

# Horizon Mini-Hack

Noa Lubin



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7.10

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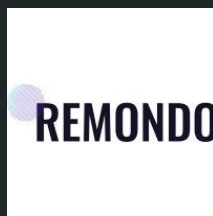


משרד החדשנות,  
המדע והטכנולוגיה



## HORIZON MINI-HACK

יום ה' - 24.07.25 | 15:30-21:30  
במשרדי אמזון, דרך מנחם בגין 121  
מגדל שרונה, קומה 28, ת"א



# Agenda for Today

1. Intro to AI and GenAI
2. Demos and practical use cases for you
  - a. GPT and the features you might have missed
  - b. Notebook LM
  - c. Suno
  - d. Veo
  - e. Lovable / Base 44
3. Summary

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© Recording

# AI Intro

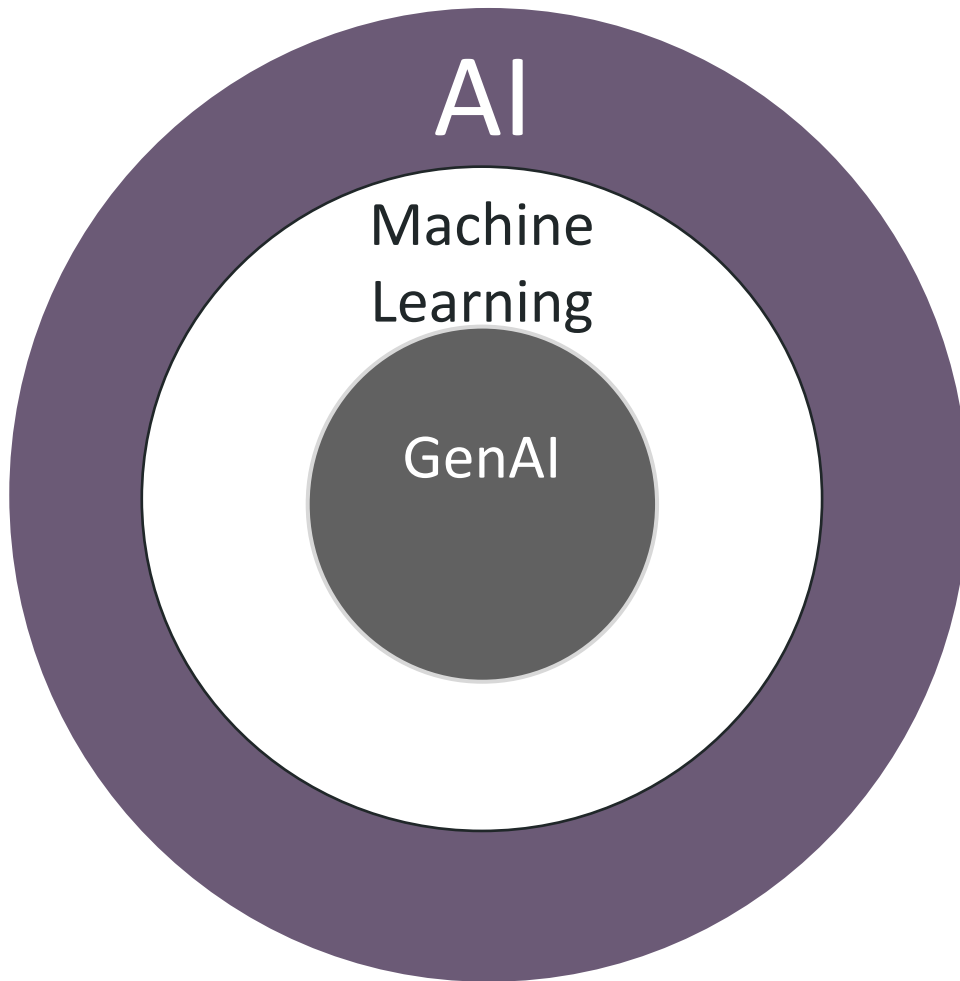
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ACCEPTED FOR PUBLICATION IN ASTROPHYSICAL JOURNAL, NOVEMBER 12, 2021

