# ARTIFICIAL INTELLIGENCE FOR ADULT EDUCATION

LETNI POSVET O IZOBRAŽEVANJU ODRASLIH

ANTHONY F. CAMILLERI – KNOWLEDGE INNOVATION CENTRE - 6 OCTOBER 2023







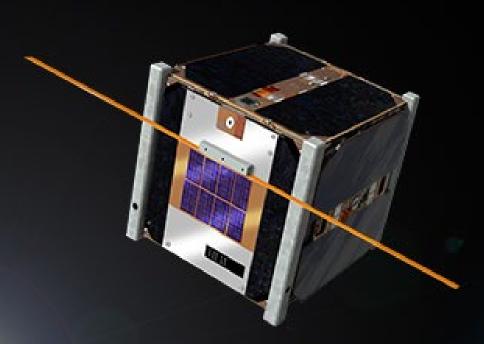


AI IS THE FUTURE



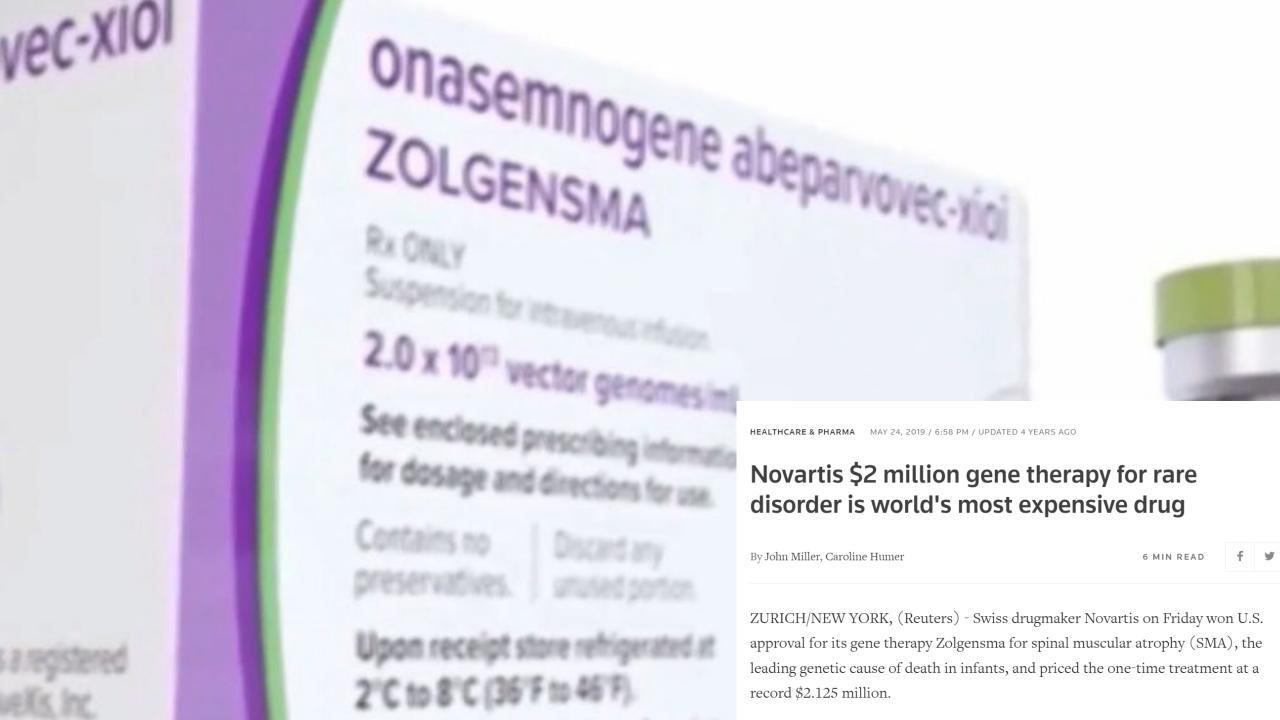


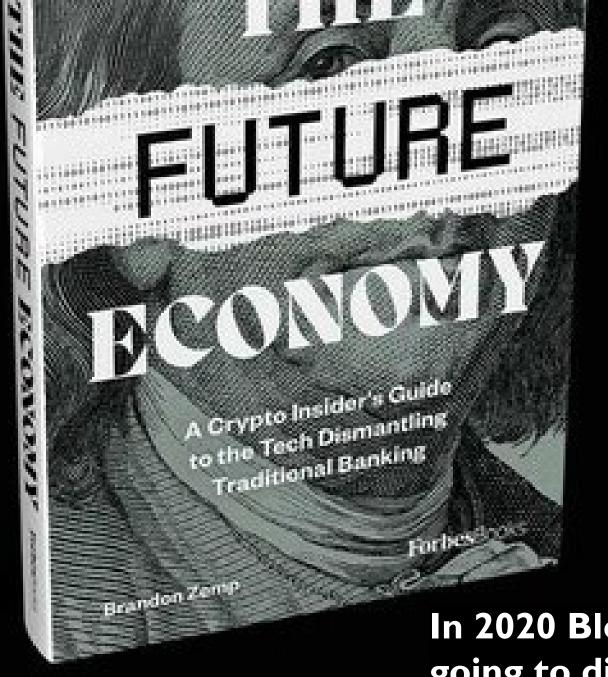
### CUBESAT



what we got is shoebox-size factories in space







In 2020 Blockchain was going to dismantle banks



### **Crypto Crash Erases More Than \$1 Trillion in Market Value**

Wealth

Pursuits

Opinion

Businessweek

US Edition ▼ Sign In

Subsc

- Biden administration said to aim for crypto executive order
- Bitcoin drops to below \$36,000 for first time since July



