



Colorado
Education
Initiative

&

aiEDU

The **AI Education** Project

August 30, 2023



Introductions



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HS Chemistry
HS Graphic Design
CTE



Institute for
Human-Centered AI
Stanford



AI Education Project
(aiEDU)

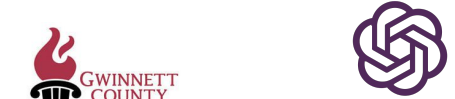
The AI Education Project is a 501(c)(3) non-profit that creates equitable learning experiences to excite and empower students with AI literacy.

We believe that everyone—especially those who are likely to be disproportionately impacted by AI systems—should have access to the conceptual knowledge and skills they need to thrive as workers, creators, consumers, and citizens.





Patrick J McGovern
FOUNDATION



OpenAI



Booz | Allen | Hamilton



NVIDIA





The Challenge for Educators

Part 1

The generative AI explosion: What is going on?



ChatGPT



Examples

"Explain quantum computing in simple terms" →

"Got any creative ideas for a 10 year old's birthday?" →

"How do I make an HTTP request in Javascript?" →



Capabilities

Remembers what user said earlier in the conversation

Allows user to provide follow-up corrections

Trained to decline inappropriate requests



Limitations

May occasionally generate incorrect information

May occasionally produce harmful instructions or biased content

Limited knowledge of world and events after 2021

Send a message...



AI as we've known it: **Prediction/Curation AI – “Mostly Invisible”**

Content Optimization



TikTok

NETFLIX



Machine Vision and Autonomous Mobility



TESLA



WAYMO

cruise



BostonDynamics



JOHN DEERE



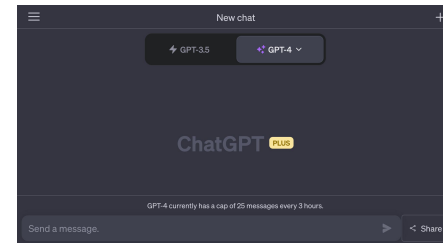
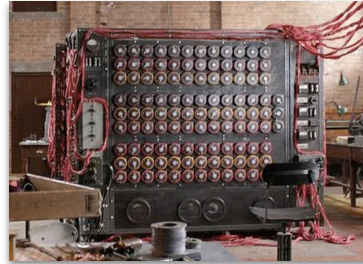
Other types of prediction and analysis



