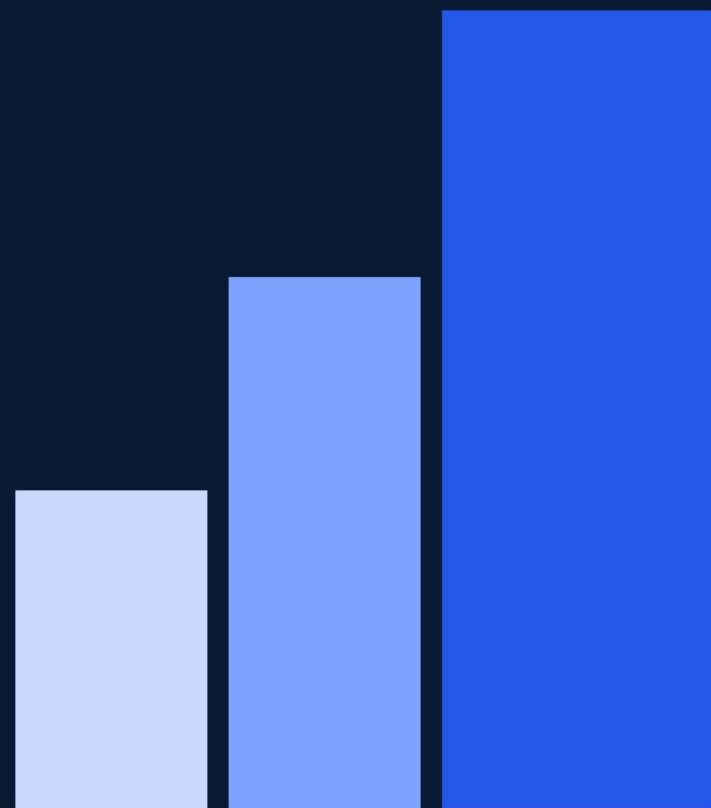


■ FORWARD PROGRESS USA · PRESENTATION

AI LITERACY

Eli Fisch & Keshav Krishnan



FOUR PARTS

01

History and status

How did AI come to be, and how does it operate now?

02

AI literacy

How can we understand, evaluate, and responsibly use AI tools?

03

Benefits and issues

What are some benefits and issues with the spread of AI?

04

Solutions to challenges

How can we combat these issues while maximizing benefits? What are leaders doing now?

AI HISTORY

1956

"AI" coined at
Dartmouth

1997

Deep Blue beats
Kasparov in
chess

2012

AlexNet: the idea
of deep learning

2018

Development of
LLMs

2023

GPT-4

2024

AI research wins
the Nobel Prize

WHAT IS AI?

A SIMPLE DEFINITION

“Computer systems designed to perform tasks associated with human intelligence, such as pattern recognition or decision making.”

An “umbrella term”

Like the word “transportation,” which has meant different things over time: a bicycle or a spaceship!

COMMON AI TASKS

RECOGNIZE

PREDICT

RECOMMEND

GENERATE

DECIDE

TYPES OF AI

Machine learning · Systems that learn patterns from data

Deep learning · Machine learning using complex neural networks

Generative AI · Systems that create new content (text, images, audio)

HOW DOES AI WORK?

HOW A MACHINE LEARNS



Training data

Examples used to teach a model.

Training

The process through which a model learns patterns.

Model

The mathematical system produced through training.

■ TRAINING EXAMPLE 1 OF 4

DOG OR CAT?

You are the model. Make a prediction, then check the label.



■ TRAINING EXAMPLE 2 OF 4

DOG OR CAT?

You are the model. Make a prediction, then check the label.



■ TRAINING EXAMPLE 3 OF 4

DOG OR CAT?

You are the model. Make a prediction, then check the label.

LABEL: DOG



■ TRAINING EXAMPLE 4 OF 4

DOG OR CAT?

You are the model. Make a prediction, then check the label.



LARGE LANGUAGE MODELS

A **large language model (LLM)** is an advanced type of AI trained on massive amounts of text. It focuses on generating human-like language.

Language models use **tokens** to predict missing or next pieces of text.

Token: a word or piece of a word.

PREDICT THE NEXT TOKEN

"Peanut butter and ____"



■ LARGE LANGUAGE MODEL (LLM)

“A deep learning algorithm that’s equipped to summarize, translate, predict, and generate human-sounding text to convey ideas and concepts.”

Definition: Investopedia

AI LITERACY

AI literacy is the ability to understand, interact with, and evaluate the accuracy of AI tools and the content they produce.