## TECHNOLOGIES DON'T ALWAYS GET CHEAPER

(GOVERNMENTS AND VENTURE CAPITALS HIDE REAL COSTS)



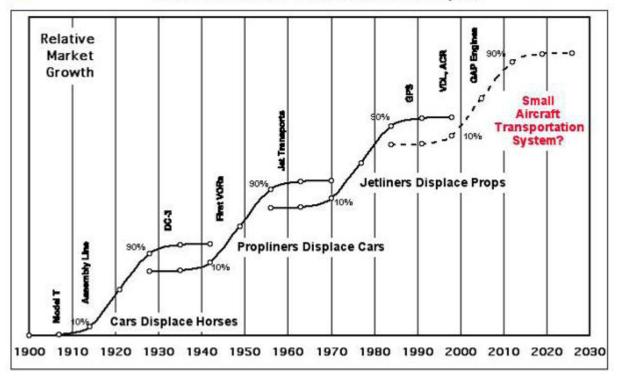
# INNOVATION IS NOT A CONTINUOUS PROCESS

#### (R)evolutions in Higher Speed Travel



G.A. I SATS Research

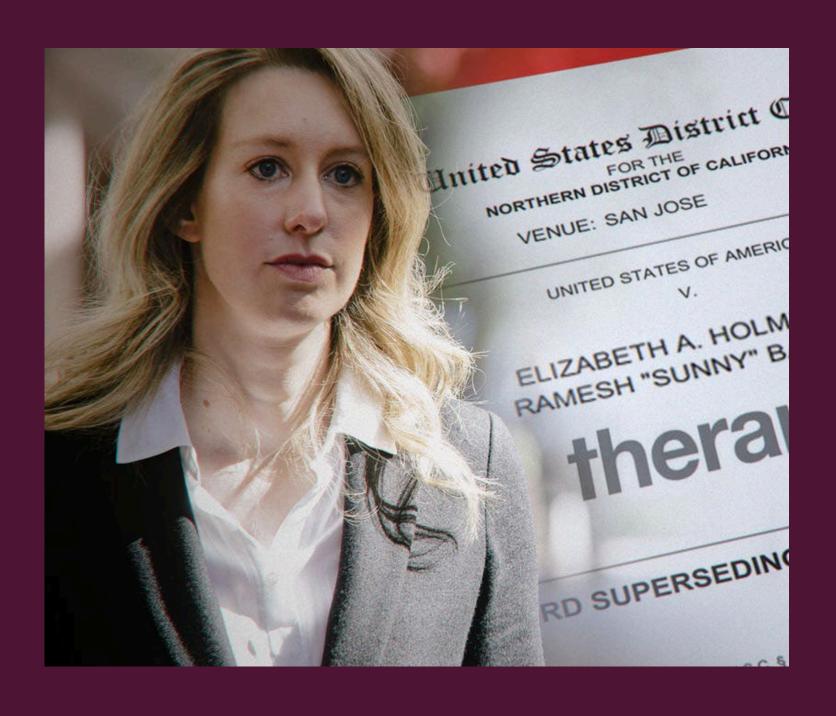
The "Atomic Structure" of Business Innovation Cycles

