ESSARP

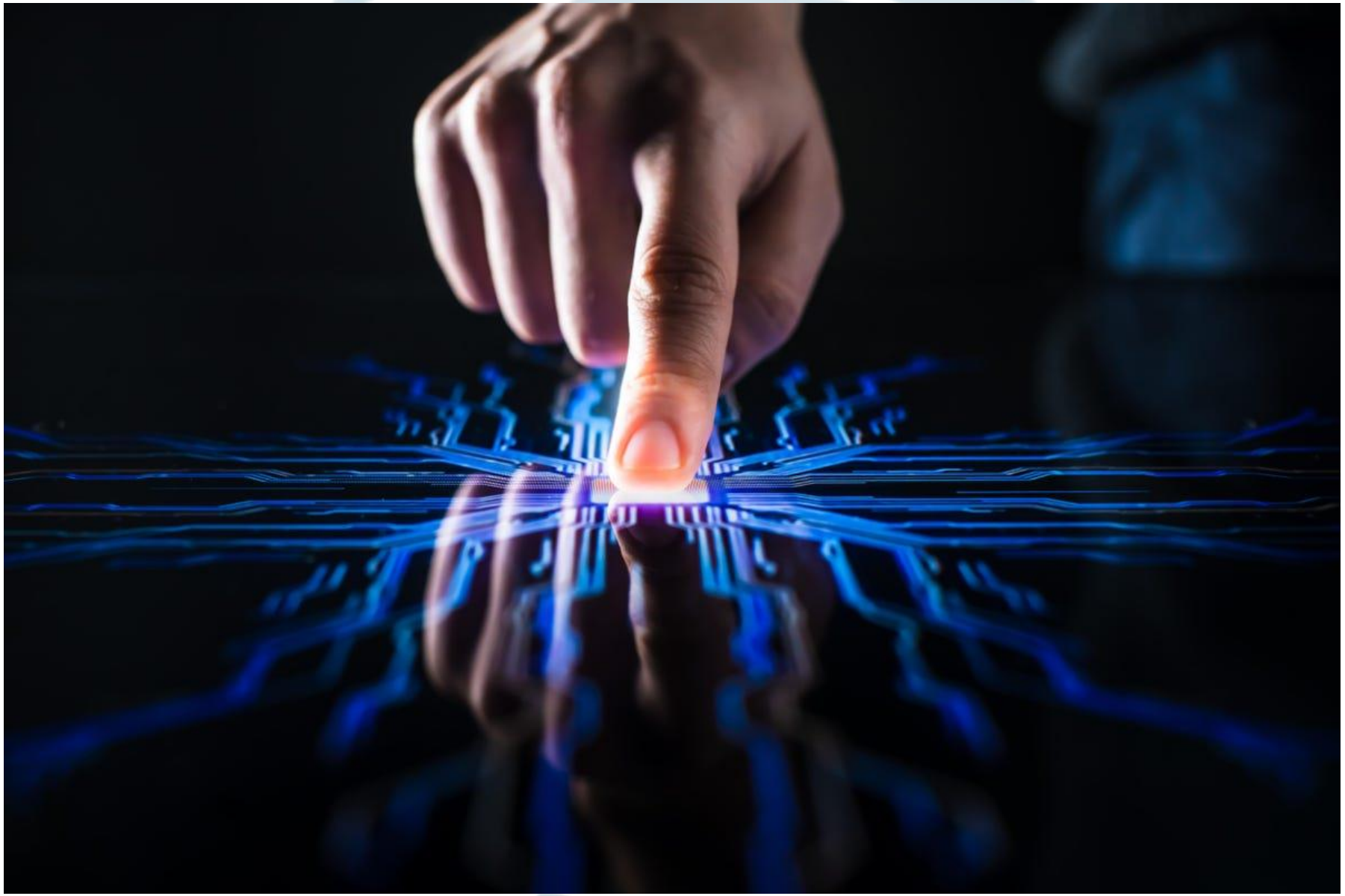
Leading with AI: a New Landscape

AI in Education

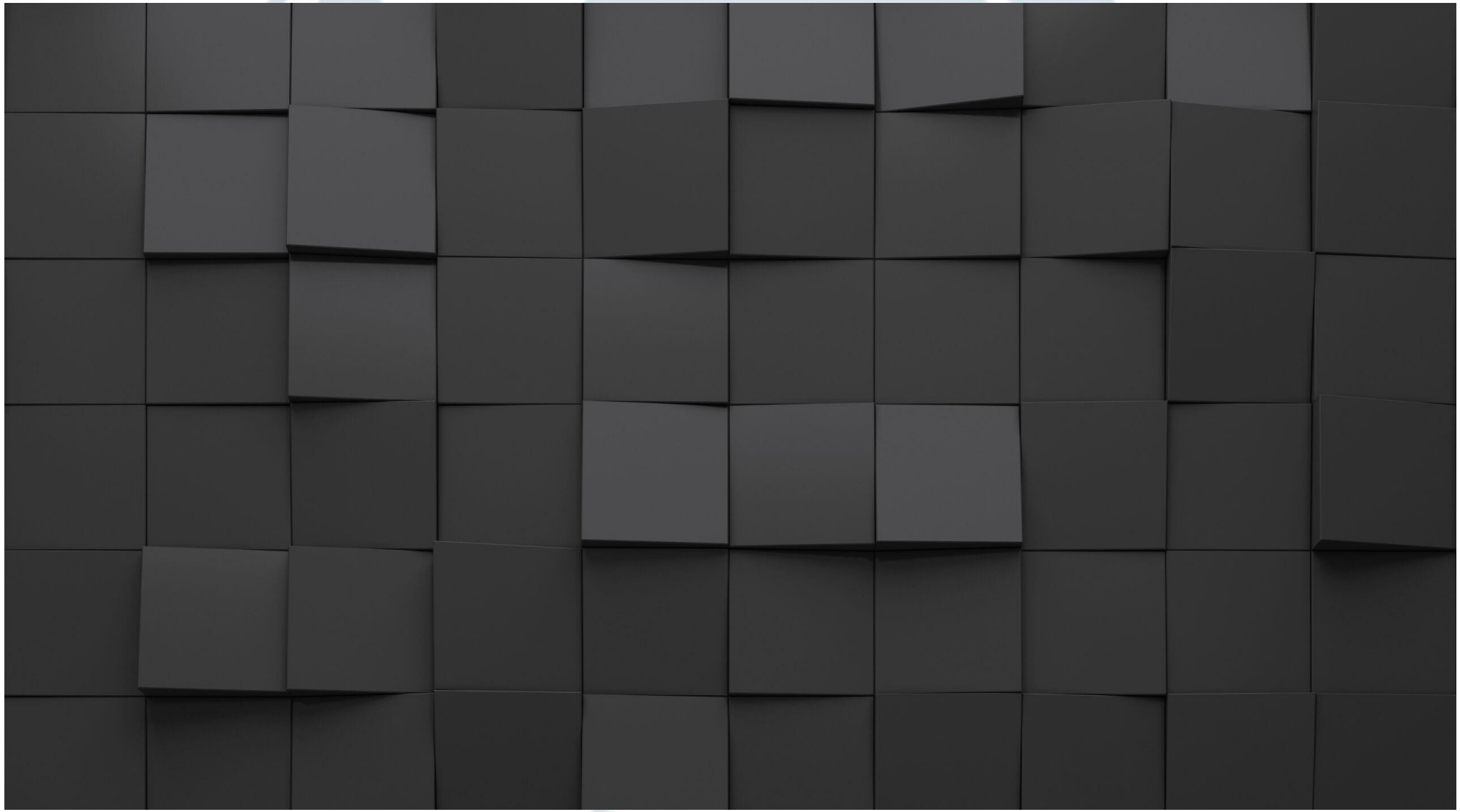
Chat GPT is just the tip of the iceberg

- Technology Applications that will revolutionize life and learning.
- Chat GPT and other AI based applications.
- Ethical and social implications.
- Redefining schools and learning – a new imperative.

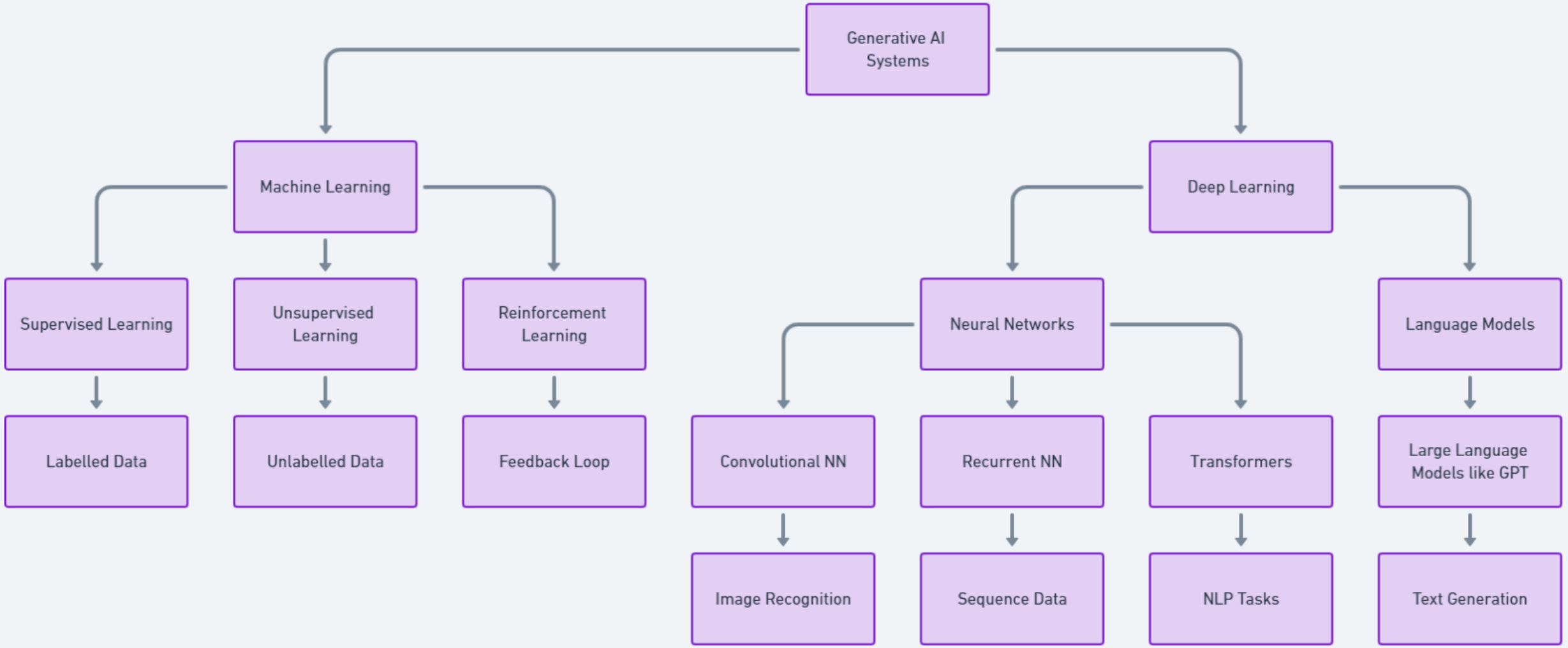
Chat GPT – truly a game changer



The Black Box Effect



Generative AI



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AI in Education

Machine Learning

- A branch of artificial intelligence with focus on predictive algorithms.
- Techniques: Supervised learning, unsupervised learning, and reinforcement learning.
- Applications: Spam filtering, recommendation systems, and self-driving cars.

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Reinforcement Learning

- Learning through interaction with an environment, receiving rewards or penalties.
- Maximize cumulative rewards over time, learning optimal policy for decision-making.
- Applications: Robotics, game playing, and resource allocation.

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Neural Networks

- Interconnected layers of artificial neurons designed for data processing and learning.
- Mechanism: Adjusts connection weights through training for pattern recognition and decision-making.
- Role: Fundamental component of modern AI applications.

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Deep Learning

- A subset of machine learning focusing on complex patterns in data.
- Tools: Utilizes multi-layered artificial neural networks.
- Specializations: Excels in tasks like image recognition, natural language processing, and speech recognition.

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Natural Language Processing (NLP)

- A subfield of AI enabling computers to comprehend and generate human language.
- Techniques: Text analysis, sentiment detection, and machine translation.
- Applications: Chatbots, voice assistants, and automated content generation.

AI in Education

Some basic terms and definitions

- Chat GPT is a Generative Pre-Trained Transformer.
- Created by OpenAI.
- Language Model based on Deep Learning.
- 175 billion learning parameters.

AI in Education

Chat GPT

- Deep Learning Neural Network.
- Reinforcement learning, based on human feedback, was used for training.
- Most advanced Natural Language Processing model ever.
- Worst version we will experience.

