AI AND JEW

DEMYSTIFYING ARTIFICIAL INTELLIGENCE and its JEWISH ETHICAL IMPLICATIONS

OUR AGENDA

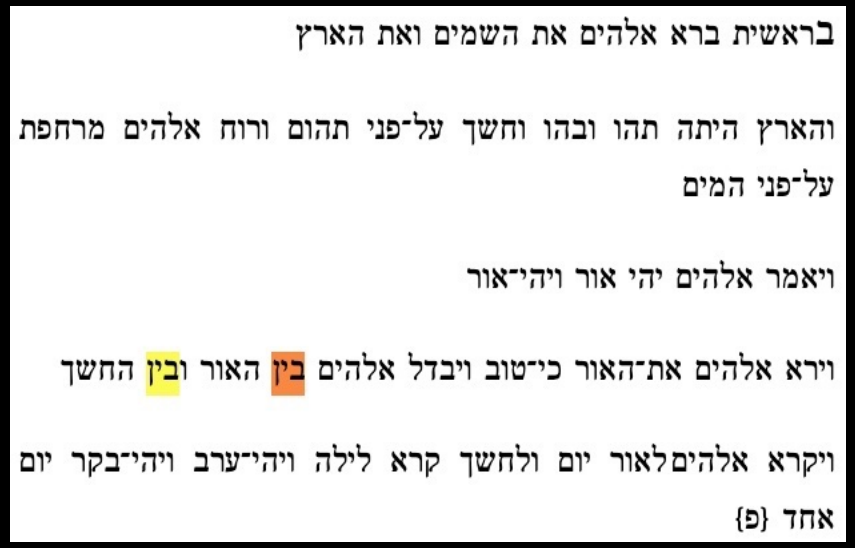
- What AI is NOT
- Judaism and AI
- What AI Is
  - Definitions
  - AI in Your Life
  - A Brief History of AI
- The Jewish Ethical Questions and Concerns about AI
- Questions & Conclusions

WHAT IS INTELLIGENCE IN JUDAISM?

Comes from the shoresh , which forms the preposition, which means between.

G-d distinguishes between things created, and also judges if they are good. We are created in G-d s image.

Is that a core ethical caution that Judaism has for AI?



בראשית ברא אלהים את השמים ואת הארץ

והארץ היתה תהו ובהו וחשך על־פני תהום ורוח אלהים מרחפת
על־פני המים

ויאמר אלהים יהי אור ויהי־אור

ויראאלהים את־האור כי־טוב ויבדל אלהים בין האור ובין החשך

ויקרא אלהיםלאור יום ולחשך קרא לילה ויהי־ערב ויהי־בקר יום
אחד {פ}

AI:THE GOLEM?

AI, like the Golem, represents the human desire to create

The Golem often represents human hubris

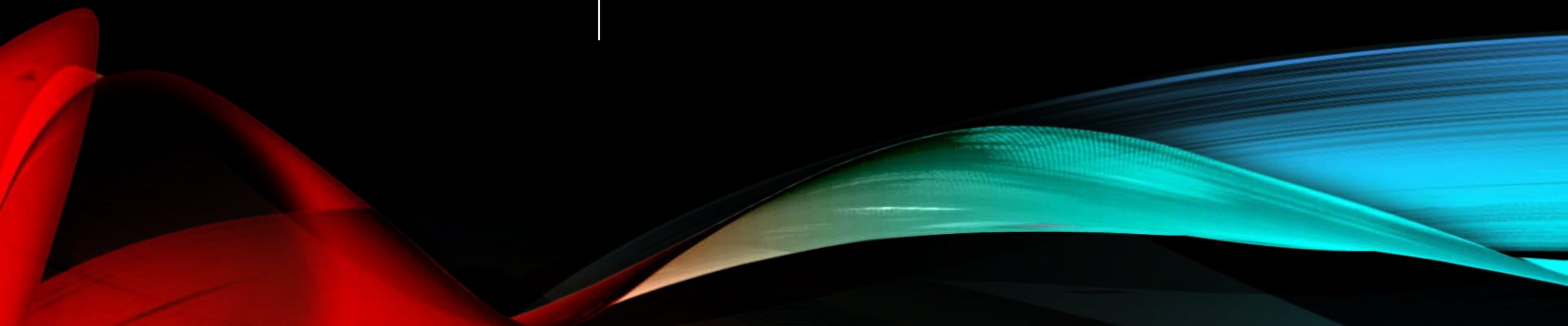
AI is responsible for the security and safety of Jews!