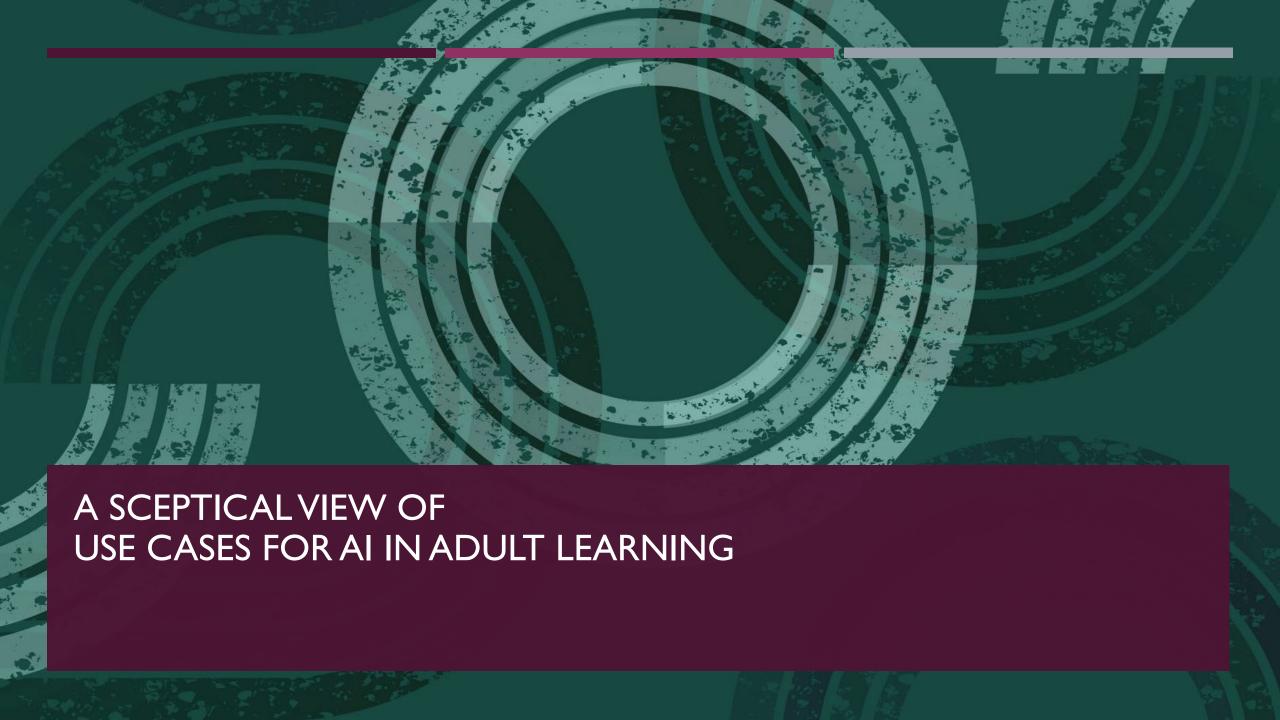


COOL
TECHNOLOGIES
DON'T ALWAYS
MEET REAL USER
NEEDS



# DEMOS DON'T ALWAYS DELIVER REAL PRODUCTS





#### **USE CASES**









Curriculum Planning

Market Surveys Translation of Content

Transformation of Content







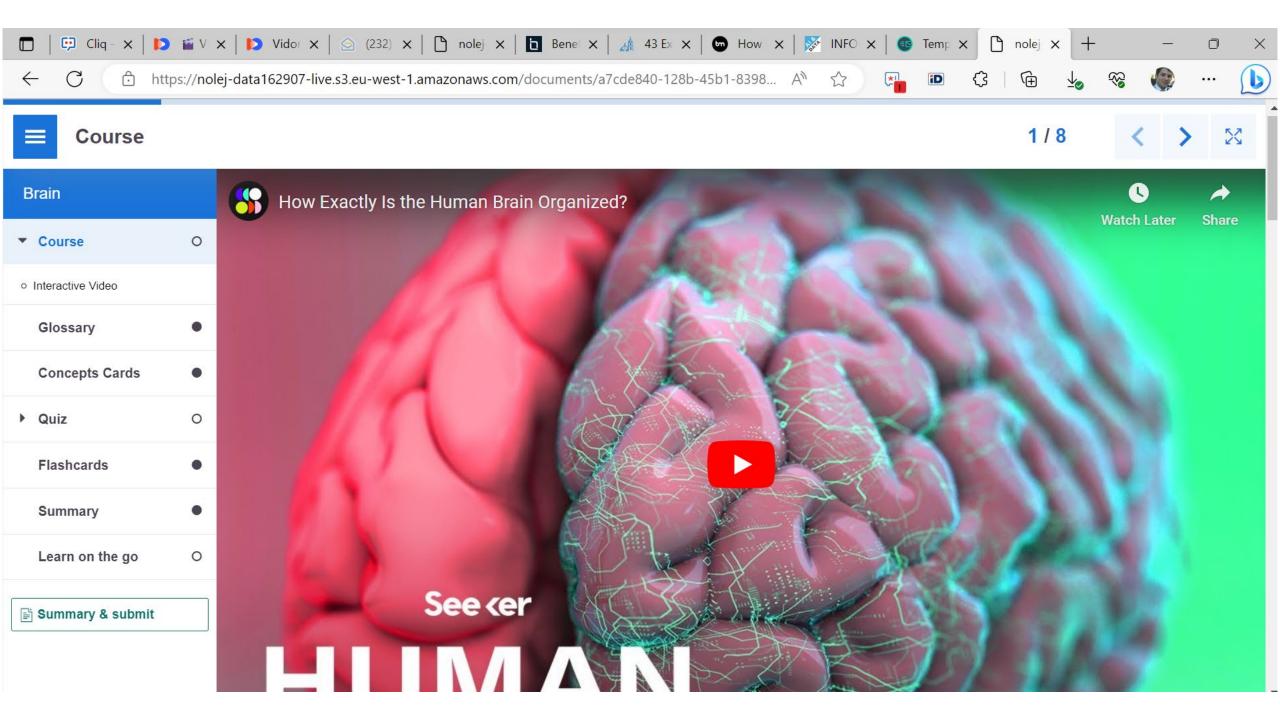


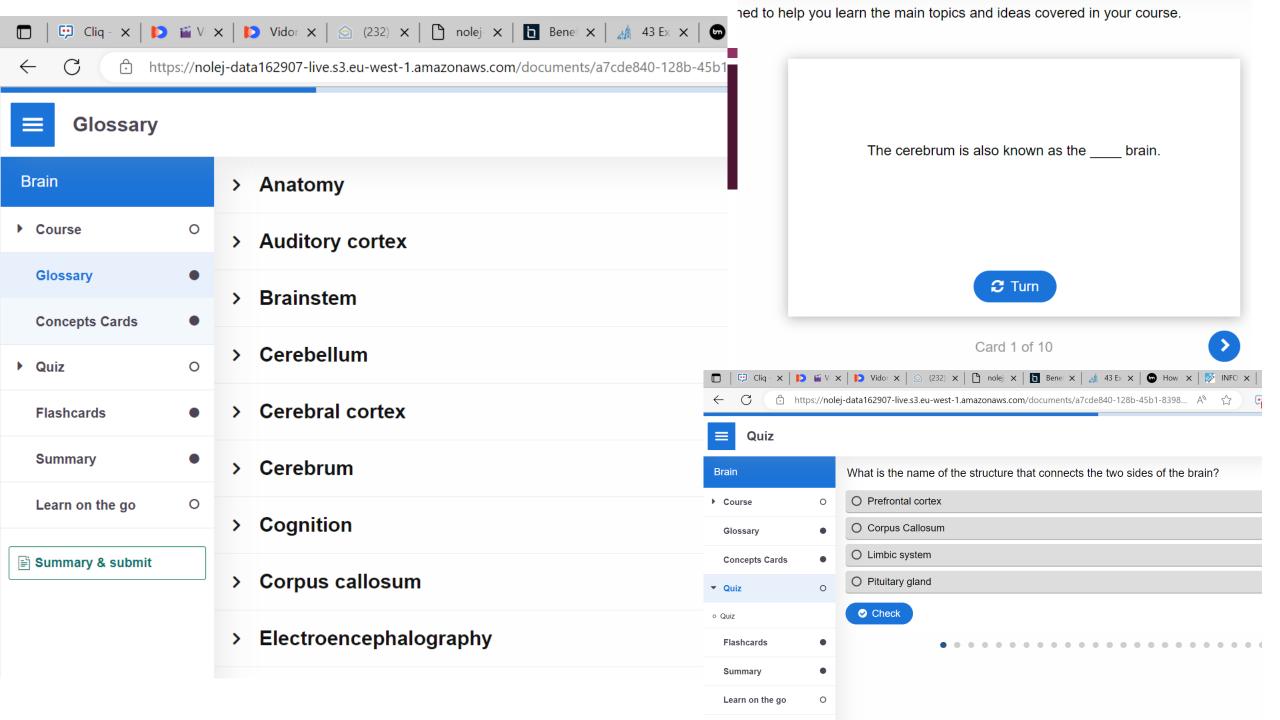
less Ilianes

Content

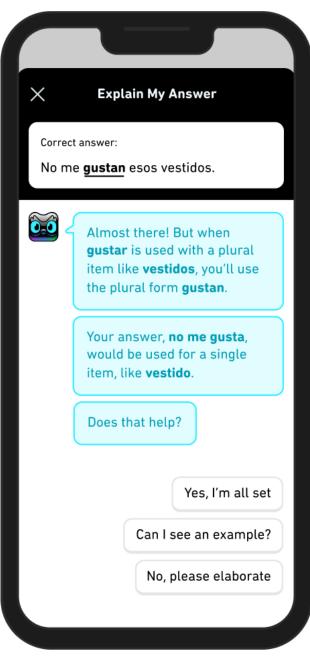
Learning Analytics

Automated Grading