AI in Education

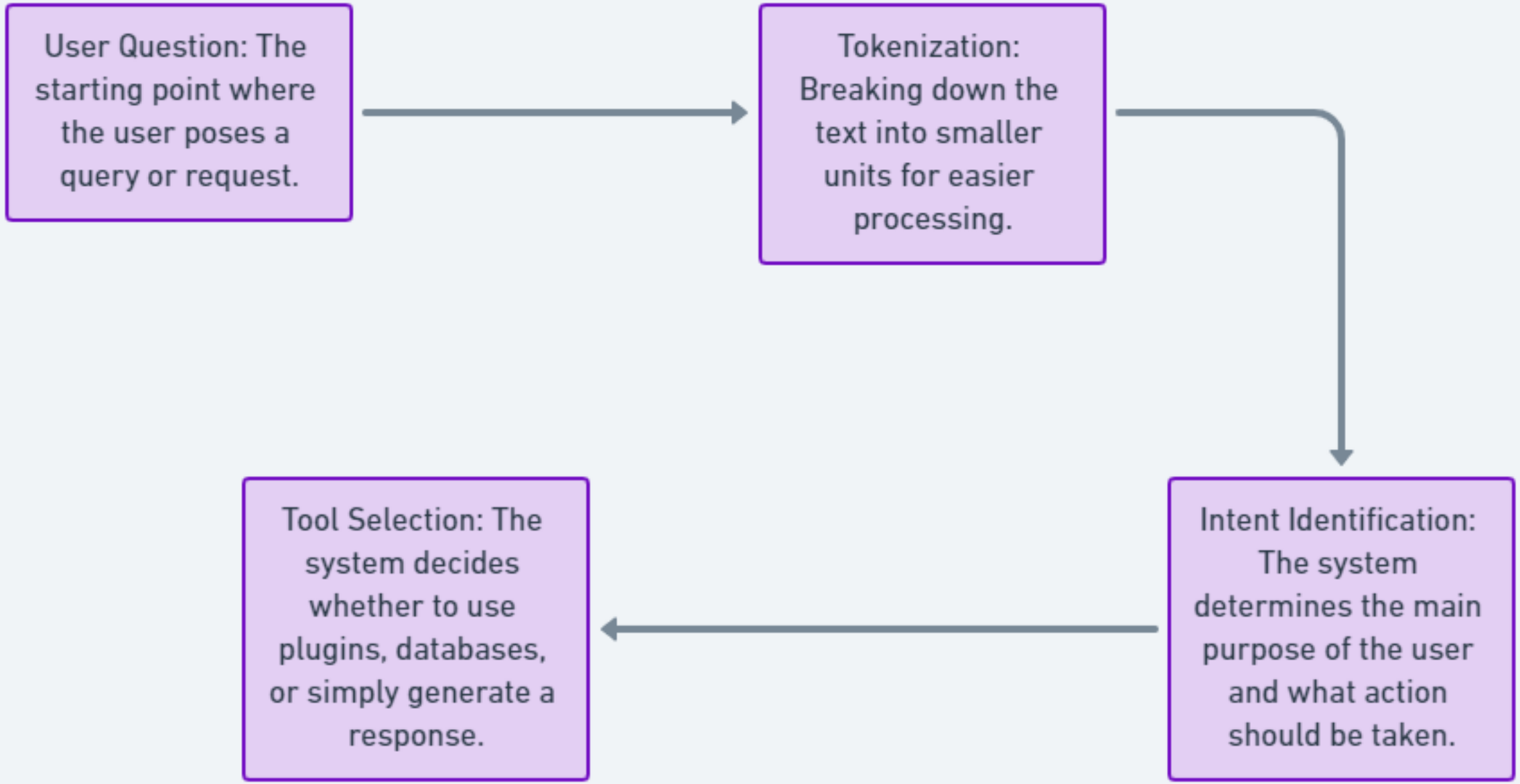
Biases and human reinforcement

- Early models presented biases from data corpora.
- Gender biases.
- Racial and ethnic biases.
- De-biasing.

AI in Education

Risks of neural networks

- Pneumonia research – rules model vs. neural networks.
- Opaqueness of model vs. accuracy.
- Transparency initiatives.
- Do people have the right to explanations when algorithmic decisions are made?