J.P.Morgan



What happened? The biggest technology breakthrough in human history



AI today: **Generative AI – “Creation AI”**

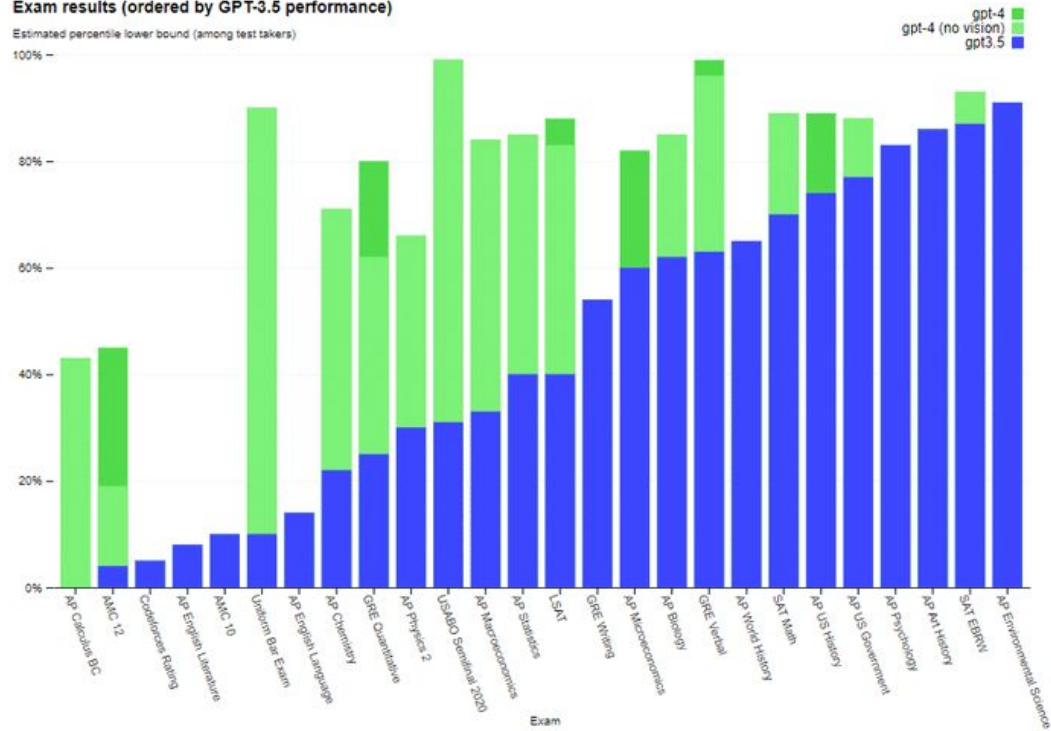


SHARE OUT:

**Have you used any Generative AI tools on your own?
Which ones?**

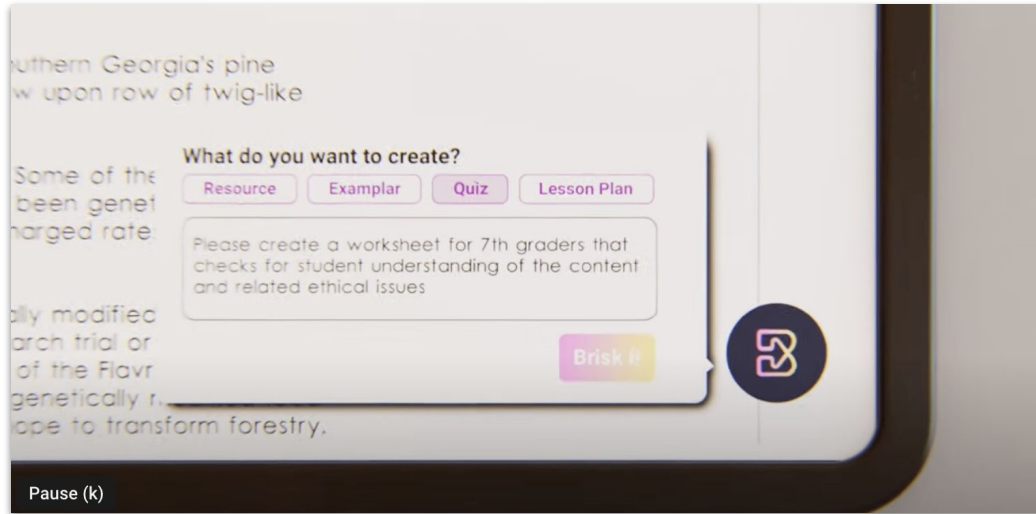
Exam results (ordered by GPT-3.5 performance)

Estimated percentile lower bound (among test takers)

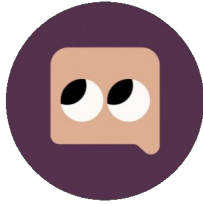


(Kosinski, 2023)

AI for Educators: Brisk Teaching



AI for Educators: Khanmigo from Khan Academy



Khanmigo
AI power

Let's start by discussing some details about your class. What grade level and subject do you teach? And what's the topic you want to create a lesson for?

I teach sixth grade English Language Arts. I want a lesson to help students learn how to identify, summarize, or explain the main idea using supporting details in an expository text.

That's a great topic! Have your students had any previous lessons on identifying the main idea or summarizing expository texts?

No

Type message (do NOT share any personal data)

Clear chat

Let's talk about CHEATING ...





AI in Education: What's Happening?

What are school districts, ESAs, teachers unions, government organizations, etc. doing across the country?

- Establishing Communities of Practice
- Building nimble teams and guidelines
- Brining in several stakeholder groups

The challenge:

How can schools address AI as it changes SO QUICKLY?!



Let's Chat!

What does this make you think about your approach to AI for your district?

What do you need to be successful?





What can we do?

Part 2

AI is the most revolutionary technology in decades on par with computers, the internet, and mobile phones.

