AI for Educators

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How does GenAI enhance <u>learning</u>?

Students Generate Stuff

- Using **Generative Artificial Intelligence**

- **Text** inputs turn into new _____ outputs

Text

Audio

Image

Video

Code

Asynchronous Instruction?

Like reading this slide, **triangle**.

https://vimeo.com/945587328

How does GenAI enhance <u>teaching</u>?

GenAI Text-to-Speech

IIElevenLabs

Hear The Question

Hear The Answer

Question 2 — 0 / 1 pts

A human has the choice to spend 14 hours working or learning. If they spend an hour working, they earn $20. If they spend an hour learning, then they can expect to progress through 4 course concepts. What is their opportunity cost if they change from working 12 hours and learning 2 hours, to working 14 hours and learning 0 hours?

- ○ they forgo $58, and forgo learning 9 course concepts
- ○ they gain $40, and forgo learning 8 course concepts
- ○ they gain $13, and forgo learning 9 course concepts
- ○ they gain $44, and forgo learning 10 course concepts

1. Because of scarcity, we must often choose between things instead of getting both.
2. In this example, we learn that a human has 14 hours total available.
3. Next we learn they earn $20 an hour and go from working 12 hours to working 14 hours, thus they gain $40
4. We also learn they learn 4 course concepts an hour and go from learning 2 hours to learning 0 hours, thus they forgo learning 8 course concepts

GenAI Guest Speaker Assignment

GUEST SPEAKER GPT https://chatgpt.com/g/g-FAnJEXKBl-guest-speaker

Excellent choice! Adam Smith, the renowned Scottish economist and philosopher, is best known for his works "The Wealth of Nations" and "The Theory of Moral Sentiments." Let's invite him to discuss the concept of creative destruction.

Good day, esteemed audience! I am Adam Smith, and today I shall delve into the intriguing concept of creative destruction, a term not explicitly coined in my era, but one that aligns remarkably well with the principles I have discussed.

Creative destruction refers to the process by which new innovations and technologies displace old industries and economic structures, leading to progress and growth. Although this term was popularized by the 20th-century economist Joseph Schumpeter, its roots can be traced back to the very essence of the free market dynamics that I have long advocated for.

In "The Wealth of Nations," I explored the idea that competition drives innovation and efficiency. When entrepreneurs and businesses strive to outdo one another, they often introduce new products, methods, and technologies. These advancements, while beneficial for consumers and society as a whole, inevitably render some existing industries obsolete. This cycle of creation and destruction is essential for economic growth and the improvement of living standards.

Take, for instance, the advent of the steam engine. Its introduction revolutionized transportation and manufacturing, rendering many traditional methods redundant. This shift, while initially disruptive, paved the way for unprecedented economic expansion and opportunities.

However, this process is not without its challenges. Those who are displaced by new technologies often face significant hardships. It is, therefore, imperative to consider policies that can mitigate the adverse effects on workers and communities. Education, retraining, and social safety nets are crucial in ensuring that the benefits of creative destruction are broadly shared.

Now, I am curious to hear your thoughts and questions. How do you perceive the balance between innovation and the disruption it causes? Feel free to ask me anything about my views on this or related economic principles.