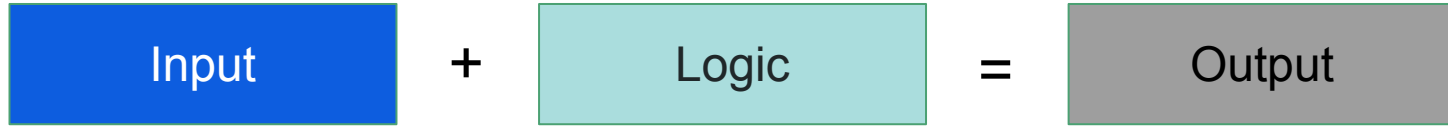
**ExoMiner:  
A Highly Accurate and Explainable Deep Learning Classifier that Validates 301 New Exoplanets**

HAMED VALIZADEGAN,<sup>1,2</sup> MIGUEL J. S. MARTINHO,<sup>1,2</sup> LAURENT S. WILKENS,<sup>3</sup> JON M. JENKINS,<sup>2</sup> JEFFREY C. SMITH,<sup>4,2</sup>  
DOUGLAS A. CALDWELL,<sup>4,2</sup> JOSEPH D. TWICKEN,<sup>4,2</sup> PEDRO C.L. GERUM,<sup>5</sup> NIKASH WALIA,<sup>6</sup> KAYLIE HAUSKNECHT,<sup>7</sup>  
NOA Y. LUBIN,<sup>8</sup> STEPHEN T. BRYSON,<sup>2</sup> AND NIKUNJ C. OZA<sup>2</sup>

What is AI?



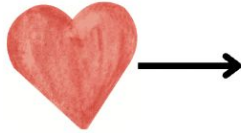
# Traditional programming



# Example

if you see a heart output 'yes'  
else output 'no'

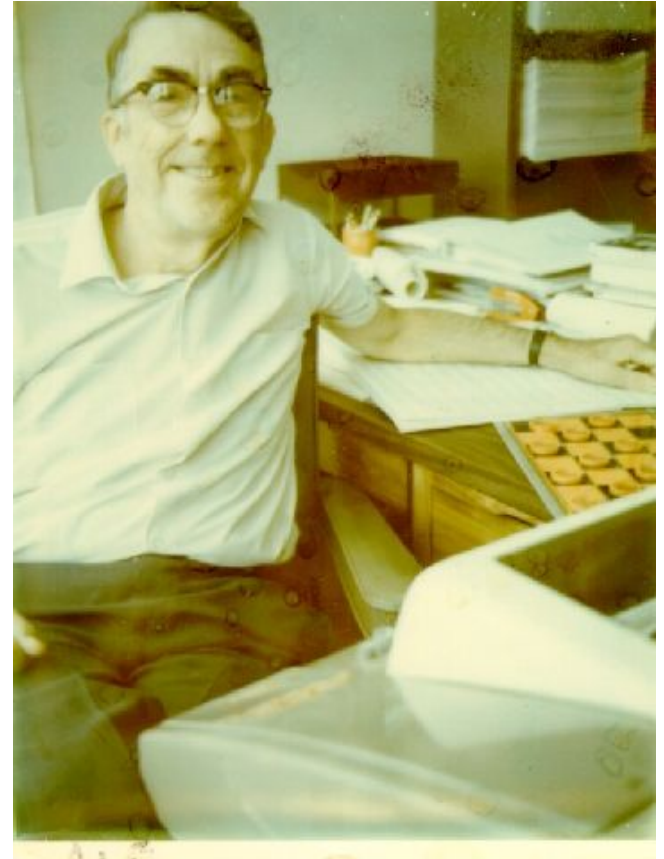
What will be the output for the new input?



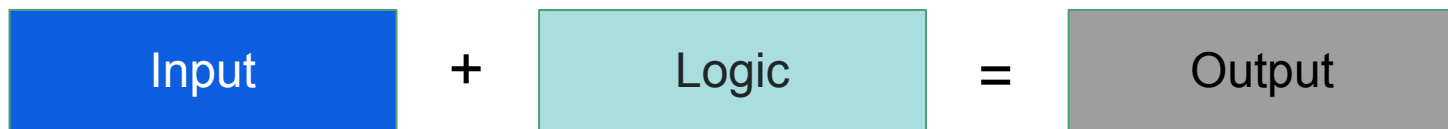


“Machine Learning: Field of study that gives computers the ability to learn without being explicitly programmed.”