AI: PERSONHOOD IN JUDAISM

AI is *NOT SENTIENT YET*

WHAT IS ARTIFICIAL INTELLIGENCE?

development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation



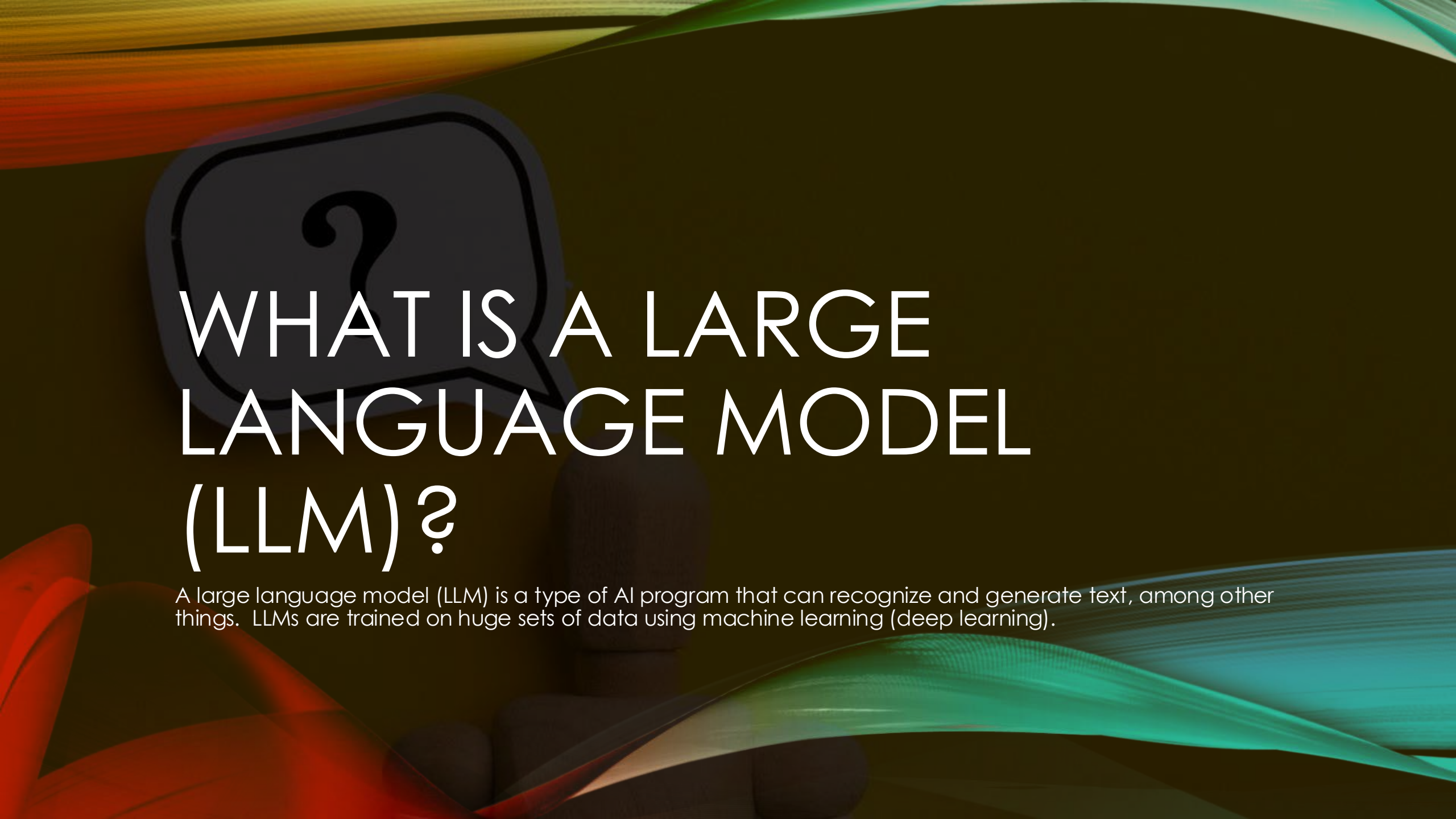
WHAT IS A NEURAL NETWORK?

In machine learning, a neural network is a model inspired by the structure and function of biological neural networks in animal brains.

WHAT IS MACHINE LEARNING?

instructions, by using algorithms and statistical models to analyze and draw inferences from patterns in

WHAT IS DEEP LEARNING?



WHAT IS A LARGE LANGUAGE MODEL (LLM)?