User Question: The starting point where the user poses a query or request.
Tokenization: Breaking down the text into smaller units for easier processing.
Intent Identification: The system determines the main purpose of the user and what action should be taken.
Tool Selection: The system decides whether to use plugins, databases, or simply generate a response.
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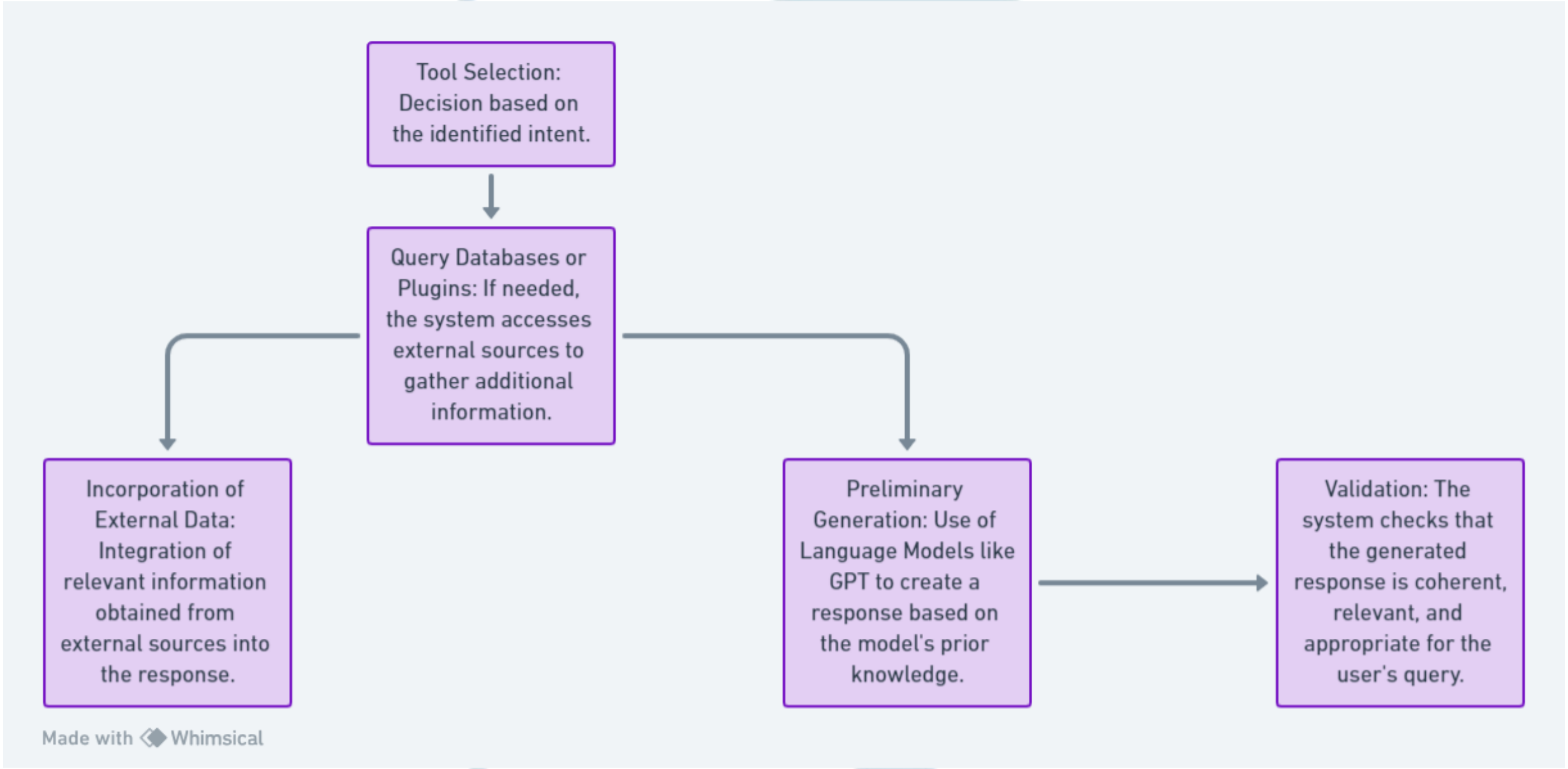
Tool Selection: Decision based on the identified intent.
Query Databases or Plugins: If needed, the system accesses external sources to gather additional information.
Incorporation of External Data: Integration of relevant information obtained from external sources into the response.
Preliminary Generation: Use of Language Models like GPT to create a response based on the model's prior knowledge.
Validation: The system checks that the generated response is coherent, relevant, and appropriate for the user's query.
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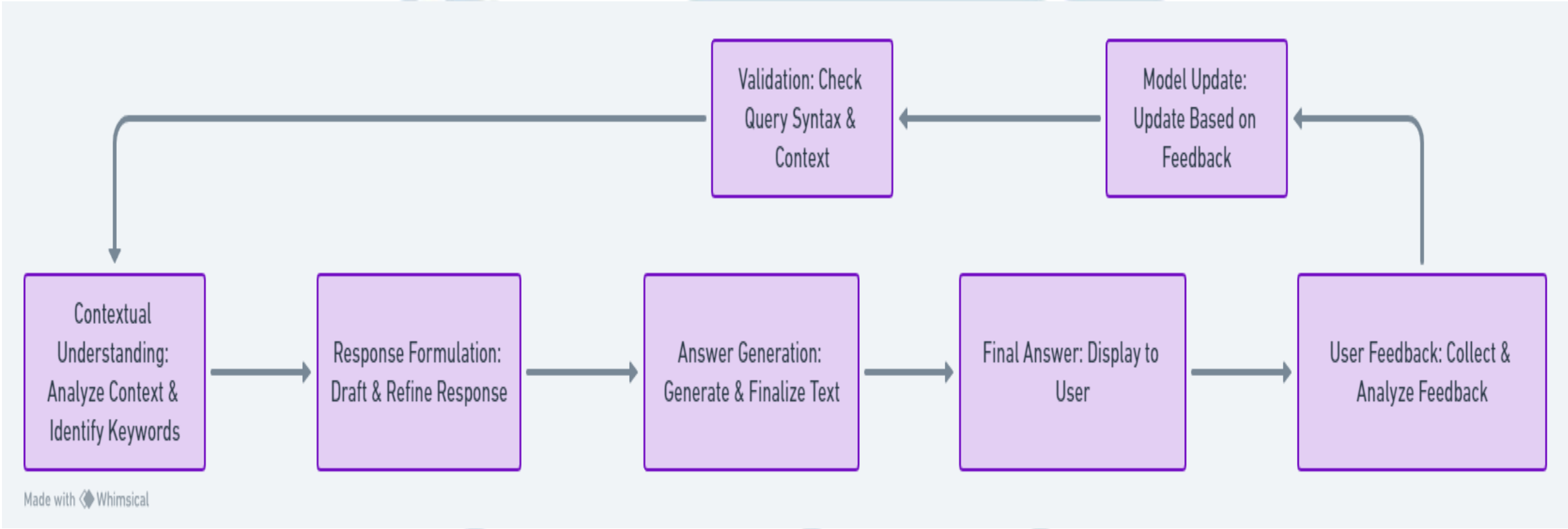
Validation: Check Query Syntax & Context
Model Update: Update Based on Feedback
Contextual Understanding: Analyze Context & Identify Keywords
Response Formulation: Draft & Refine Response
Answer Generation: Generate & Finalize Text
Final Answer: Display to User
User Feedback: Collect & Analyze Feedback
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Chat GPT