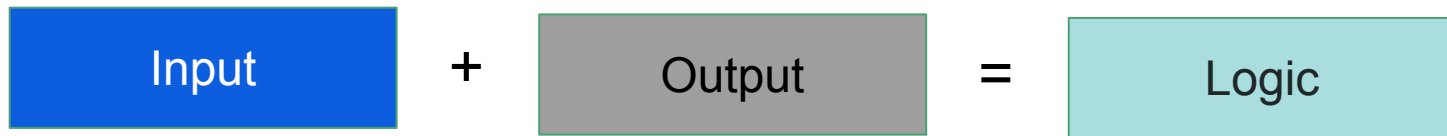
— Arthur Samuel (1959)



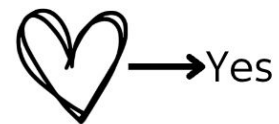
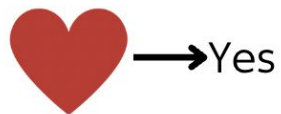
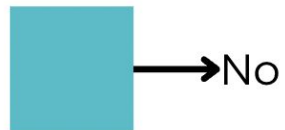
## Traditional programming



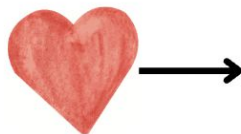
## Machine Learning



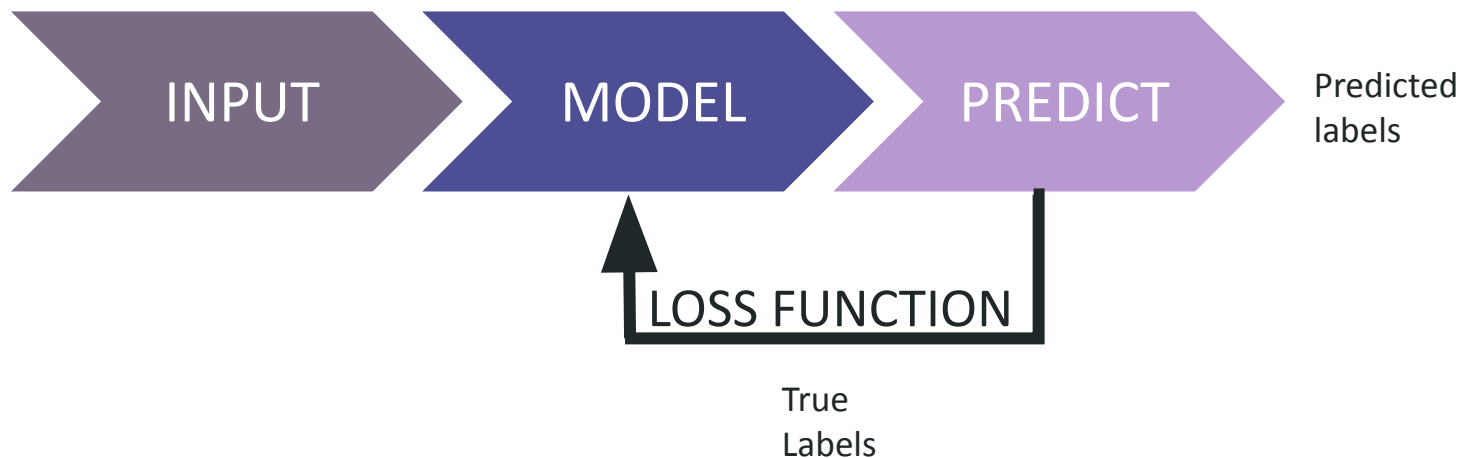
# Example



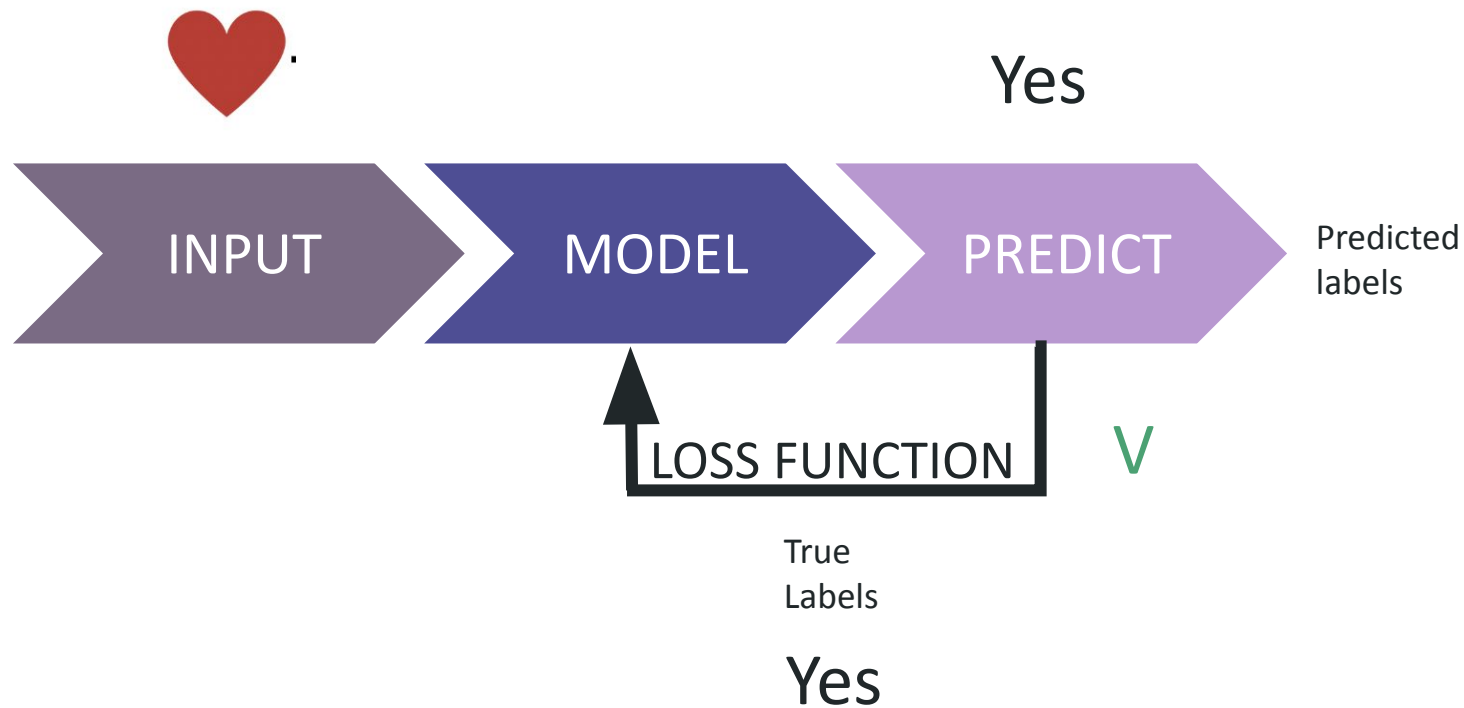
What will be the output for the new input?