Bill Gates, American business magnate and co-founder of Microsoft - 2023



Startups to TECH Giants Call Colorado Home

- CO tech industry has been one of the fastest growing sectors in the state
- State tech ecosystem encompasses a wide range of fields: Software development, aerospace, cybersecurity, energy, data science ...
- Demand for skilled tech professionals is consistently high in CO
- Presence of top-tier universities and research institutions continue to contribute to a skilled workforce, but this is not enough

CTA information



Colorado TECH and Innovation

- Colorado's tech industry accounts for **9%** of employment and **18%** of gross state product
- Over the next five years, tech occupations will grow by **11%**
- In 2021, there were 272,461 employees in tech equal to **9.4%** of state total employment
- **35** Postsecondary institutions had **5,100** degrees or certifications completed in Computer Science

Colorado is experiencing increased growth and **struggles to fill open job positions.**

CTA & Lightcast 2022 statistics

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Colorado K-12 Update

- Growing interest in expanding CS Education in schools now **add AI ED**
- CS State standards – developed and adapted by CDE in 2018
 - **Create AI standards across all content areas**
- CS Curriculum– many School Districts offer courses from Introduction to AP **add AI integration to all classes + AI specific courses**
 - 57% of all public HS teach a CS course (code.org); 154 schools teach AP CS in Colorado
 - 2,697 exams were taken in AP by CO high school students in 2022
 - 27% taken by females, 390 exams taken by Hispanic/Latino, 63 exams taken by Black/African American students
- Teacher Training– Efforts have been made to provide PD and certifications
 - CDE: CS Teacher Education Grant Program opens October 2023
 - Industry partners provide Certifications for teachers: IBM and CISCO
 - **AI Certification**
- Equity & Access–emphasis by organizations in the ED ecosystem
- Legislation and Policies – CO continues to integrate and promote the importance of CS in K-12 education (HB20-1360 \$801,657 Teacher grants/HB19-1277 increase enrollments of underrepresented students)+ **Add AI focus**



What can we do in Colorado to support Education with the implementation of Ai in our ecosystem?

CEI and aiEDU Next Steps

CEI and aiEDU will collaborate over the course of the 2023–24 school year to:

- 1) Launch a growth–state steering committee to explore policy and practice implications.
- 2) Build AI awareness through a series of virtual summits and speaking engagements.
- 3) Explore statewide AI needs and perceptions.

Statewide Steering Committee

- Launch and facilitate Statewide Steering Committee
 - Engage in a series of work sessions identifying policy and practice priorities, creating a AI roadmap. The steering committee will be informed by 4-5 task force groups:
 - Standards
 - Teacher workload reduction/retention of teachers
 - Curriculum
 - Policy
 - Research/Pedagogy
 - Attend virtual convenings and an in-person meeting at the end of the year.
 - Complete the AI in Ed Interest form. The link is in the chat or visit the CEI website

Dates to Save on Your Calendar

September 8: Complete the interest form posted in the chat or on CEI website

September 27: AI Webinar: 12-1p (MST)

Websites:

CEI - <https://www.coloradoedinitiative.org/>

AIEDU - <https://www.aiedu.org/>

QR Code for the Interest Form:





Resources

not a part of presentation, but available to share with attendees

**Resources from our
network/partners!**

aiEDU

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Resources

Department of Education, Office of Educational Technology: [Artificial intelligence and the future of teaching and learning](#)

- Generic framework for thinking about AI for schools that level-sets definitions, considerations, and contextualization

National Institute for Standards in Technology: [AI Risk Management Framework](#)

- How companies and organizations should think about risk management (data, privacy, safety, etc.)

Written for companies/industry but can be applied to general IT practices

UNESCO: [Report on AI and Education](#)

- Focus on human-centered applications of AI from a global perspective and has resources for policy makers

Organization for Economic Co-operation and Development: [Education and AI: preparing for the future & AI, Attitudes and Values](#)

- Academic review of existing literature on AI and Education that dives into workforce development & skills for students

Grammarly [White Paper on AI & Education](#)

