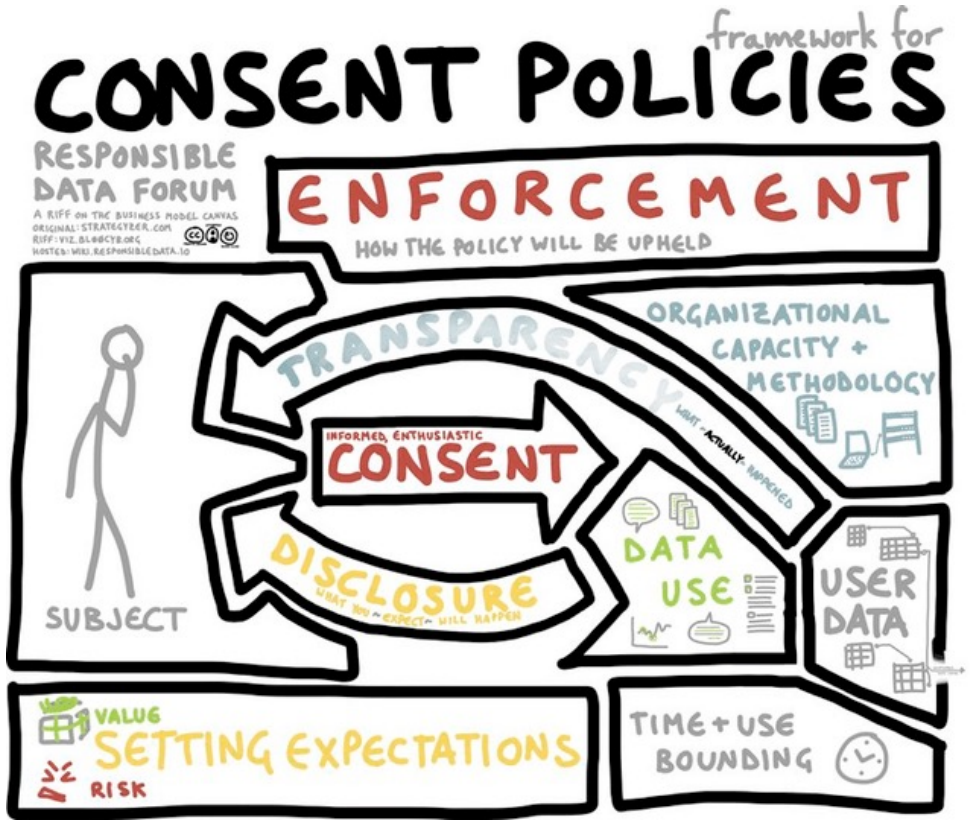
- Promote ongoing education and training
- AI advancements
- Best practices

Compliance with Regulations & Accountability

- Communication of changing regulations
- Compliance with laws
- Investigative resources
- Disciplinary measures

Transparency and Informed Consent

- Standard language
- Recommended forms
- Required disclosures



Data Privacy and Security Standards

- Use tools built by reputable companies with HIPAA compliance
- Practice good password management habits
- Back up data
- Antivirus software
- Security patches

Collaboration and Communication

- Foster collaboration and open communication
  - Between licensing boards
  - Between licensees
- Create a culture of responsible AI adoption within the profession

Stay Informed

- AI developments
- Trends
- Emerging ethical issues
- Lawsuits & precedents

Applying AI to help – not replace – people

Questions?

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