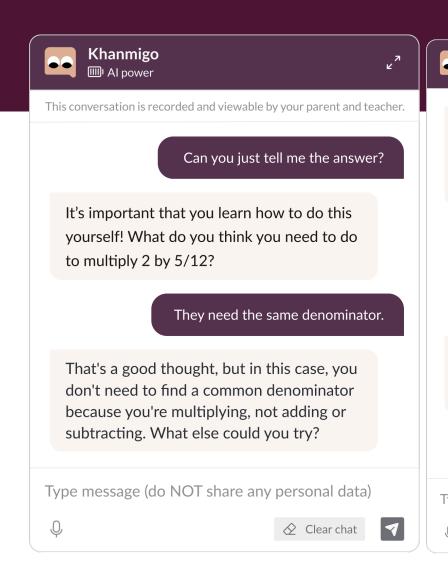


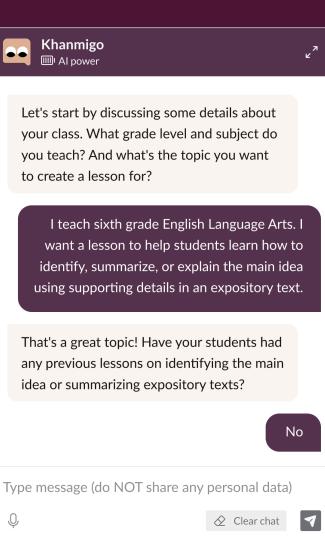


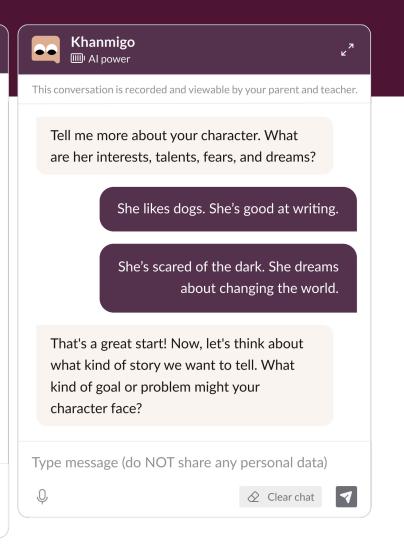


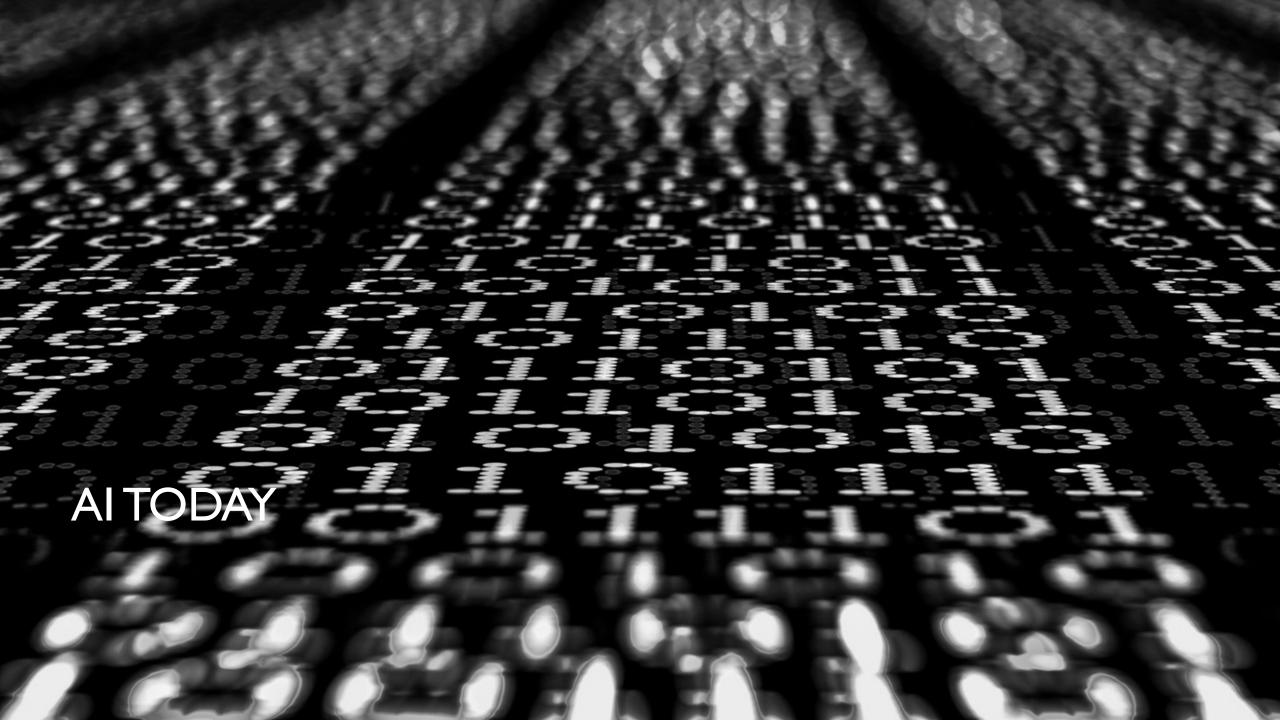














## "Al will become the calculator for writing"

Erik Brynjolfsson – Professor of Economics & Information Technology at Stanford

WIRED STAFF

SCIENCE JUN 26, 2012 11:15 AM

#### Google's Artificial Brain Learns to Find Cat Videos

When computer scientists at Google's mysterious X lab built a neural network of 16,000 computer processors with one billion connections and let it browse YouTube, it did what many web users might do -- it began to look for cats.

FEEDING AN AI
THE ENTIRE
INTERNET
DOES NOT
MAKE A
TEACHER

### THIS IS YOUR MACHINE LEARNING SYSTEM? YUP! YOU POUR THE DATA INTO THIS BIG PILE OF LINEAR ALGEBRA, THEN COLLECT THE ANSWERS ON THE OTHER SIDE. WHAT IF THE ANSWERS ARE WRONG? JUST STIR THE PILE UNTIL THEY START LOOKING RIGHT.