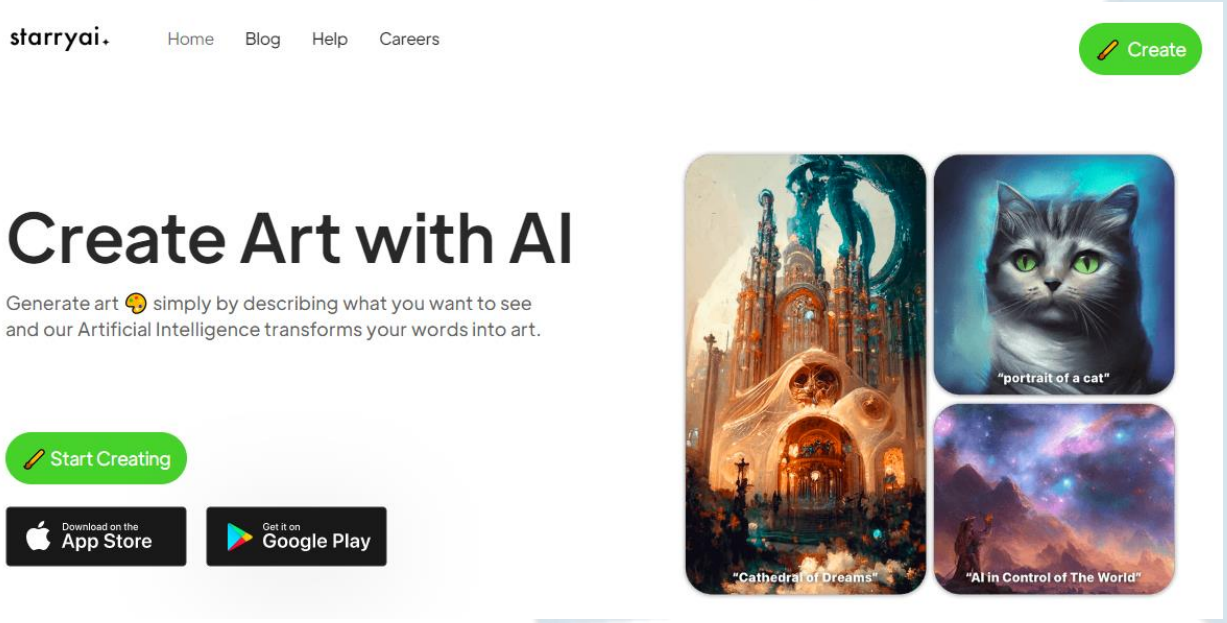
Limitations and implications

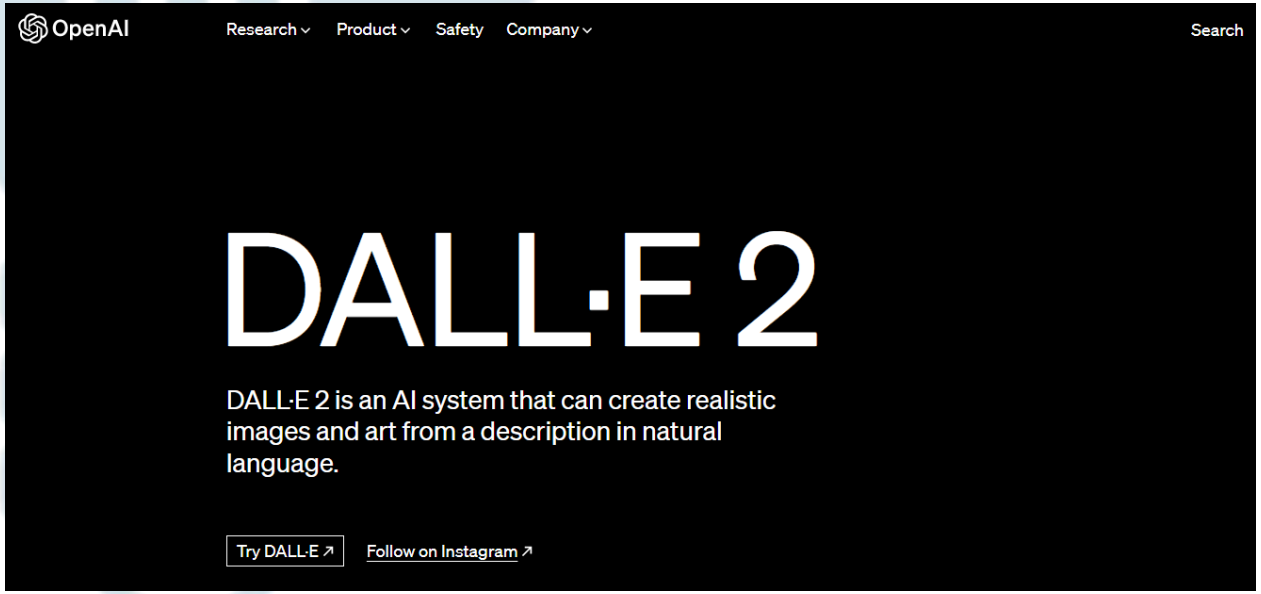
- Pre-trained, not real time or organic.
- No information post 2021.
- Closed knowledge base.
- Very expensive model.
- Human input for training.
- Never 100% error free.

The dataset used to train ChatGPT, which is based on the GPT-4 architecture, is an extensive collection of text from the internet. It is derived from a variety of sources, encompassing different domains of human knowledge. Some key aspects of the dataset include:

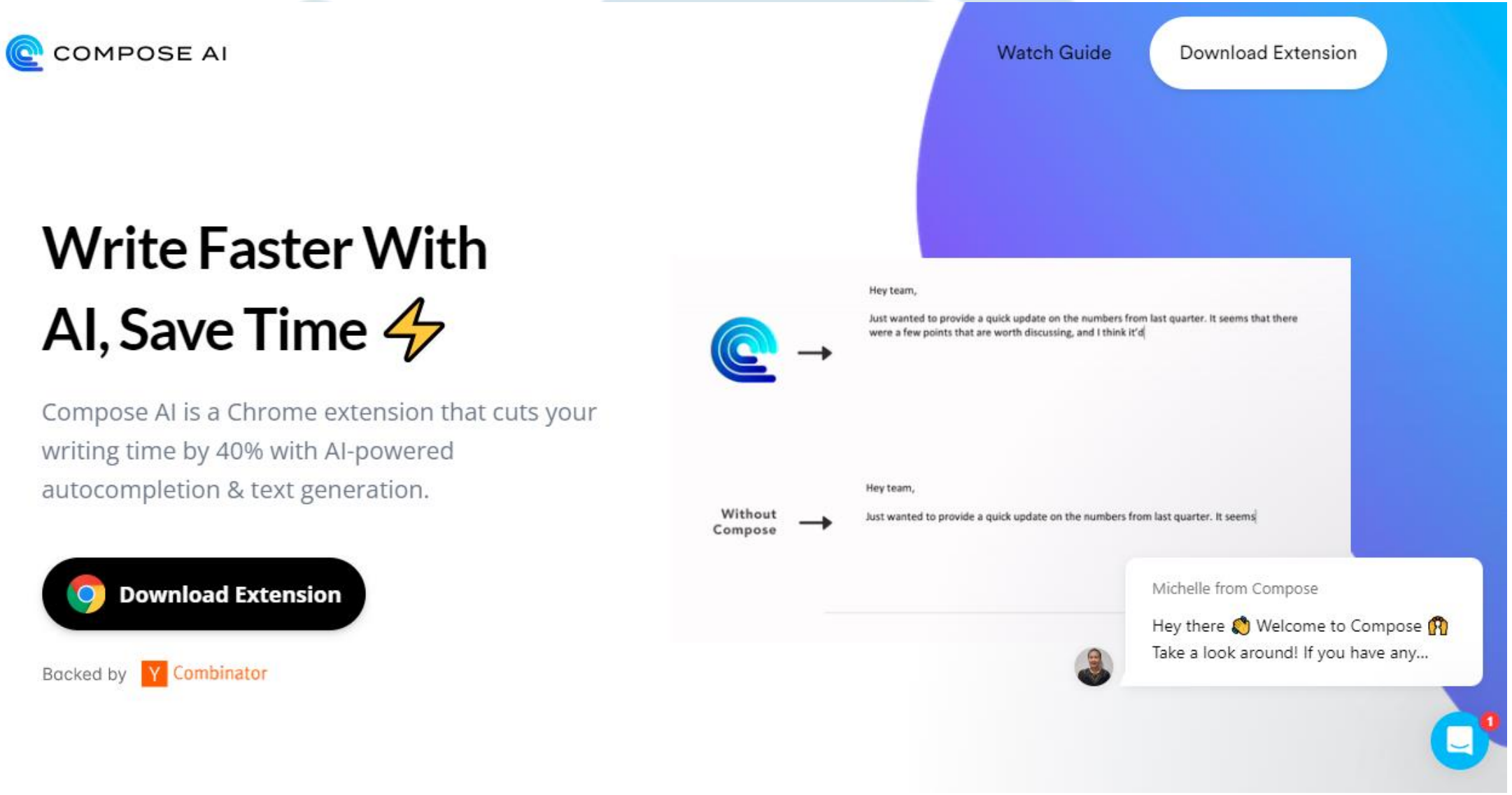
1. Scale: The dataset is massive, containing billions of words and sentences. This enables the model to learn a broad range of topics and language patterns.
2. Diversity: The dataset is diverse, containing text from various genres, such as news articles, blog posts, research papers, books, websites, and even social media content like forum discussions and comments.
3. Language: While the primary language in the dataset is English, it also includes text in other languages, which allows the model to learn and generate responses in multiple languages.
4. Preprocessing: The raw text data is preprocessed to remove irrelevant or low-quality content. It is then tokenized into smaller units, such as words or subwords, which the model uses to learn and generate text.
5. Training: The model is trained using an unsupervised learning approach called "self-supervised learning," where it learns to predict the next word or token in a sequence, given the previous context. This helps the model to learn grammar, facts, reasoning abilities, and other language-related patterns.