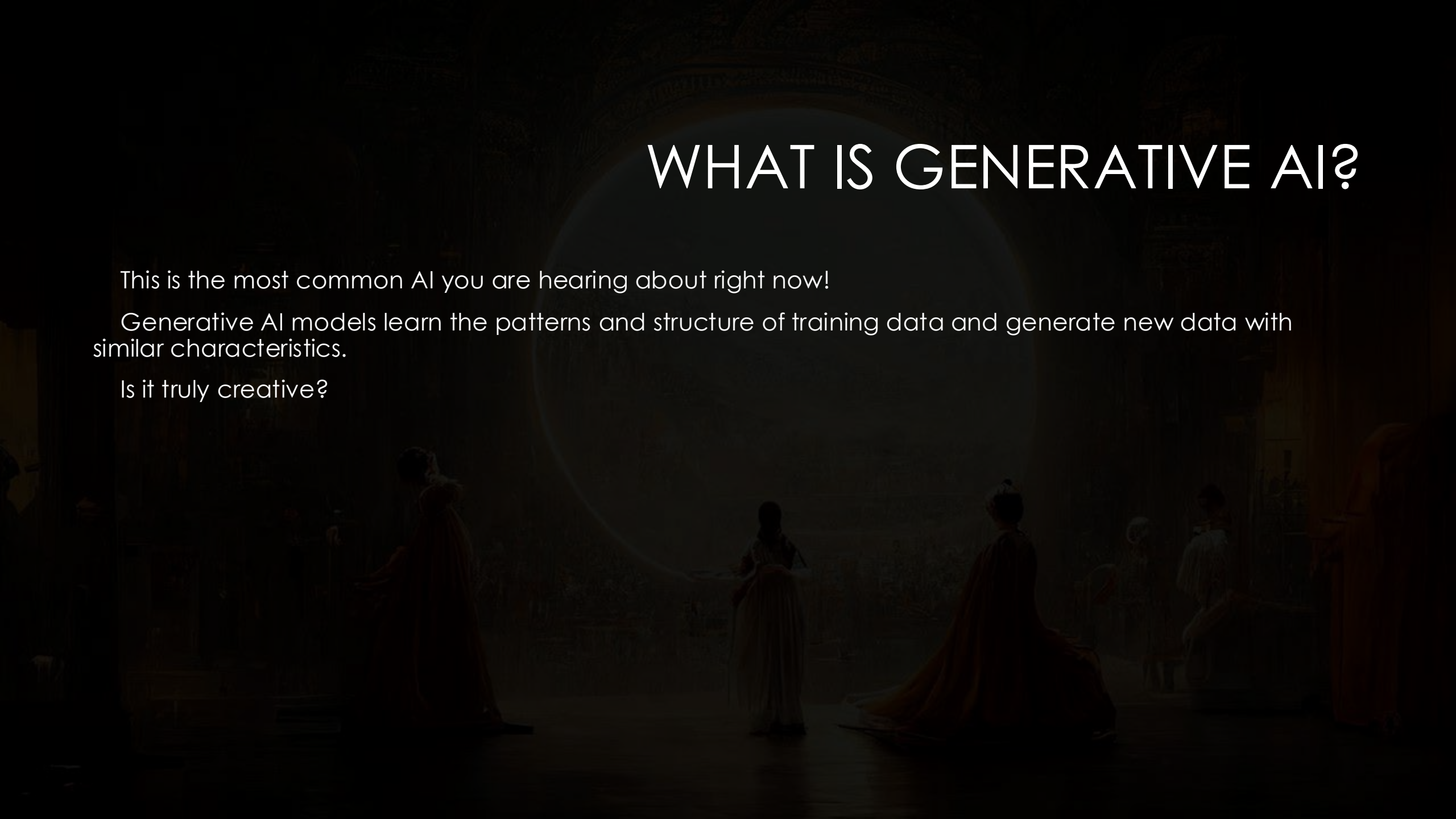
A large language model (LLM) is a type of AI program that can recognize and generate text, among other things. LLMs are trained on huge sets of data using machine learning (deep learning).

WHAT IS GENERATIVE AI?

This is the most common AI you are hearing about right now!

Generative AI models learn the patterns and structure of training data and generate new data with similar characteristics.

Is it truly creative?



WHAT IS PREDICTIVE AI?

Good example from systems I have worked on:

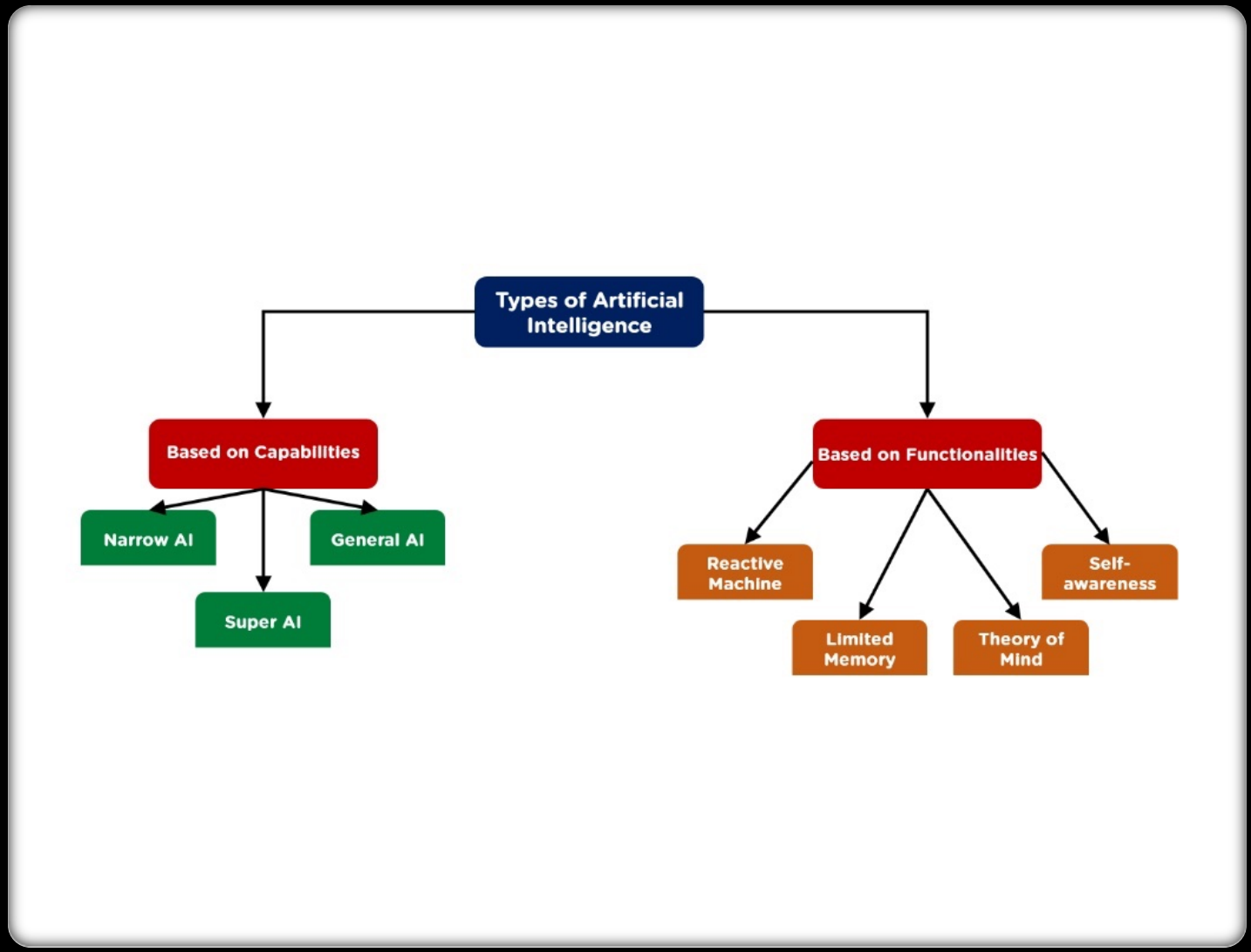
- AI models can outperform physicians in radiology diagnostic accuracy
- We can predict cardiac events based off of data collected from Internet-connected glucosimeters, scales, rhythm management units
- We can automate accurate predictions of Chronic Kidney Disease (CKD)
- Assessing and Predicting Quality of Care Gaps using Medicare Data

HINDSIGHT BIAS

UNDERSTANDING AI BY CAPABILITY AND FUNCTION

Capabilities are the general intelligence capabilities of AI, which is largely the broad theory-based categorization of AI.

Functionalities are what the real descriptions of what AI actually does. All four functionalities can exist with in each of the capabilities. Some are ONLY hypothetical.



AI STUDY: SENTENCING

PRO:

Can enhance efficiency and fairness

Can increase transparency

CON:

Data with implicit bias can embed implicit bias in algorithms

Can decrease transparency

AI IS CALLING YOU FROM INSIDE THE HOUSE

YOUR CAR

YOUR PHONE

YOUR FINANCES

MANUFACTURING OF PRODUCTS YOU BUY

CUSTOMER SERVICE

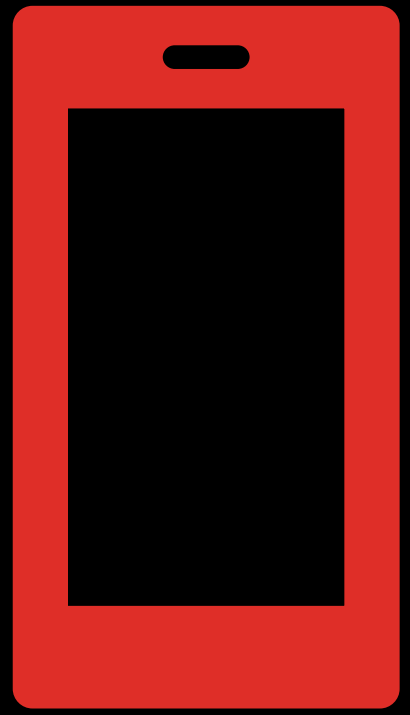
YOUR HEALTHCARE

YOUR PHONE

Compute power is orders of magnitude more voluminous than 40 years ago

available computing

place at once as compute power scales that enables AI



YOUR FINANCES

Fraud detection

Portfolio Management

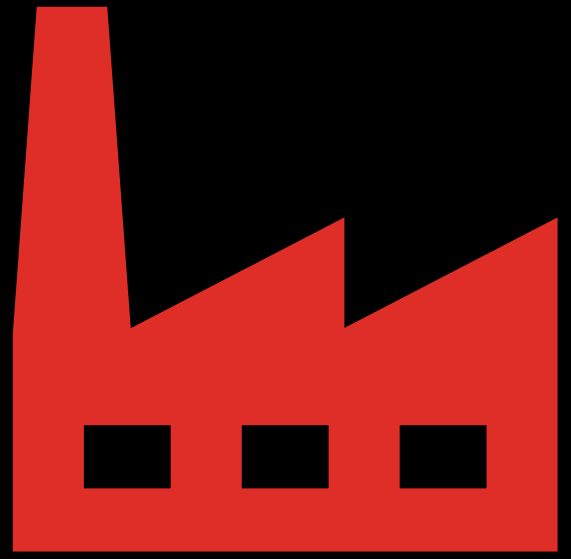
Mobile Deposits

MANUFACTURING

Augments Production Engineering

Forecasts raw material pricing

Robotics automation



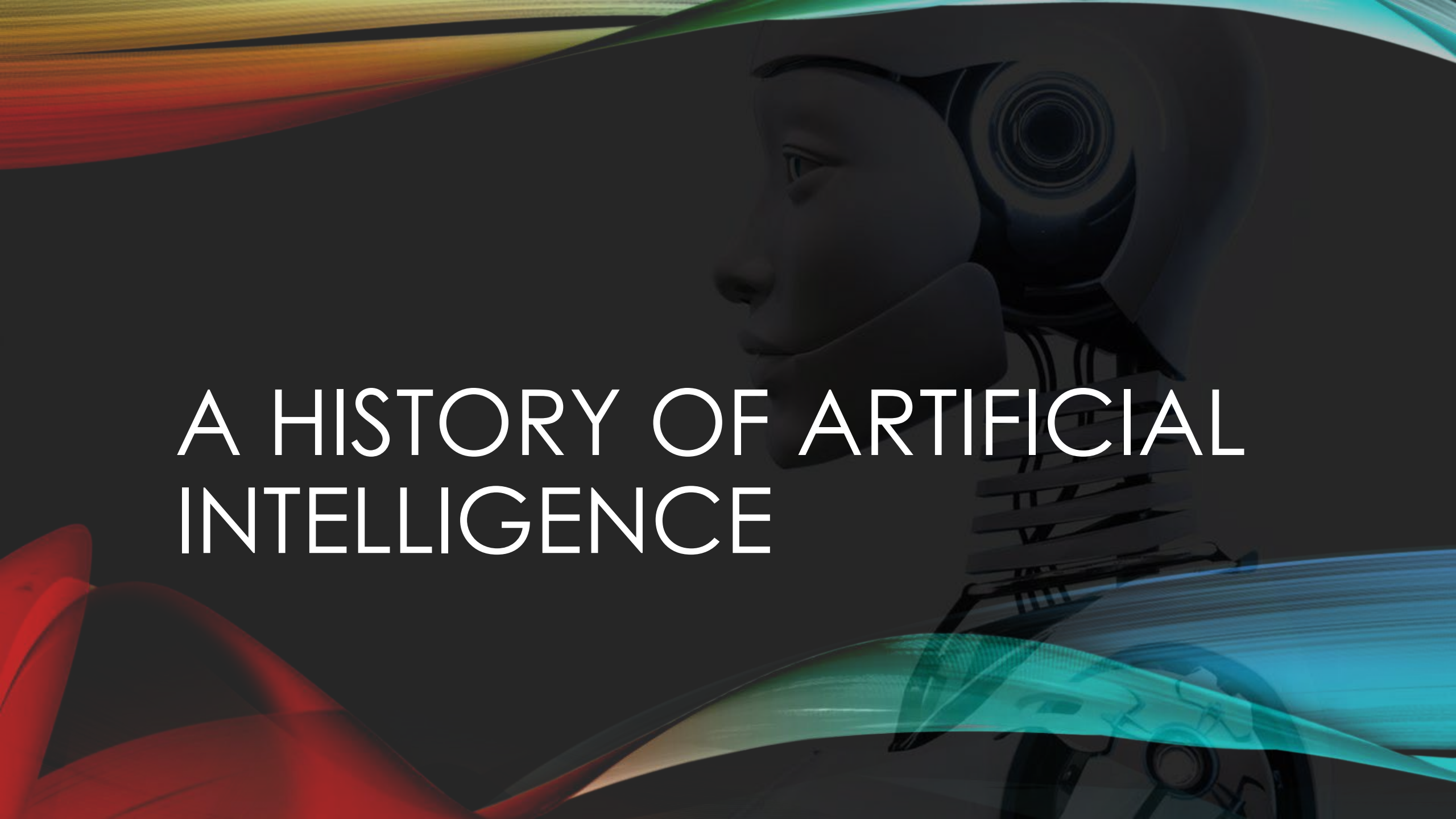
CUSTOMER SERVICE

Online customer service is usually driven by chat bots

Telephonic customer service will soon be AI indistinguishable from real humans

HEALTHCARE

Prototyping new medicines
Improving or replacing human diagnosis
Increasing access to care
Predicting disease
Identifying very specific at-risk populations