- Gets more into implementation of AI tools for student-facing products

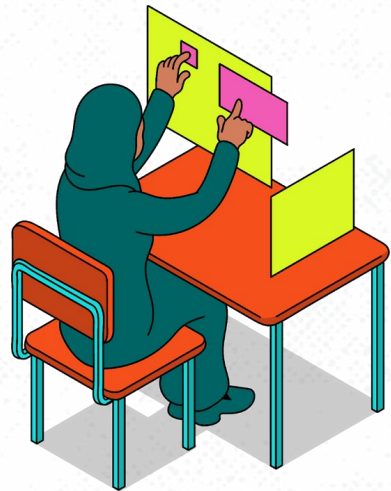
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Additional Resources

Guides & Thought Leaders

- [OpenAI: Considerations for Teachers](#)
- [US Department of Education: AI and the Future of Teaching & Learning](#)
- [UNESCO Guide for Education Policies on AI](#)
- [UNESCO Recommendations on Ethics of AI](#)
- [ISTE Bringing AI to Schools](#)



Examples of Teachers Taking-On AI

- [ELA AI Acceptable Use Policy](#)
- [How to Develop AI Policies](#)
- [Handling AI Bias in Classrooms](#)
- [Book: AI for Teachers](#)

Curricular Resources from us!

aiEDU

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AI Snapshots

5 Minutes



Intro to AI

10 Weeks



Project Dashboard

Several Hours



AI Challenges


Independent





TEACH AI

Intro to AI

A 10-week project-based learning course that introduces the fundamentals of AI through engaging, culturally relevant lessons, in a format that's intuitive for students.

 35x 45-minute lessons

 Grades 9-12

 Teacher-led

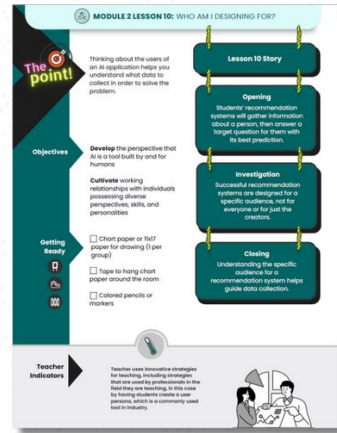
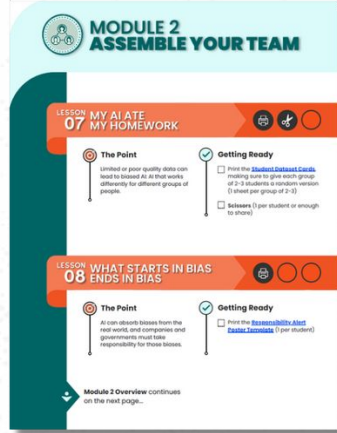
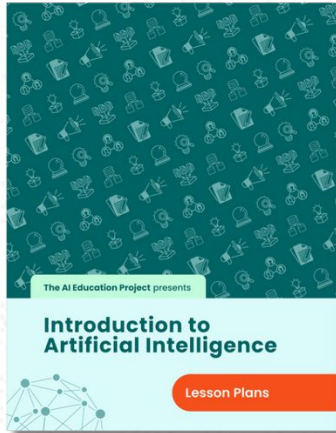




Intro to AI

Plans and resources are provided for every lesson, including slides!

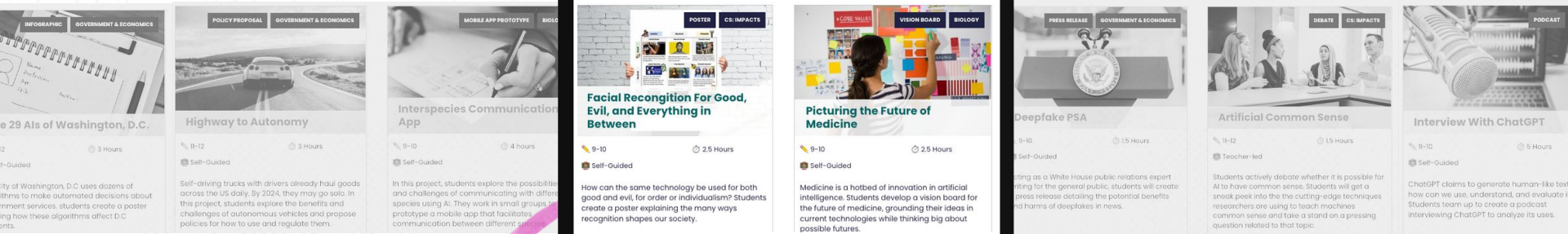
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Project Dashboard


A collection of unique, **engaging projects** for high school students. Choose what's right for your classroom from a mix of **independent** and **teacher-led** projects in a **variety of subjects**.