GenAI Critical Thinking Discussion

CANVAS COMMONS "AI WITH AI" OER COURSE

https://lor.instructure.com/resources/5dd0ec0dbf72472bb96e91a5a397ff1e?shared
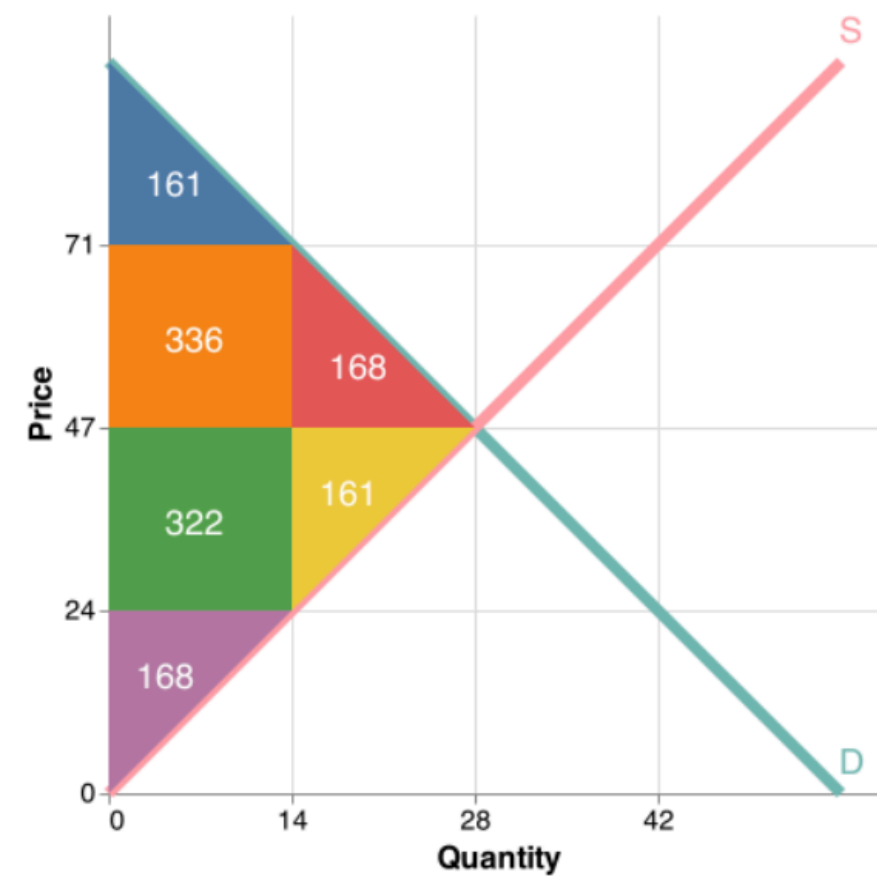
Apply Economic Concepts

This assignment includes two parts, your post and at least one reply. You must make your own post first to then see the rest of your classmates and reply. Lastly, I give you an example post to follow.

(1/2 worth 9 pts.) Please include the following information in your application post:

- **Desired job with link to OEWS page from Introduce Yourself**
- **What is the final good or service that your occupation helps create?**
- **What was the estimated demand for that final good/service last year?**
- **What are some of the employment data for your desired job last year? For example, mean/median hourly wage, annual wage, size of employment, etc.**
- **What is your estimated cost to become employed? Think of cost of training, relocation, etc.**
- **Share three potential upcoming changes to the determinants of demand and supply for the final good/service and explain how you think they will affect your desired job market.**
- **Share the Bing Chat link**

- Share three potential upcoming changes to the determinants of demand and supply for the final good/service and explain how you think they will affect your desired job market.
  - Hurricanes: because Lifeguards work at a beach, anything that prevents humans from enjoying the beach will also prevent the need for a Lifeguard. Hurricanes can cause beaches to become unsafe for visitors during the storm and for weeks after depending on the damage to the beach and its surrounding town's infrastructure. Visitors still will not come to beach if there are no hotels to stay in or restaurants to eat at. A hurricane can cause a decrease in supply by being closed down, or a decrease in demand through the decrease in consumer taste when they decide they no longer want to visit a beach without open hotels or restaurants.
  - Pandemics: because pandemics can cause additional restrictions for humans being in contact with each other, beaches close down like they did during COVID-19. If beaches close down, it has a similar affect of hurricanes and will decrease demand for Lifeguards.
  - Beach Themed Entertainment: an increase in beach themed entertainment such as Baywatch or the new Barbie movie, should increase the consumer tastes of beaches which will increase beach demand. With more visitors to the beach, we should see an increase in demand for Lifeguards.
    - *Bing Chat does an awesome job with this one. It can be quite fun thinking up different potential impacts to our desired occupation. Want job security? Regularly forecast future impacts on the demand and supply of your desired occupation.*
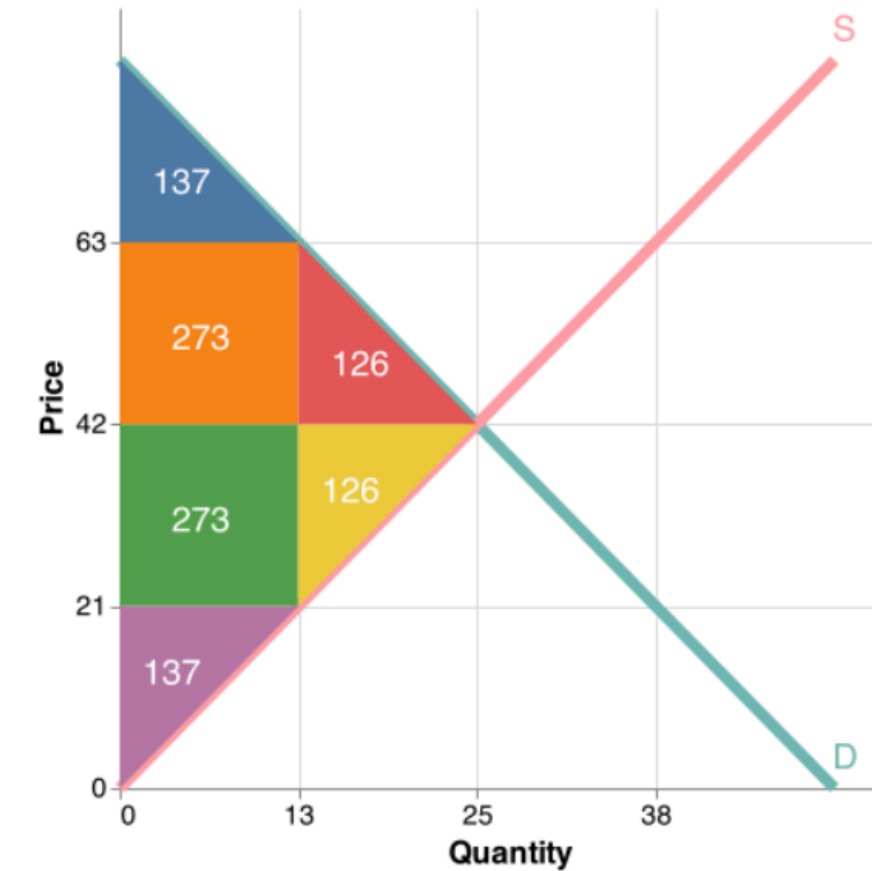
Individualized Education