AI Image Generators

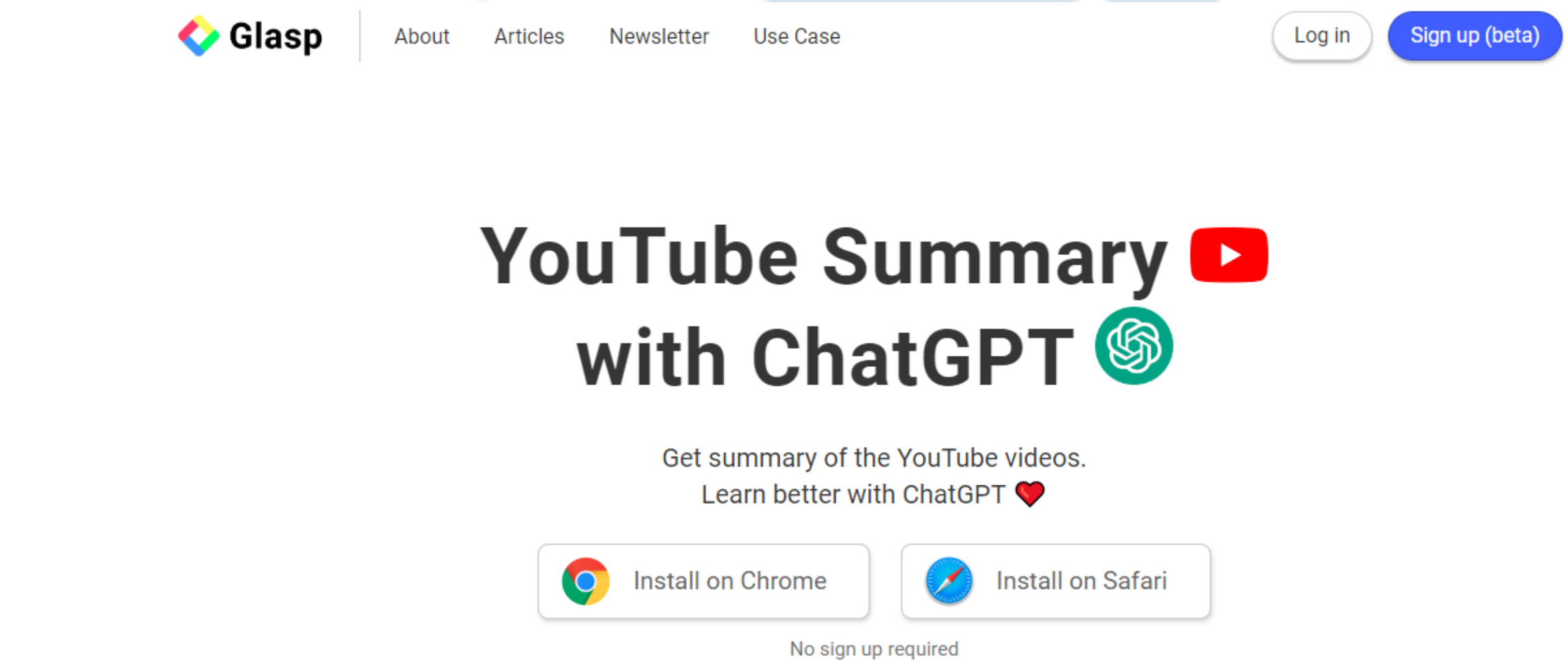




AI Writing Assistant



AI YouTube Transcript



AI Meeting Notes

Home Use cases Features Security Sign In Try for free

Effortless meeting notes and action items

Cogram takes automatic notes in virtual meetings and identifies action items, while keeping your data private and secure.

Try for free

Try Cogram in a 15-min live

Transcript:

Jane Wilde:

Hey all, great to meet everyone. So where are we on this?

Oscar Maine:

Hi Jane. We'll prepare and share an overview deck with your team this week. Please have your colleagues take a look at it.

Jane Wilde:

Thanks Oscar. Do you have a timeline for setting up an integration with our ERP? That would be very helpful.

Meeting Writeup:

Summary:

Jane Wilde and Oscar Maine discuss the setup of a software tool for procurement optimisation. They align on the steps required for approval. Jane Wilde asks about an ERP integration.

Action Items:

- Share an overview deck with Jane Wilde. Assignee: Oscar Maine
- Review with her colleagues. Assignee: Jane Wilde
- Check what the timeline for an ERP integration would be. Assignee: Oscar Maine

AI Slides Creator

Demo Help Guides Pricing Powerpoint FAQs Join Affiliate Program

SlidesAI now supports ES Spanish & IT Italian
The support for JP Japanese and FR French is coming soon! :)

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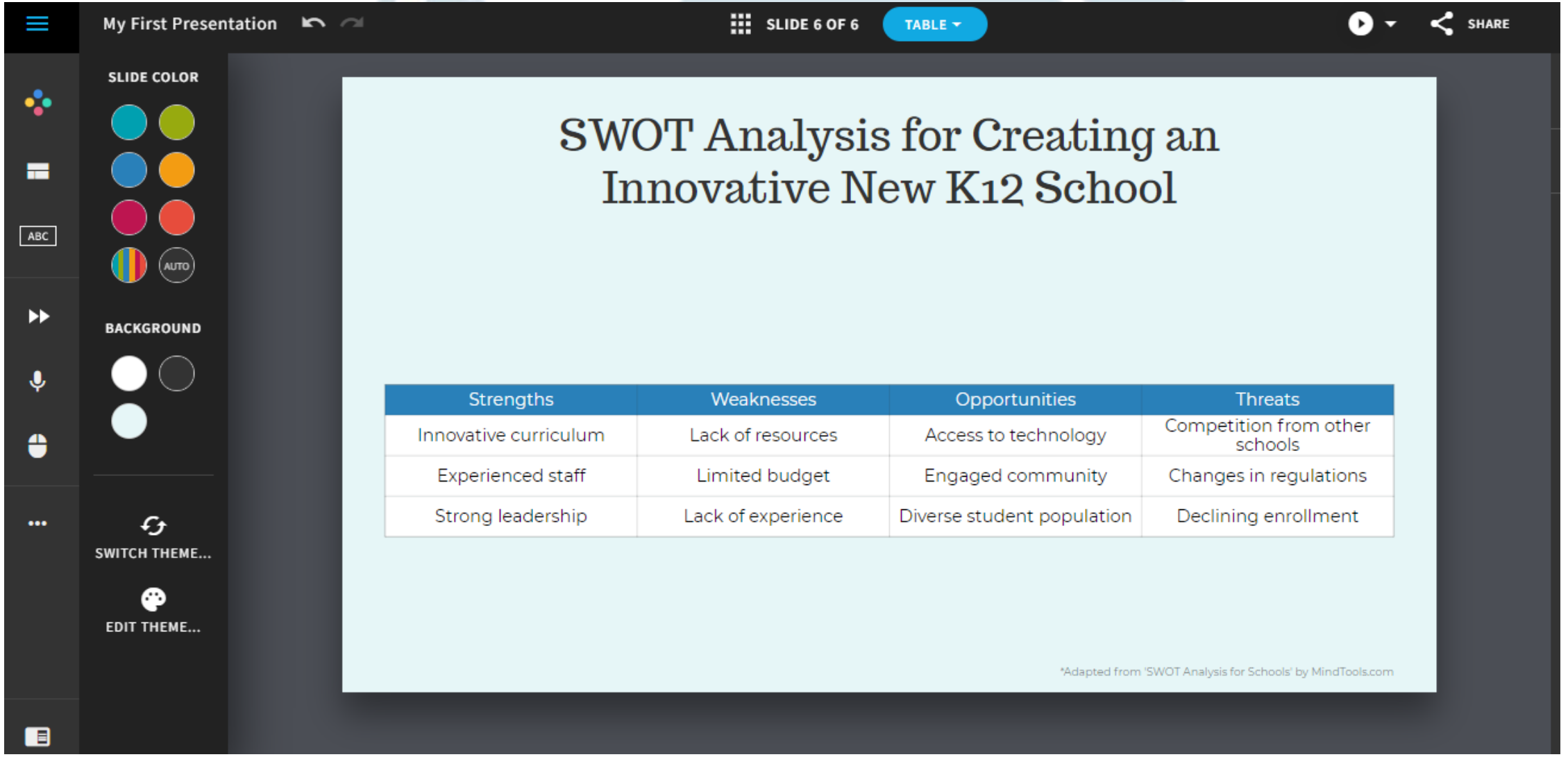