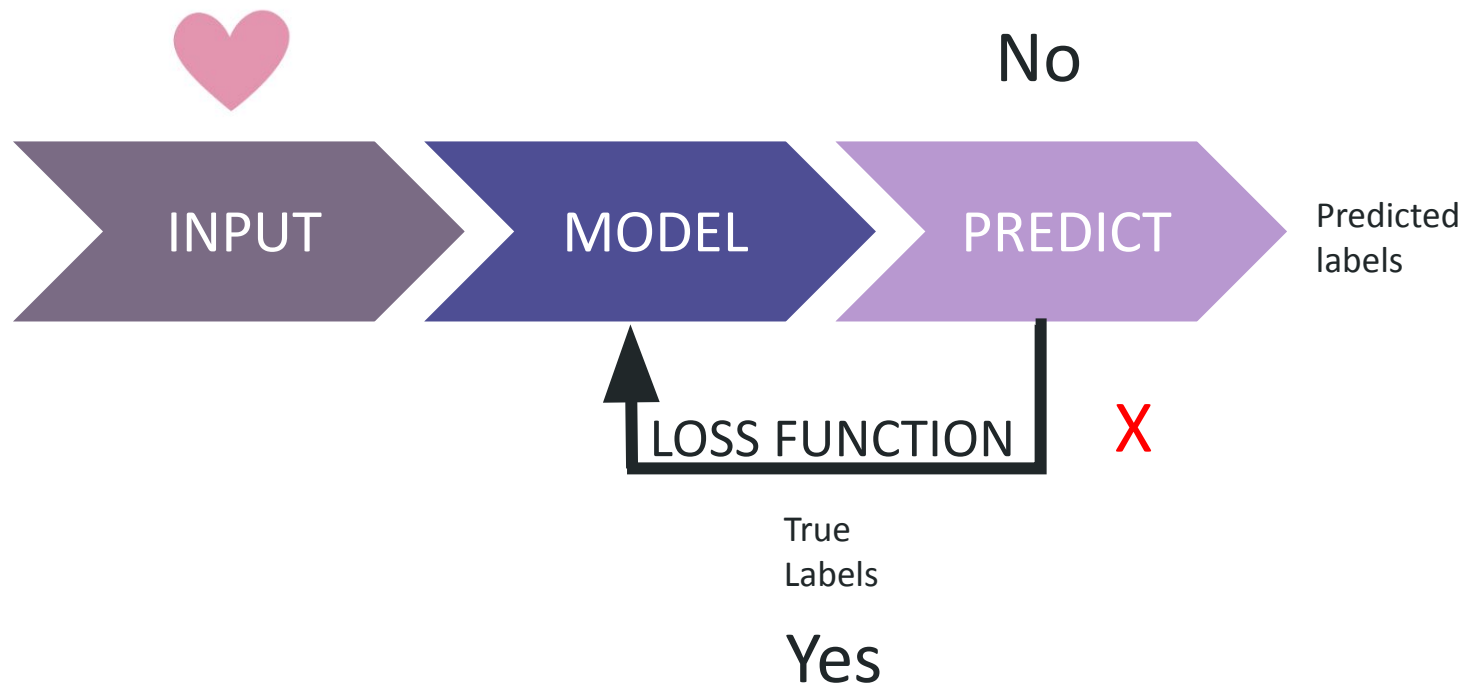
# Model Training



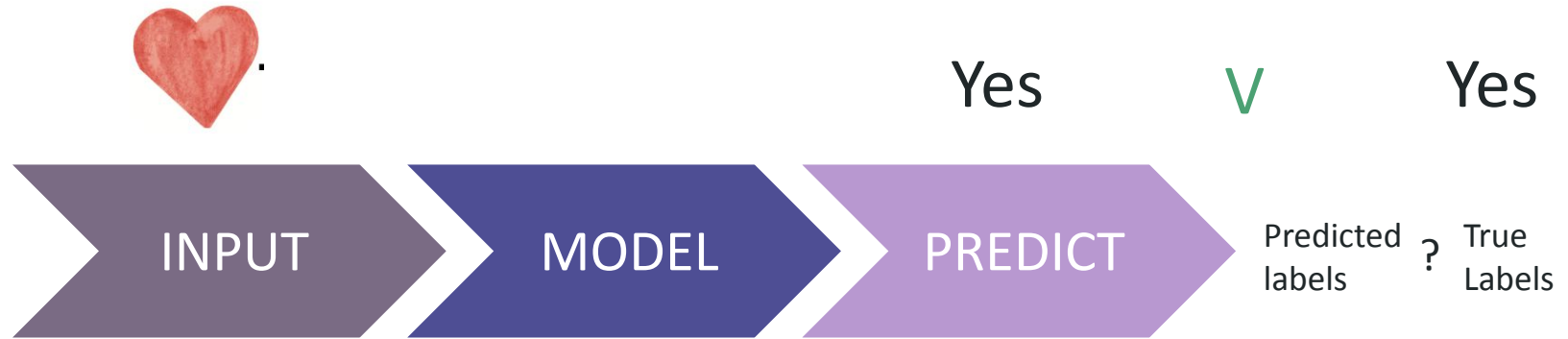
# Model Training



# Model Training



# Model Testing



# GenAI Intro

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# We Use LLMs in Our Day2day

Web search engine / ...