Please refer to the graph above.

Assume this market is in equilibrium. What is total consumer surplus?

- ○ $329
- ○ $987
- ○ $665
- ○ $483
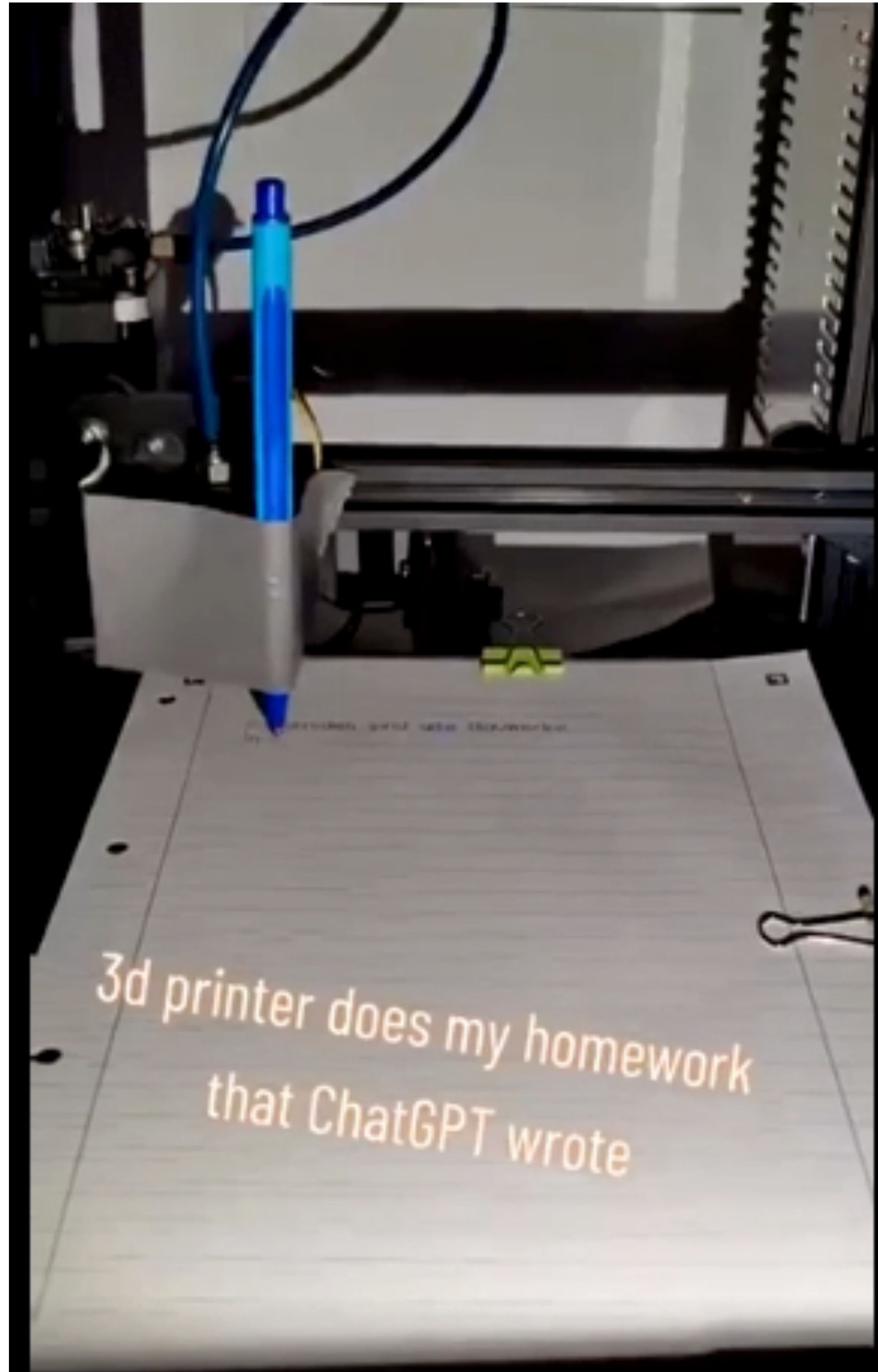
1. Consumer surplus is calculated as the area above equilibrium price but below the Demand line.
2. Equilibrium price is $47, so we add up the triangles and square above it: 161 + 168 + 336 = $665 total consumer surplus.