Chat GPT & apps family

General Purpose Applications

- An All-Encompassing Expert in All Areas
- A Personalized Tutor
- Transcription
- Summarization

Chat GPT & apps family

General Purpose Applications

- Simplification
- Special Needs and Learning Difficulties
- Research
- Coding
- Images, Videos, and Presentations

Chat GPT & apps family

General Purpose Applications

- Text to Speech
- New Content Generation
- Conversations
- Impersonating Famous Characters

Chat GPT & apps family

Applications for Reading

- Summarize Texts of Any Length
- Reading Comprehension Assistance
- Rewrite Texts for Different Age/Grade Levels
- Extract Main Ideas in Various Formats

Chat GPT & apps family

Applications for Reading

- Personalized Reading Plans
- Identify Entities and References
- Rewrite for Special Learning Needs
- Rewrite to Change Tone or Customize for Emotional Issues
- Perform Sentiment Analysis

Chat GPT & apps family

Applications for Writing

- Generating Outlines for Any Topic or Idea
- Unlimited Text Generation in Various Styles and Lengths
- Text Rewriting for Improvement or Style Change
- Inclusion of References and Citations

Chat GPT & apps family

Applications for Writing

- Grammar and Style Correction
- Personalized Feedback
- Writer's Assistance
- Writing Templates
- Act as an Editor

Chat GPT & apps family

Applications for Writing

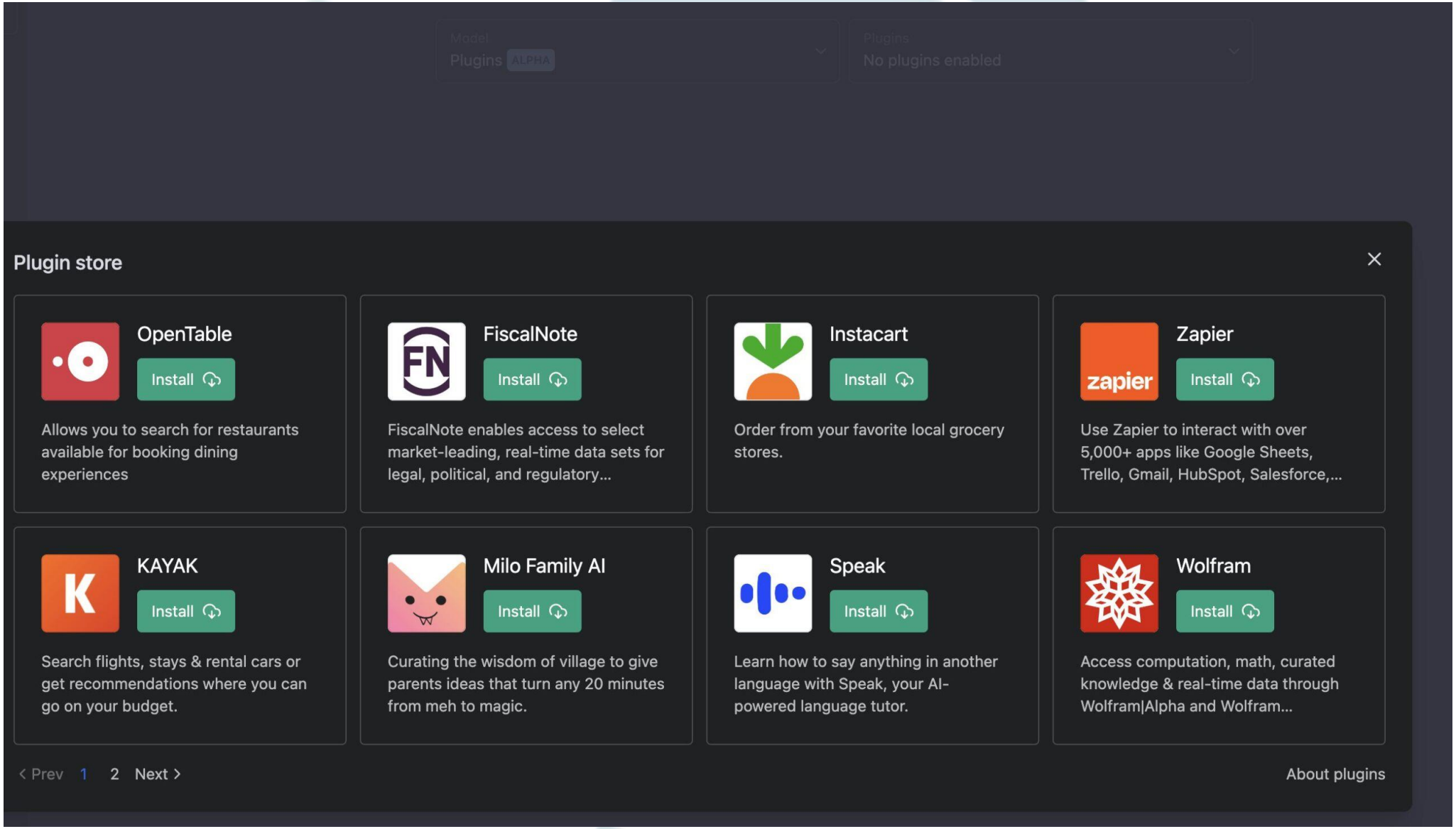
- On-the-Fly Research and Text Generation
- Text Improvement, Correction, and Customization

Chat GPT & apps family

Applications for other subjects

- Problem solving and related tutoring.
- Experiments – simulation.
- Reenactments of historical events in first person.
- SEL – dialogues, stories.