Generalised LLMs can be used to learn general skills

Specialised LLMs can be used to learn specialised skills



Massively accelerate our ability to ingest and compare information



Massively accelerate the process of media creation



Replace many forms of Tutoring



Lower Costs of Content Translation

#### IN THE SHORT-TERM AI WILL ALLOW US TO

#### **HOW AI COULD CHANGE THE JOB MARKET**

ESTIMATED NET JOB CREATION BY INDUSTRY SECTOR, 2017-2037



Scientific and technical

Communications

Hospitality

Education

Administrative and support services

Other sectors

Wholesale and retail

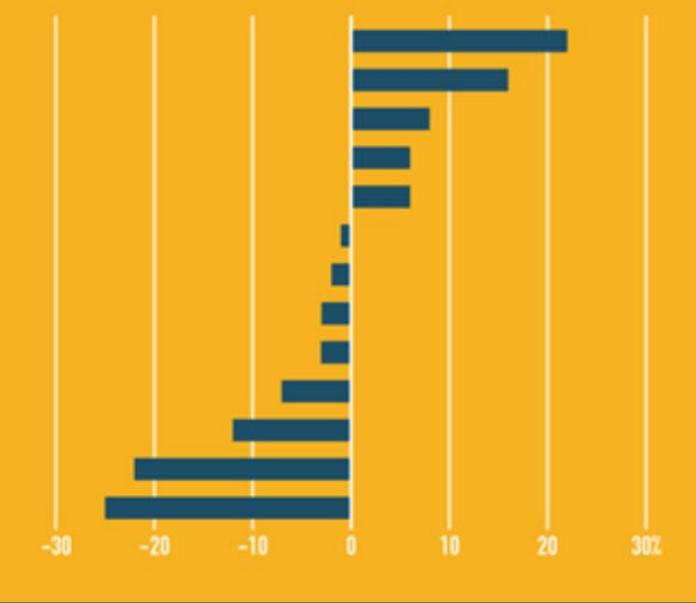
Construction

Financial and insurance

Public administration and defence

Transportation and storage

Manufacturing





USE AITO
FIND THE
HOLY GRAIL

Massively accelerate our ability to ingest and compare information



Integrate different materials and methods from hundreds of courses

Massively accelerate the process of media creation



package learning in multiple formats: textbook, stories, presentation, video