Please refer to the graph above.

Assume this market is in equilibrium. What is total consumer surplus?

- ○ $399
- ○ $263
- ○ $536
- ○ $809

1. Consumer surplus is calculated as the area above equilibrium price but below the Demand line.
2. Equilibrium price is $42, so we add up the triangles and square above it: 137 + 126 + 273 = $536 total consumer surplus.
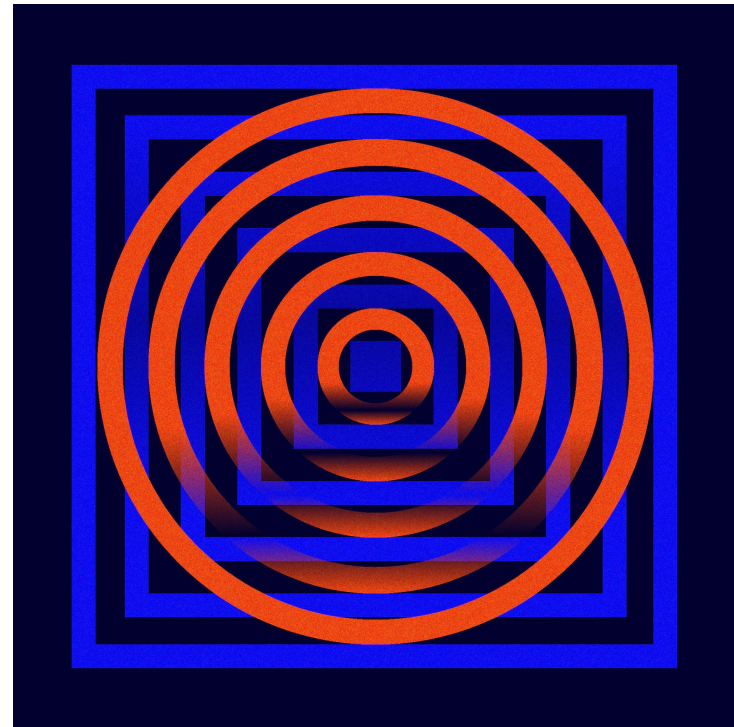
How does GenAI **challenge** teaching?

Simulated exams	GPT-4 estimated percentile	GPT-4 (no vision) estimated percentile	GPT-3.5 estimated percentile
Uniform Bar Exam (MBE+MEE+MPT)[1]	298/400 ~90th	298/400 ~90th	213/400 ~10th
LSAT	163 ~88th	161 ~83rd	149 ~40th
SAT Evidence-Based Reading & Writing	710/800 ~93rd	710/800 ~93rd	670/800 ~87th
SAT Math	700/800 ~89th	690/800 ~89th	590/800 ~70th
Graduate Record Examination (GRE) Quantitative	163/170 ~80th	157/170 ~62nd	147/170 ~25th
Graduate Record Examination (GRE) Verbal	169/170 ~99th	165/170 ~96th	154/170 ~63rd
Graduate Record Examination (GRE) Writing	4/6 ~54th	4/6 ~54th	4/6 ~54th
USABO Semifinal Exam 2020	87/150 99th–100th	87/150 99th–100th	43/150 31st–33rd
USNCO Local Section Exam 2022	36/60	38/60	24/60
Medical Knowledge Self-Assessment Program	75%	75%	53%
Codeforces Rating	392 below 5th	392 below 5th	260 below 5th
AP Art History	5 86th–100th	5 86th–100th	5 86th–100th
AP Biology	5 85th–100th	5 85th–100th	4 62nd–85th
AP Calculus BC	4 43rd–59th	4 43rd–59th	1 0th–7th

3d printer does my homework
that ChatGPT wrote

GenAI Output Identifiers: ~~OpenAI~~

As of July 20, 2023, the AI classifier is no longer available due to its low rate of accuracy. We are working to incorporate feedback and are currently researching more effective provenance techniques for text, and have made a commitment to develop and deploy mechanisms that enable users to understand if audio or visual content is AI-generated.