A HISTORY OF ARTIFICIAL INTELLIGENCE

THE TURING TEST AND COMPUTE POWER

	vowel	consonant
vowel	.128	.872
consonant	.663	.337

ANDREY MARKOV

Markov Chains are still used to model for machine learning and AI even today!

pertaining to probabilistic text generation.

HAROLD COHEN

CHATGPT, MACHINE LEARNING TRAINING, AND MY ACTUAL DYSTOPIAN NIGHTMARE

Designed to mimic a human conversationalist

Uses reinforcement learning from human feedback as well as supervised learning.

THE JEWISH ETHICS OF AI

- Digital Surveillance
- Writing Rabbinical Sermons
- Can AI be our Shabbos Goy? (we hate that term!)
- AI Robotics in *schechita*
- Automating *shatnez* checks

AI: LIES ABOUT THE HOLOCAUST AND ANTISEMITISM

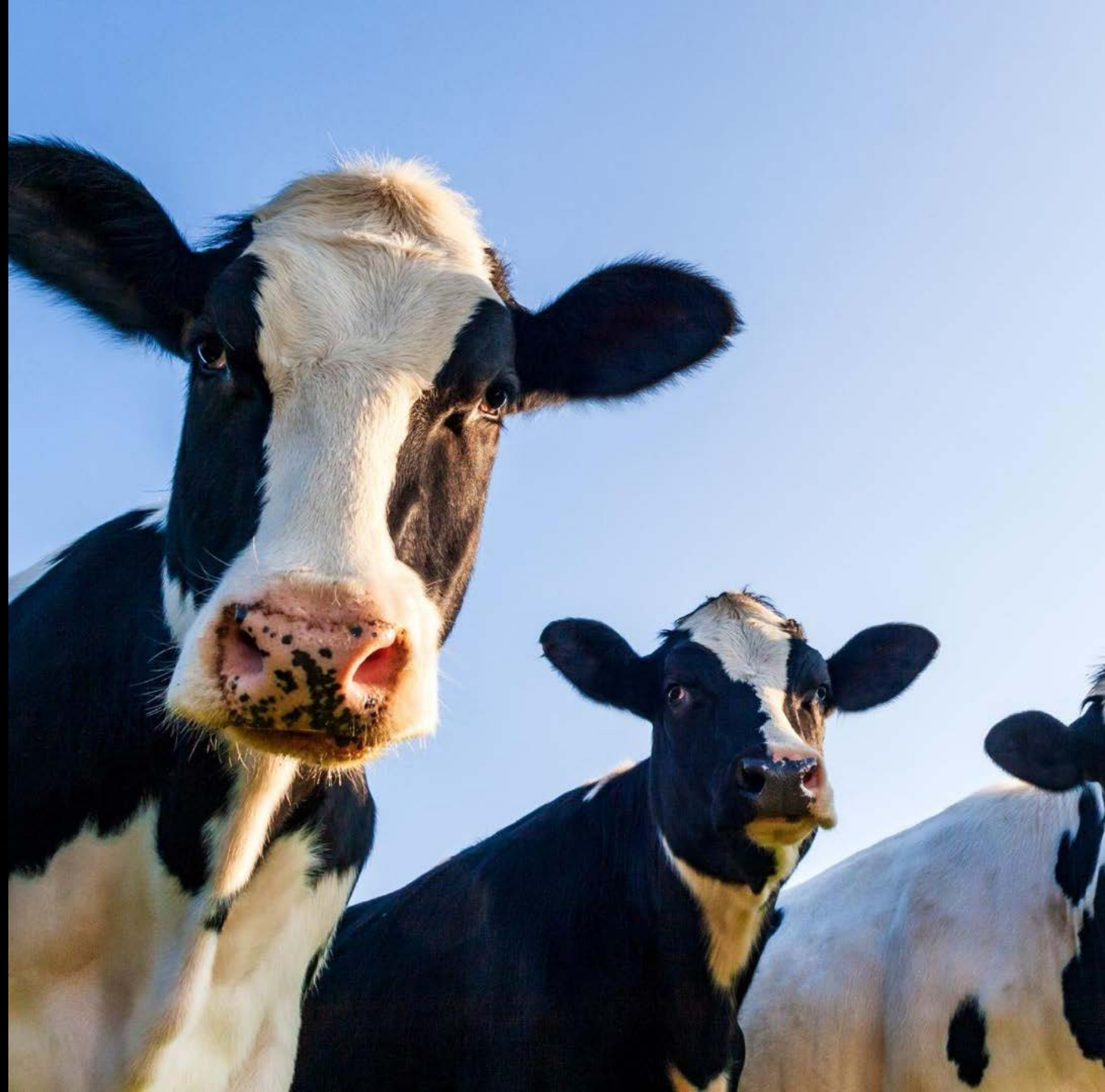
A report published in June by UNESCO and WJC indicates AI could spread false and misleading claims about the Holocaust.