Plugins


Model
Plugins ALPHA
Plugins
No plugins enabled
Plugin store
OpenTable
Install
Allows you to search for restaurants available for booking dining experiences
FiscalNote
Install
FiscalNote enables access to select market-leading, real-time data sets for legal, political, and regulatory...
Instacart
Install
Order from your favorite local grocery stores.
Zapier
Install
Use Zapier to interact with over 5,000+ apps like Google Sheets, Trello, Gmail, HubSpot, Salesforce,...
KAYAK
Install
Search flights, stays & rental cars or get recommendations where you can go on your budget.
Milo Family AI
Install
Curating the wisdom of village to give parents ideas that turn any 20 minutes from meh to magic.
Speak
Install
Learn how to say anything in another language with Speak, your AI-powered language tutor.
Wolfram
Install
Access computation, math, curated knowledge & real-time data through Wolfram|Alpha and Wolfram...
Prev 1 2 Next
About plugins

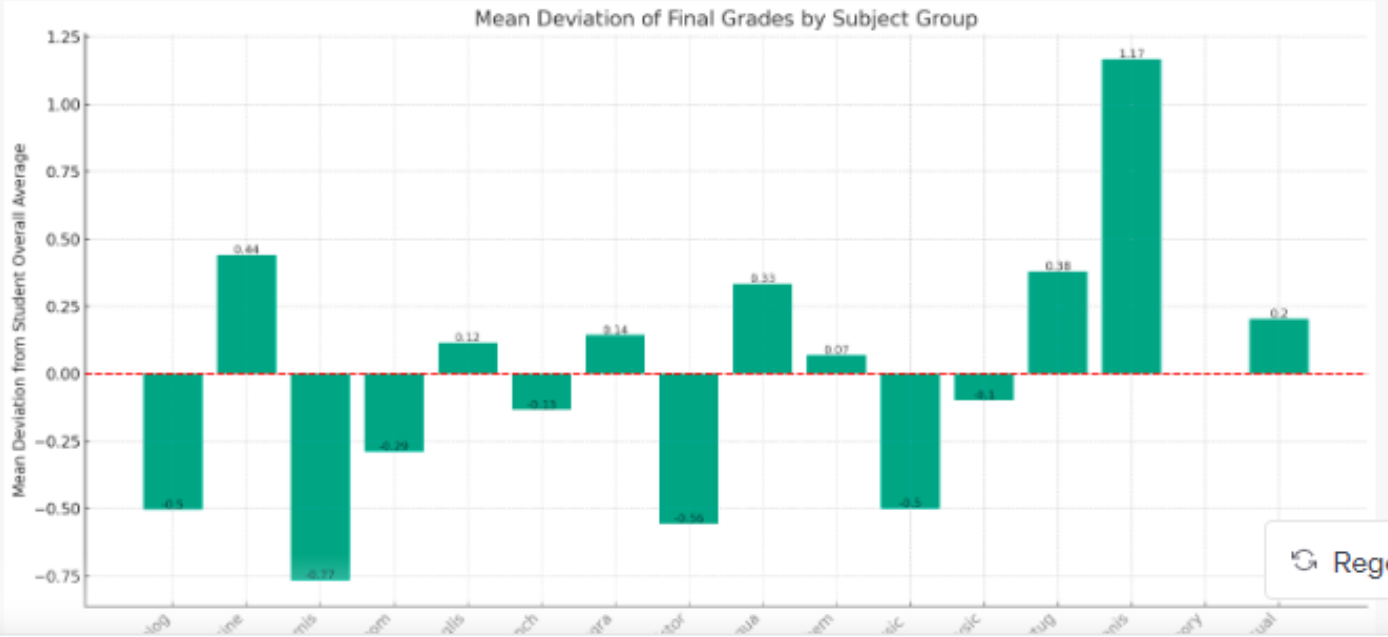
Data Analysis

Code Interpreter

4. Analyze and visualize the mean deviations to understand the relative performance in each subject.

Let's start by performing these steps:

Finished working Show work



Leadership applications

Leadership role

- Increased ability to produce materials related to teaching and learning
- Taking a pulse of school life, summarizing and synthesizing documents
- Easier to have distributed leadership
- Communications

Leadership applications

Curricular implications

- Academic integrity vs learning
- Possible double standards
- Need to be aware of implications sand address them
- Metacognition
- The AI immune School

Leadership applications

Curriculum Review

- Summarization
- Defining a rubric for analysis
- Finding entities
- Identifying keywords

Leadership applications

Transcription of meetings

- Identifying speakers
- Summarizing themes, topics
- Minutes of meetings
- Entities and references

Leadership applications

Plugins for documents

- Reading PDFS
- Diagrams
- Link readers

Leadership applications

Professional Development

- Icebreakers
- Personalized resources
- Case studies with resolution
- Summarizing resources, videos
- Planning full Workshops

Leadership applications

Other applications

- Capturing organic instructional data
- Reports and data analysis
- Surveys and analysis
- Interdisciplinary projects
- Scheduling?

Ethical and social implications

AI Image Generation

- Is it Art?
- Concerns for digital art industry.

Ethical and social implications

AI Image Generation

- Misuse and Misrepresentation of AI-Generated Images
- Privacy and Consent Concerns
- Deepfakes and Non-consensual Content Issues
- Bias and Stereotypes in AI Image Generation

Ethical and social implications

AI Image Generation

- Ownership and Intellectual Property Rights Challenges
- Authenticity and Trust Concerns in Visual Media
- Psychological and Emotional Impact of AI-Generated

"Terrific. . . . Art and science meet an engaged mind and the friction produces real fire." —*The New Yorker*

The Most Human Human

What Artificial Intelligence Teaches Us About Being Alive

Brian Christian

Conclusions – Discussion

This is just the beginning

- Chat GPT elevates the threshold of cognitive skills at every level.
- What constitutes cheating?
- Different standards for adults and students?

Conclusions - Discussion

This is just the beginning

- Which learning / cognitive skills do we need to build up to?
- How are they learned?
- Reassessing assessment, including international exams.
- Current events post Sept 2021 – limitations

Conclusions - Discussion

Implications

- Redefine cognitive skills per age level.
- Closed tech sessions – oral discussions – not pen and paper.
- Pre-Chat GPT analysis.
- Fact checking and verification.
- Creative tasks.

Conclusions - Discussion

Risks

- Some cognitive skills at risk.
  - Reading comprehension.
  - Summarization.
  - Breaking down a real life problem.
- Chat GPT outperforming students at many age levels.

Conclusions – Discussion

Benefits

- We can learn a whole lot more.
- Very significant step towards democratization of knowledge.
- Higher threshold for learning skills.
- AI unleashed for human good.

What´s next?

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