"Creative destruction."

– Every Economist

"Please create an abstract painting representing the economic creative destruction caused by Generative Artificial Intelligence."

– Alive Ian to ChatGPT-4o

What about the **<u>future</u>** of education?

GPT-4 Economic Impact

[GPTs are GPTs: An Early Look at the Labor Market Impact Potential of Large Language Models](#) by Tyna Eloundou, Sam Manning, Pamela Mishkin, Daniel Rock
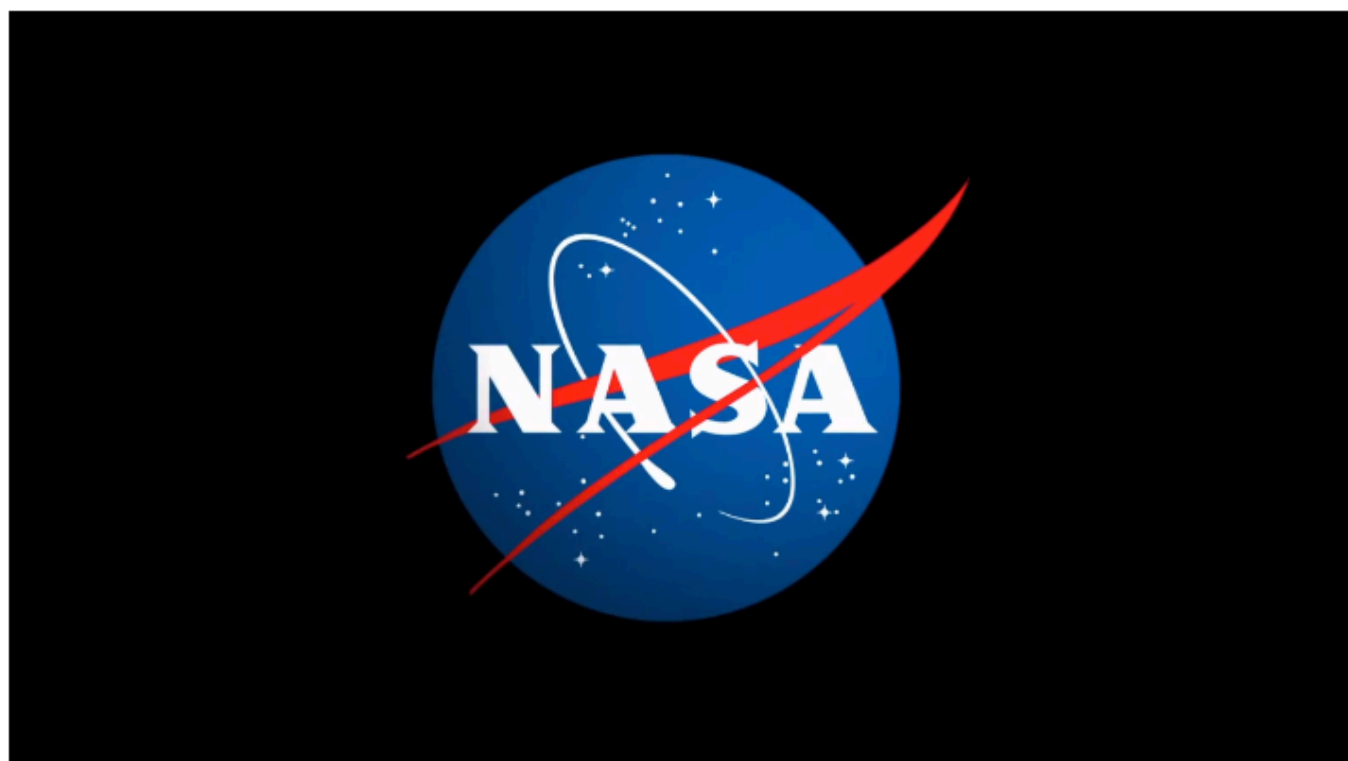
- Our findings reveal that around 80% of the U.S. workforce could have at least 10% of their work tasks affected by the introduction of LLMs, while approximately 19% of workers may see at least 50% of their tasks impacted.