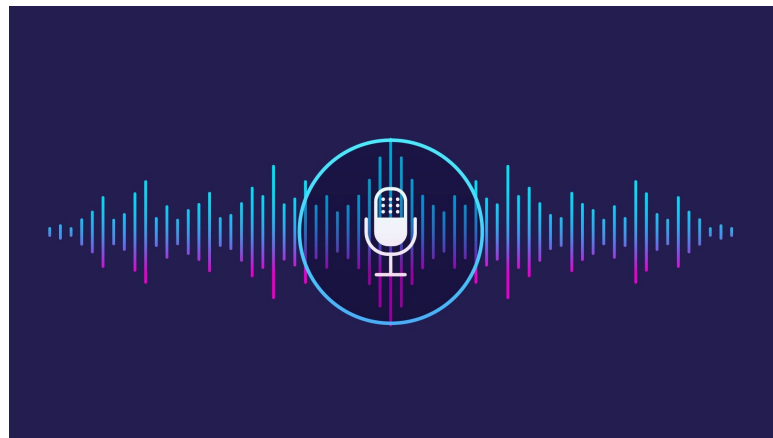
I saw a cat|

I saw a cat on the chair

I saw a cat running after a dog

I saw a cat in my dream

I saw a cat book



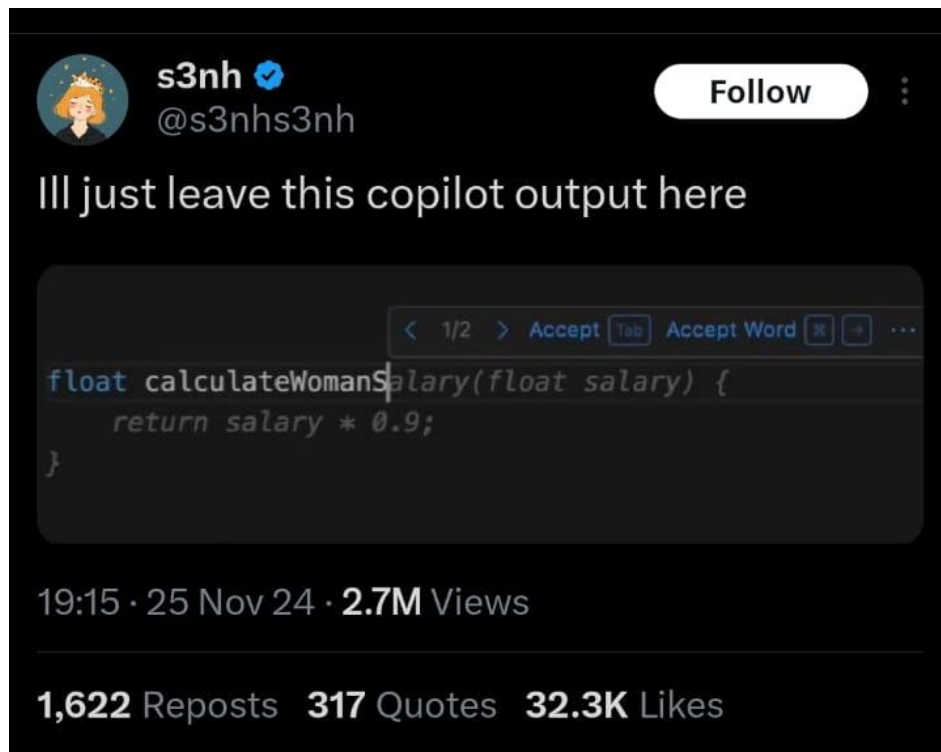
# How do Language Models Work?

Language Models  
can predict  
the next ...

Language Models  
can predict  
the next word

# Challenges with LLMs

- Hallucinations
- Safety (Toxicity)
- Bias & Ethics



# GPT

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and the features you might have missed

# Prompt Engineering - Exact Instructions Challenge

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[https://www.youtube.com/watch?v=cDA3\\_5982h8](https://www.youtube.com/watch?v=cDA3_5982h8)

# Example - Writing Emails, Brainstorming

© Live

תכתוב שיר בחרוזים על אקסו-פלנטות, כולל אזכור של תפקיד הבינה המלאכותית בגילוי 301 מהן.