Replace many forms of Tutoring



Make personalised tutoring part of every homework assignment

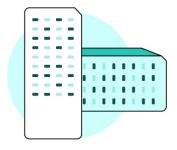
Lower costs of Translation



Enable new Forms of Multi-Lingual Learning

#### IN THE SHORT-TERM AI WILL ALLOW US TO

#### **User-Interface Paradigms of Computing**

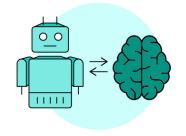


Paradigm 1

Batch Processing



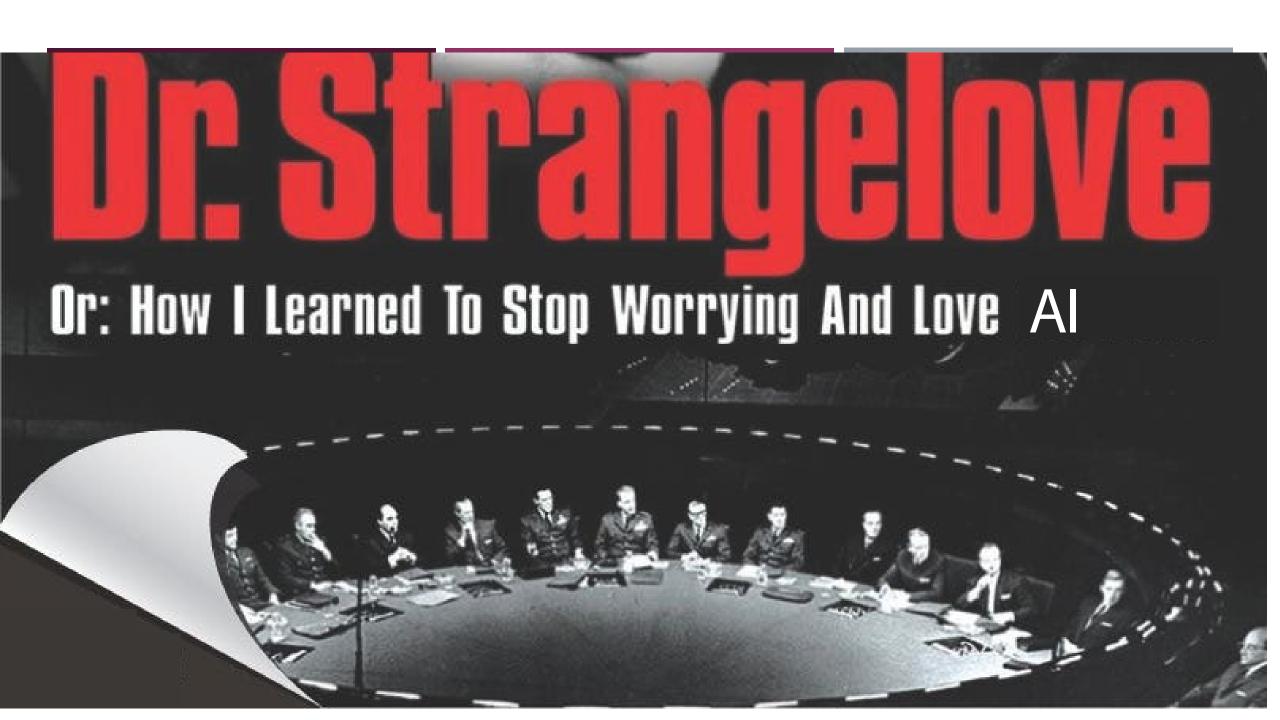
Paradigm 2
Command-Based
Interaction



Paradigm 3
Intent-Based
Outcome Specification

NNGROUP.COM NN/g

# AI WILL ALLOW US TO INTERACT WITH TECHNOLOGY IN NEW WAYS



#### PARANOID RESPONSES

Ban it instead of understand it

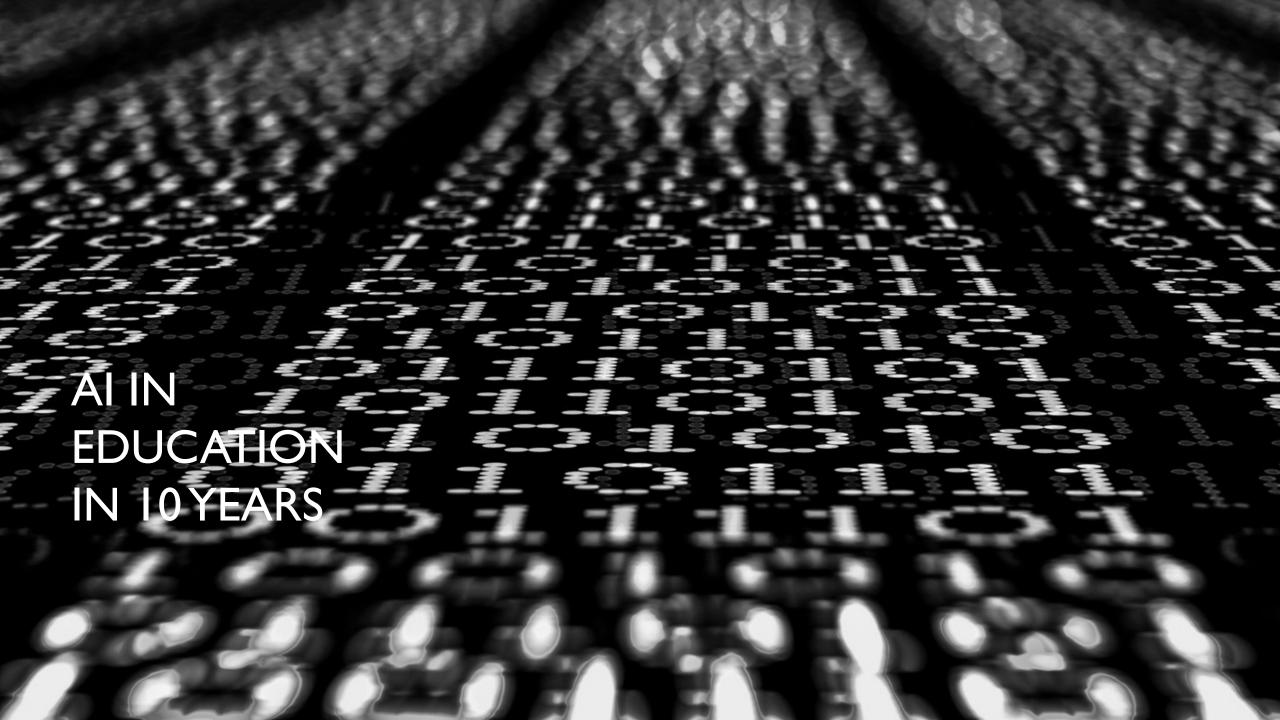
Hide Content from the Robots

Worry aboutSkyNet

Call the Unions







### Generative AI and the Future of Work

Generative Info

Collection

Generative Research

Generative

Insights

Generative Automation

Generative

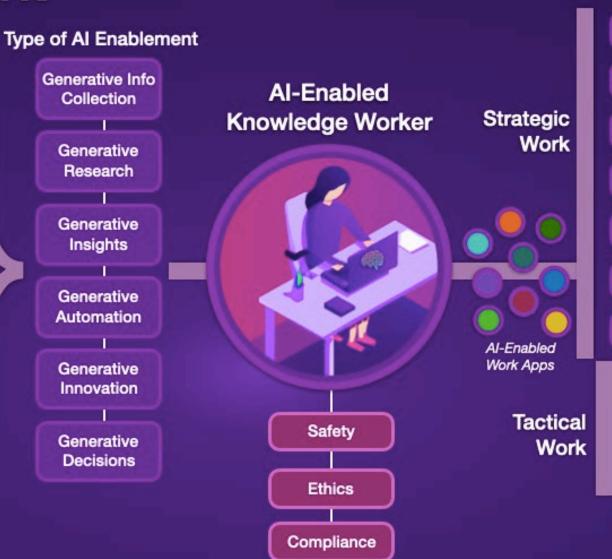
Innovation

Generative

**Decisions** 

external Al Foundation Models of Global Knowledge internal Al Foundation Models of Enterprise Knowledge