- The projected effects span all wage levels, with higher-income jobs potentially facing greater exposure to LLM capabilities and LLM-powered software.

- Our analysis suggests that, with access to an LLM, about 15% of all worker tasks in the US could be completed significantly faster at the same level of quality.

- When incorporating software and tooling built on top of LLMs, this share increases to between 47 and 56% of all tasks.

Klarna

New York, NY – February 27, 2024 – [Klarna](#) today announced its AI assistant powered by OpenAI. Now live globally for 1 month, the numbers speak for themselves:

- The AI assistant has had **2.3 million conversations, two-thirds of Klarna's customer service chats**
- It is doing the equivalent work of **700 full-time agents**
- It is on par with human agents in regard to customer satisfaction score
- It is more accurate in errand resolution, **leading to a 25% drop in repeat inquiries**
- Customers now **resolve their errands in less than 2 mins compared to 11 mins previously**
- It's available in **23 markets, 24/7** and communicates in more than **35 languages**
- It's estimated to drive a **$40 million USD in profit** improvement to Klarna in 2024

Klarna has also seen massive improvement in communication with local immigrant and expat communities across all our markets thanks to the language support.

NASA safely uses a wide variety of artificial intelligence tools to benefit humanity.

AI helps us support missions and research projects across the agency, analyze data to reveal trends and patterns, and develop systems capable of supporting spacecraft and aircraft autonomously.

AI Quick Facts:

1. NASA has been safely using artificial intelligence for decades to plan and schedule missions for planetary rovers, analyze satellite datasets, diagnose, and detect anomalies, and more.

2. AI tools used at NASA sometimes involve machine learning, which uses data and algorithms to train computers on making classifications, formulating predictions, or uncovering similarities or trends across large datasets.

3. AI tools can automate time-consuming processes like program and project reviews, allowing NASA to streamline decision making, save resources, and leverage the full potential of its workforce.