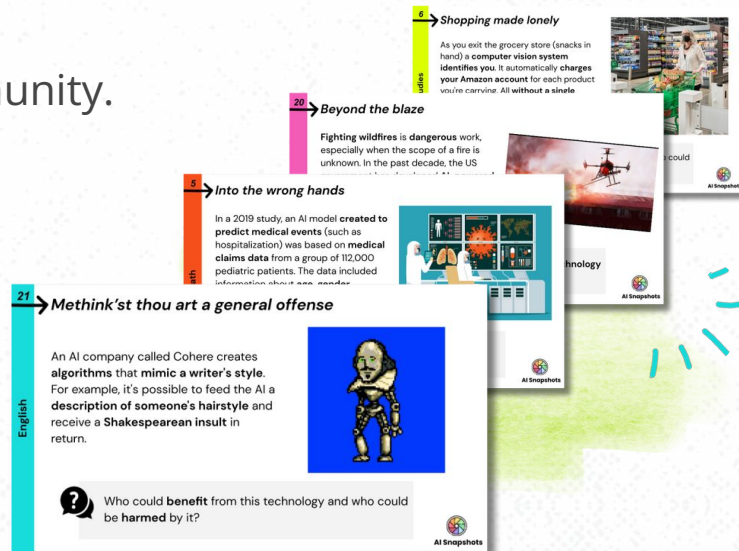
AI Snapshots

180 classroom warm ups designed to spark debate, ignite curiosity, and build community.

 180x 5-minute warm ups

 Grades 9-12

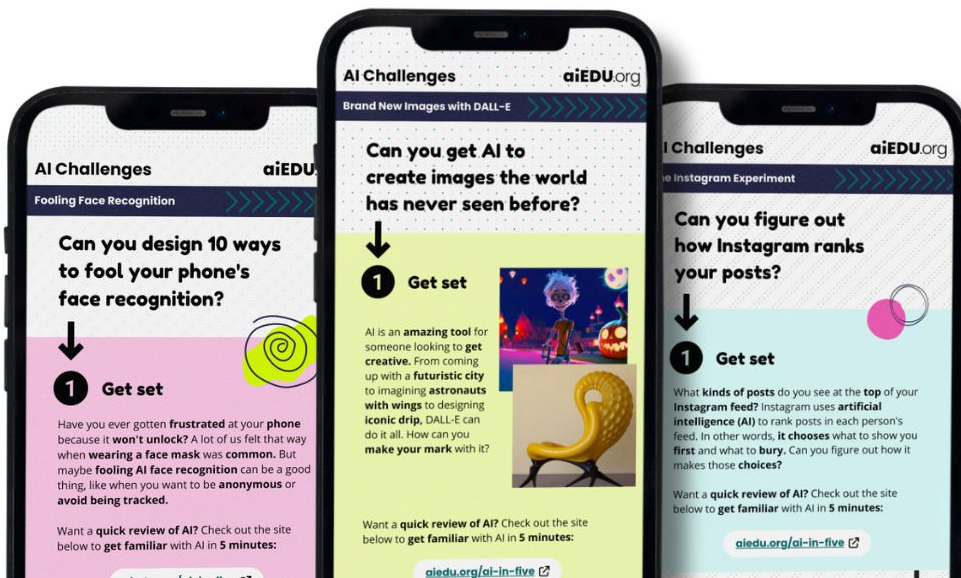
 Teacher-led





AI Challenges

Influence how AI works, **experiment with AI**, and **share your findings** with your community.

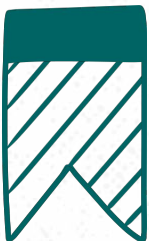


AI Challenges are mobile friendly and can be completed anytime, anywhere!