That means understanding both the potential and the limitations of AI tools, so we can make informed decisions based on the information they provide.

"Supplement, not a substitute."

FPUSA'S FOUR PILLARS OF AI LITERACY

PILLAR 1

Understanding AI

Excellence

PILLAR 2

Critically evaluating AI

Integrity

PILLAR 3

Ethical and responsible use of AI

Social responsibility

PILLAR 4

Purpose-driven and human-focused AI use

Innovation

HOW CAN AI TOOLS SUPPORT LEARNING?

01

Brainstorming and idea generation

Generate ideas for assignments, projects, and research topics.

02

Clarifying concepts and definitions

Explain difficult ideas in simple terms or give alternative explanations.

03

Study assistance and summarization

Summarize large amounts of information for review sessions, exams, or research papers.

04

Practice questions and self-assessment

Create practice questions to test your knowledge, or generate flashcards.

BETTER PROMPTS, BETTER DIRECTION

TASK

What should the AI do?

CONTEXT

What should it know?

CONSTRAINTS

What rules should it follow?

FORMAT

What should the answer look like?

EXAMPLE PROMPT

“Explain cellular respiration to an eighth grader in four steps. Define ATP and include one analogy.”

BIAS IN AI SYSTEMS

Bias in AI systems: a systematic pattern that unfairly favors or harms certain people or outcomes.

Past data can carry past inequality forward.

BIAS CAN ENTER THROUGH

1. Training data
2. Labels and measurements
3. System goals
4. Deployment decisions

PRIVACY, DEEPFAKES, AND MANIPULATION

PRIVACY

AI systems may collect or infer sensitive information.

DEEPFAKES

Synthetic media can imitate a real person's face or voice.

MANIPULATION

AI can personalize persuasion at enormous scale.

Before sharing, check:

SOURCE

EVIDENCE

CONTEXT

DOES AI MAKE STUFF UP?

Hallucination: an incorrect or invented output presented as factual.

AI can produce information that sounds confident and convincing but is inaccurate or completely invented.

TWO KEY FACTORS THAT CAUSE LLMS TO HALLUCINATE

Prediction, not knowledge

LLMs don't actually "know" facts. They predict the next word based on patterns learned from massive text data.

Training data issues

If the training data contained outdated information or fabricated web content, those errors can show up in what it generates.

HOW TO COMBAT AI HALLUCINATIONS

If you're unsure about an AI response, **ask it to provide sources**. Then open the links and check:

- 1 Does the source actually say what the AI claims?**
 - 2 Is it current and relevant?**
 - 3 Who created it, and are they knowledgeable about the topic?**
 - 4 Can you confirm the information through another reliable source?**
-

THE STUDY PARTNER

Maya asks AI to explain cellular respiration in simpler language. She then checks the explanation against her textbook and creates her own study guide.

Acceptable or unacceptable use of AI?

ACCEPTABLE

UNACCEPTABLE

THE INVISIBLE AUTHOR

Alex gives AI the essay prompt and asks it to produce the complete assignment. He changes a few words and submits it under his name without telling the teacher.

Acceptable or unacceptable use of AI?

ACCEPTABLE

UNACCEPTABLE

THE CONTROVERSIAL VIDEO

Andrew uses AI to create a realistic fake video of a friend saying something offensive, then posts it online as if it were real.

Acceptable or unacceptable use of AI?

ACCEPTABLE

UNACCEPTABLE

■ REAL-WORLD EXAMPLE

THE OBAMA-PEELE DEEPFAKE

A deepfake of Barack Obama, voiced by Jordan Peele, that sends a message about fake news.

Obama-Peele deepfake sends message about fake news



Barack Obama



Jordan Peele

WHAT ARE LEADERS DOING TODAY?

01 **Jobs and the workforce**

Leaders are studying the effects of job displacement and preparing students for a new workforce.

02 **Data and privacy**

Deepfake laws have been passed, and intellectual property concerns have been heard.

03 **Inequality**

Legislators have been working with companies on regulating AI and leveling the playing field.

04 **AI education**

Many schools have put an emphasis on student AI literacy, teacher training, and clear school-use policies.

■ AI LITERACY · FORWARD PROGRESS USA

**THANK
YOU!**

FP FORWARD
PROGRESS

■ OUR WORK

Forward Progress USA helps students understand and shape the future of AI.

850+

MEMBERS

250K+

VIEWS

20,000+

VOTER CONTACTS

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