DEPARTMENT OF DEFENSE

Data, Analytics, and Artificial Intelligence Adoption Strategy

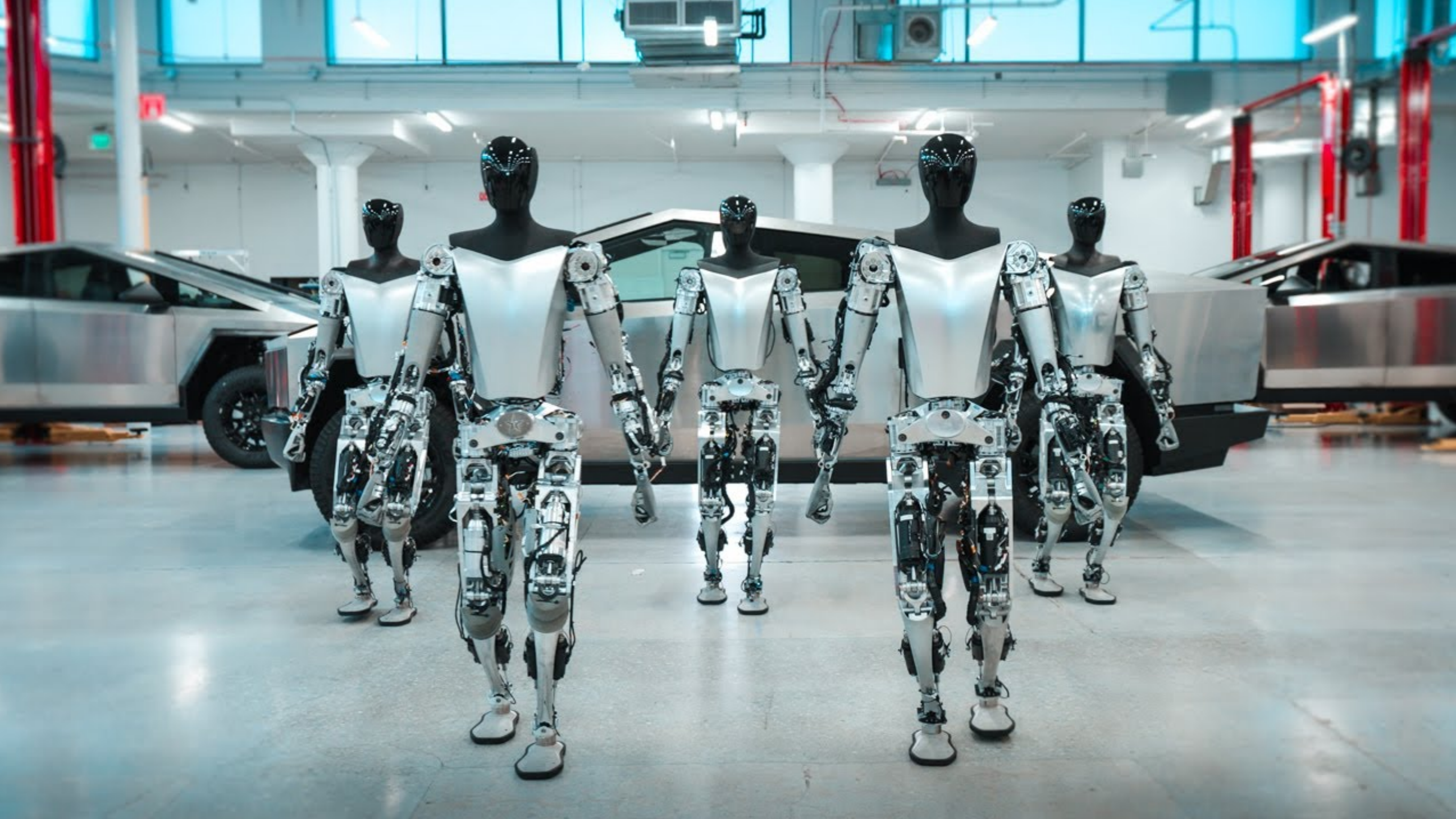*Accelerating Decision Advantage*
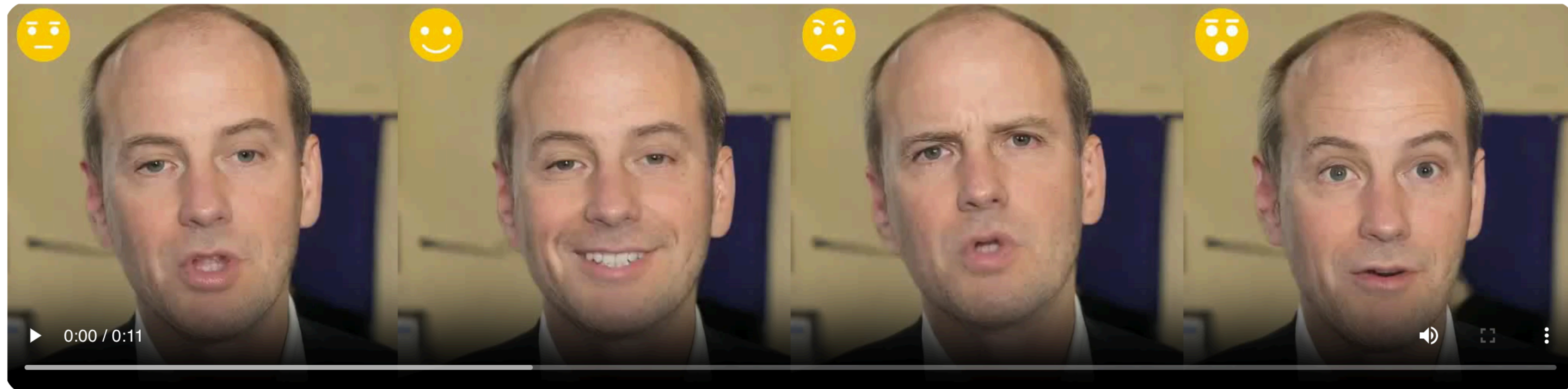
Robot

Food

Runner

maybe

swiffers the floor

too…

VASA-1: Lifelike Audio-Driven Talking Faces Generated in Real Time

VASA-1: Lifelike Audio-Driven Talking Faces Generated in Real Time

Generation results under different emotion offsets (neutral, happiness, anger, and surprise, respectively)