Other Al Models and Frameworks, Including Near-AGI



**How Artificial Intelligence Will** Reshape the Workplace and **Employee Experience** 

Pursuing new markets

Enhancing products and services

Designing CX/EX experiences

Imagining new products + processes

Creating + using unique knowledge

Communicating + collaborating

Making better decisions, faster

Optimizing business operations

**Business administration** 

Gathering needed information



## OpenAl's CEO Says the Age of Giant Al Models Is Already Over

Sam Altman says the research strategy that birthed ChatGPT is played out and future strides in artificial intelligence will require new ideas.



#### **SCENARIO A**







Adding variety and lower costs within the boundaries of an outdated model of massified education

#### **SCENARIO B**



Creating a completely new paradigm for personalised learning

NOONE IN
HISTORY HAS
EVER DEPLOYED
PERSONALISED
LEARNING AT
SCALE



#### THE ROLE OF SKILLS



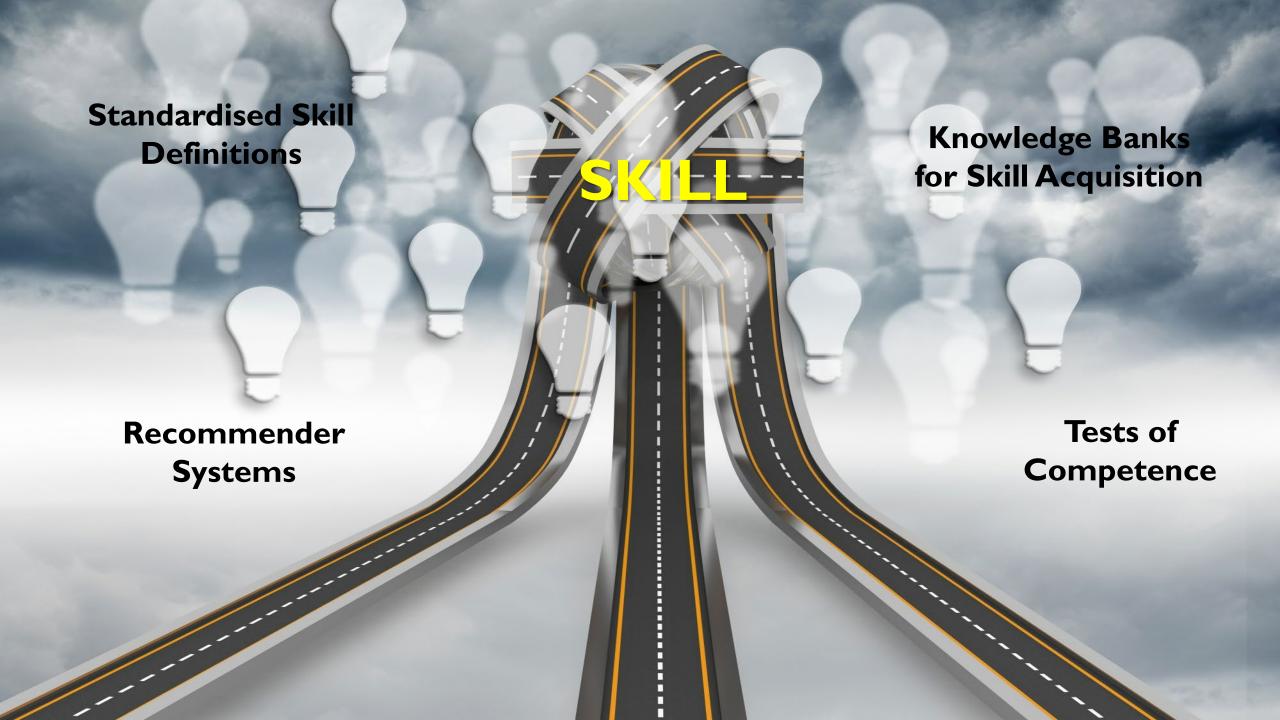


Personalised Learning at Scale means a move from:

I want to **STUDY** 



I want to **LEARN** 



#### SOME BORING IMPORTANT QUESTIONS

- Does standardised assessment make sense when we can test knowledge acquisition and application in different ways, suited to a learner's character?
- How do we Quality Assure partially automated teaching and assessment?
- Does the profession of teaching need to change into 'learning designers/engineers' and 'tutors'?
- Can we design new multi-lingual learning methodologies based on an assumption of high quality translation and localisation?
- How do we curate and share knowledge to build the right Al?



The art of teaching is the art of assisting discovery.

MARK VAN DOREN

### THANK YOU FOR YOUR ATTENTION

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**LETS DISCUSS!**