AI in 5 Minutes

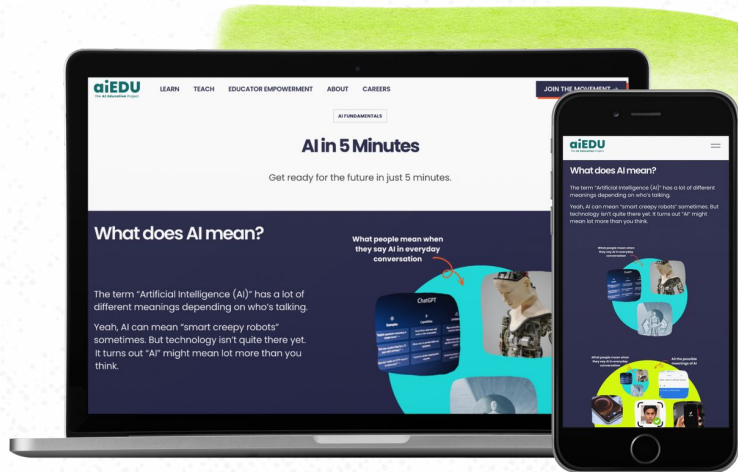
Get ready for the future in just 5 minutes!



Bookmark it!

Look for the link in the chat.

 www.aiedu.org/ai-in-five

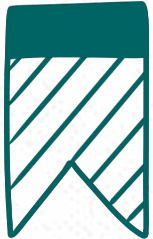




RESOURCE

AI Toolkits

Designed to empower teachers, parents, and other community champions to share the importance of AI literacy in their community.



Bookmark it!

Look for the link in the chat.

www.aiedu.org/aitoolkits



aiEDU Presents

3 AI ACTIVITIES

WILL ROBOTS TAKE MY JOB?

AI-powered, hyper-accurate predictive analytics can help businesses identify and hire the most qualified candidates. But this technology is also being used to create new jobs and even to predict which jobs will be replaced by AI by 2030. In which professions do you think AI will have the most impact? How will you be able to stay relevant in a world where AI is taking over so many jobs?

CHALLENGES
Find a job that you think AI will not take.
• How will the skills of being successful in a job change because of being outsteered?

DISCUSSION QUESTION
How could this activity help inform a person's education and career decisions?

QUICK, DRAW!

Think: Draw it an application designed to change their management your advantage using AI. The best they've been about it to do it's not enough!

CHALLENGES
Explain how your design can be your asset.
• How might the design used by the AI at www.aiedu.org/aitoolkits?

DISCUSSION QUESTION
What other benefits might AI applications have that you might not think of?

CHARGE YOUR PHONE... OR ELSE

Apps like Snapchat, Instagram, and others are using AI to help you find the best photos to post to your stories. But even so, they still have a lot of work to do to make sure they're not taking over your phone. How do you think AI will be used to help you find the best photos to post to your stories?

CHALLENGES
Think about what other ways you could use AI to help you find the best photos to post to your stories.
• How would you use AI to help you find the best photos to post to your stories?

DISCUSSION QUESTION
How does this activity help inform both benefits and risks of AI in our lives?



AI in the World Around Us

Goed to read from smartphone apps to the classroom. AI is shaping our lives.

HOSPITALITY

- Personalizing the guest experience.** While it can be difficult for humans to remember every detail of a guest's profile, AI can do that for you. AI is being used to help hotels to help analyze guests' information to determine their top priorities. For example, does a guest prefer certain types of rooms or feel more comfortable on certain floors?
- Managing crowded venues.** Theme parks, casinos, and zoos can get crowded quickly, which reduces the quality of a guest's experience. AI can help ease overcrowding by managing spending guests' travel offers or coupons for areas of these attractions with lower congestion. AI can also help pricing in real time due to traffic.

LEGAL SYSTEM

- Legal research.** Lawyers and paralegals spend massive amounts of time conducting legal research, and AI can help them find better answers to their legal questions. Later through semantic search and predictive coding.
- Discovery.** Legal proceedings usually involve the production of massive quantities of documents, emails, text messages, and other materials that are germane to a case which are provided to lawyers on each side of a case to be evaluated for evidence. Traditionally, law firms have spent hours sifting through thousands of documents which can easily number in the millions to find relevant evidence in a case. AI can significantly reduce the time required to