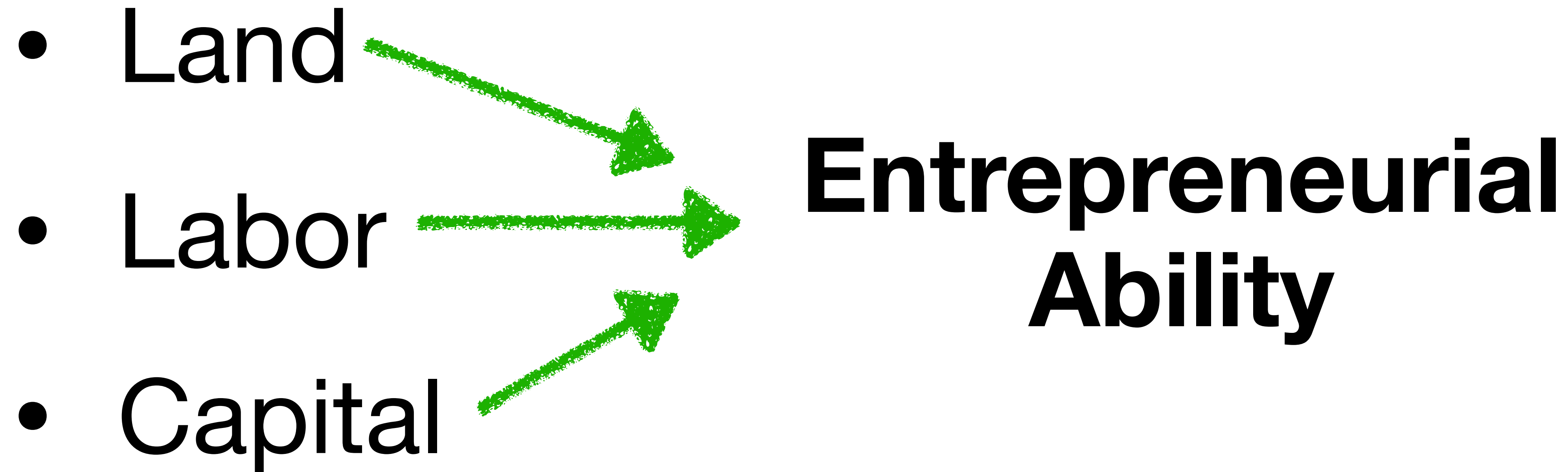# What **<u>skills</u>** should students learn?
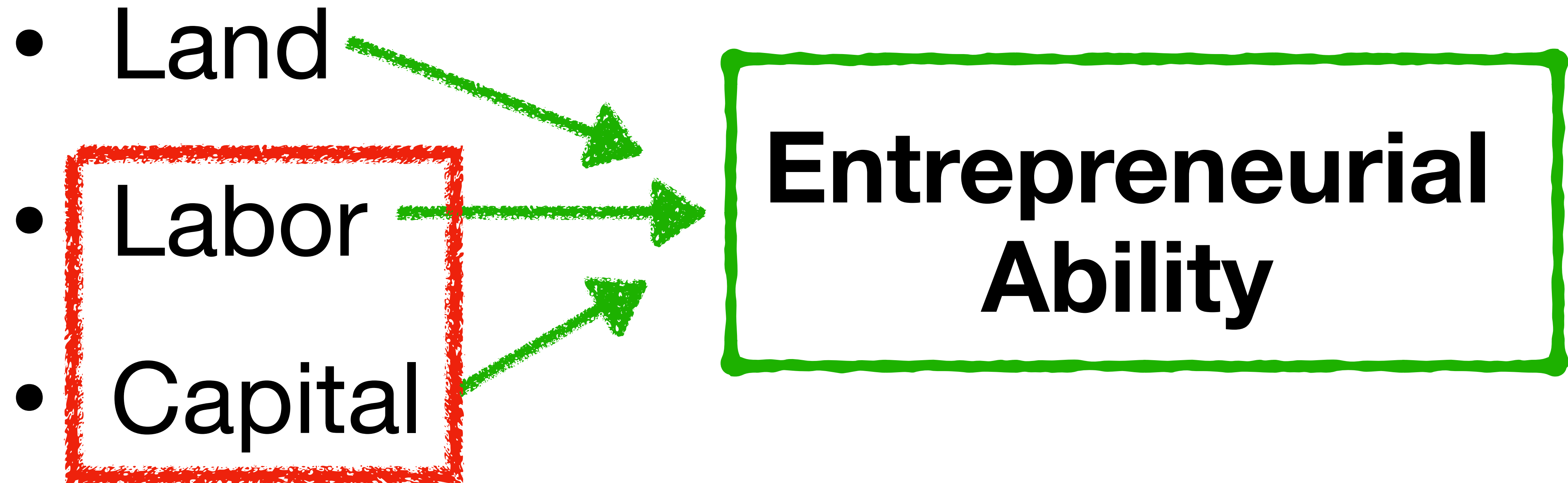
Economic Resources

- Land

- Labor

- Capital

- Entrepreneurship

Economic Resources

- Land
- Labor
- Capital

Entrepreneurial Ability

Learn Marginal Analysis

Conversion of Human Capital to Capital

- Land
- Labor
- Capital

Entrepreneurial Ability

What about the __ethics__ of it all?

SAG-AFTRA Strikes: "Digital Replicas"

"If publishing text or images generated by an OpenAI model, you are not required to attribute."

- OpenAI https://openai.com/brand/

Thank you for coming!

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