Deepfakes

Simulations of historical figures, like Hitler

AI AND SHECHITA (SLAUGHTER)

- Recognize animals, people, and objects
- Recognize fevers and wounds on cows
- Analyzing physical/chemical data points on cows
- AI is instrumental in alternative protein creation

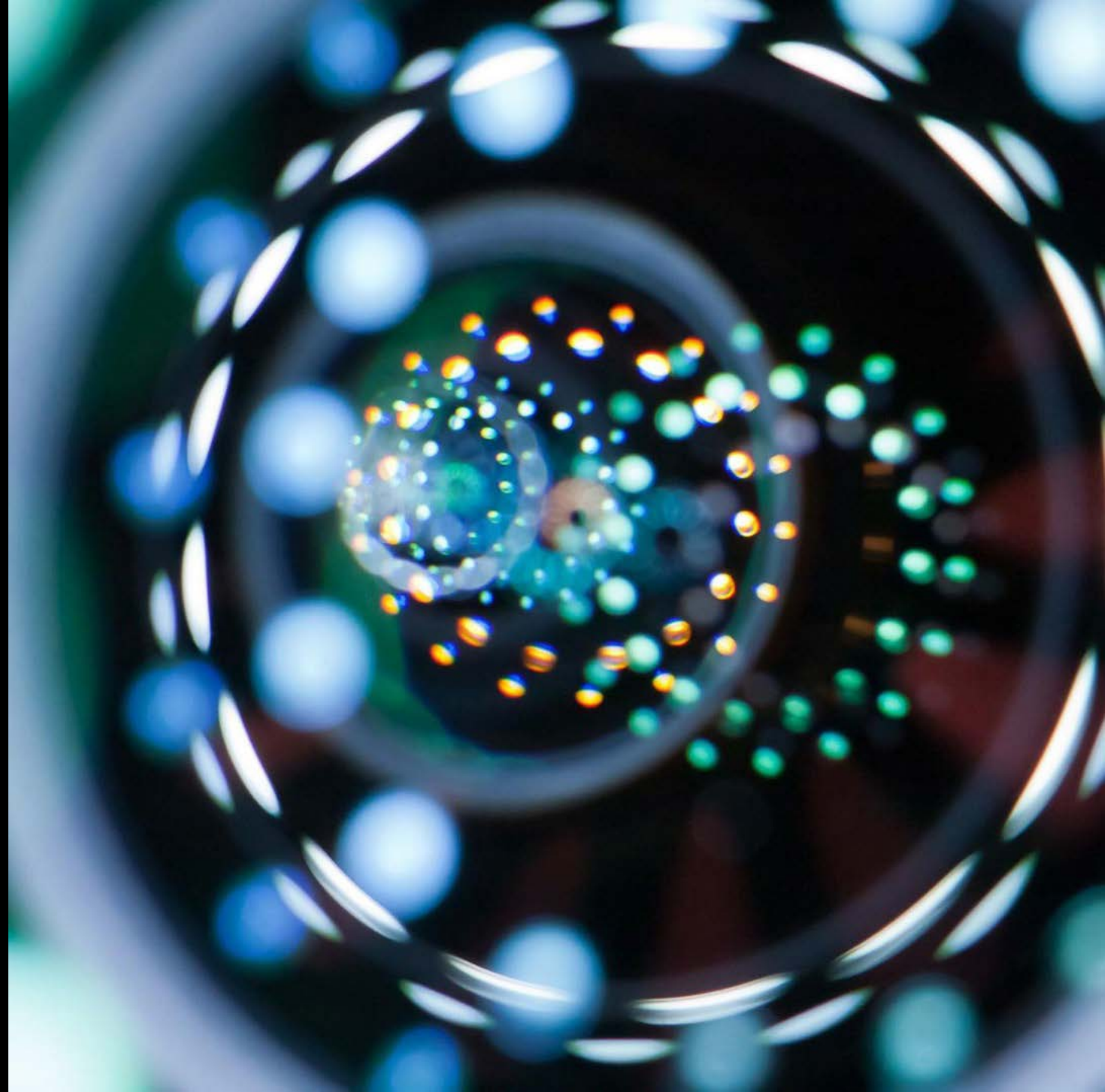


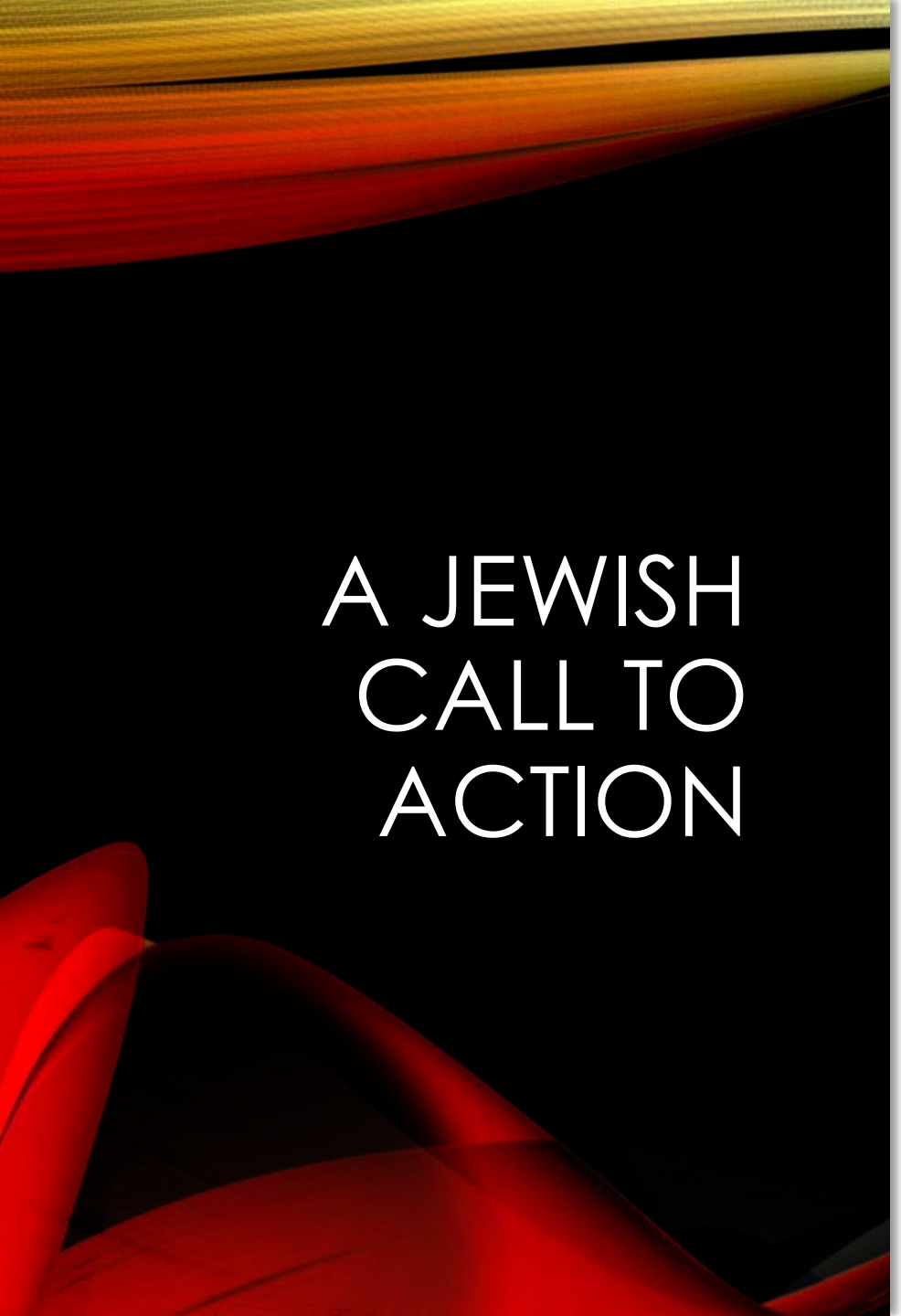
AI, DIGITAL INTRUSION, AND HUMAN DIGNITY

Mah tovu and whatnot

Hezek

Kavod habriyot





A JEWISH CALL TO ACTION

- Jews should support digital privacy laws
- Deeper regulatory control over models involving personal data
- Genetic data should not be available to offshore investors / bad actors
- Pay attention to what is happening!

QUESTIONS & CONCLUSION

Any questions about AI? Your own thoughts on its use?

RECOMMENDED READING:

Computing Machinery and Intelligence Alan Turing: https://academic.oup.com/mind/article/LIX/236/433/986238

What Artificial Intelligence has in Store for Judaim Mosaic: https://mosaicmagazine.com/essay/politics-current-affairs/2024/03/what-artificial-intelligence-has-in-store-for-judaism/

https://vuir.vu.edu.au/42484/1/From-the-Tree_of_%20Knowledge-FinalFeb24%202020.pdf contains ponderings I think are ahead of where we are

AI and the Holocaust: Rewriting History: https://unesdoc.unesco.org/ark:/48223/pf0000390211