Other examples: translation

# Example - Generating Images

© Live

create an image of a  
baby bear astronaut  
in mars realistic style





# Example - Modifying Pictures

turn this  
into a  
moon  
landing  
photo



# Search

© Live

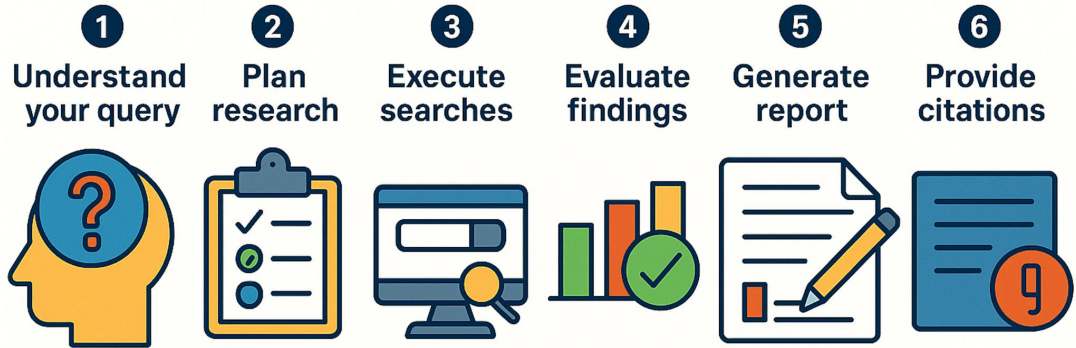
literature review on nanosatellite Reaction Wheel Assemblies (RWA)



# Deep Research in 6 Steps

## Detailed Report

● Recording



Example: Ask about a new topic.

# Voice Mode

©Live

Uses text2speech and speech2text



Example: Ask to practice a certain language

# Think Before Responding

© Live

Example: Get detailed answers to a mathematical question -

there's a spider trying to get from one corner of a box to the diagonally opposite corner of the box. the box is of size:  $5 \times 7 \times 9$ . What is the shortest path he can walk on the surface of the box to the other edge?

# Custom GPTs, Settings, Projects

© Live

<https://chatgpt.com/gpts>

Coloring books

Space

# Notebook LM

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# Notebook LM

© Live

Example: Convert my research at NASA into a podcast.



# Suno

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# Suno.ai

© Live

אני רוצה שיר בעברית בנושא לוויינים

השיר מספר על כיתה ב' 2 בבית ספר ניר שתלמידיה שיגרו את הלוויין הראשון של בית הספר לחלל

# Veio

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# Veo

- Recording

GPT → Create a prompt for veo to generate a video of a girl cartoon style fixing the international space station

Veo → [https://aistudio.google.com/prompts/new\\_video](https://aistudio.google.com/prompts/new_video)

# Lovable

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# Space Debris Game

- Recording

# What did we see today?

Use-case	Tool	Additional Tools	Example
Writing	<a href="#">ChatGPT</a>	<a href="#">Claude</a> , <a href="#">Gemini</a>	Song Writing, Translation
Deep Research	<a href="#">ChatGPT</a>	<a href="#">Gemini</a> , <a href="#">Perplexity</a>	Neuroesthetics
Reasoning	<a href="#">ChatGPT</a>	<a href="#">Claude</a> , <a href="#">Gemini</a> , <a href="#">Perplexity</a>	Math Riddle
Custom Chat	<a href="#">ChatGPT</a>	-	Coloring Book
Search	<a href="#">ChatGPT</a>	<a href="#">Claude</a> , <a href="#">Gemini</a> , <a href="#">Perplexity</a>	Literature Review
Image editing	<a href="#">ChatGPT</a>	<a href="#">Canva</a>	Background Editing
Voice Processing	<a href="#">Notebook LM</a>	-	Podcast Generation
Song Writing	<a href="#">Suno</a>	-	Space Song
Videos	<a href="#">Veo</a>		Video Generation
Product	<a href="#">Loveable</a>	<a href="#">Base44</a> , Figma AI, Manus	Game

# AI is Your New Superpower

1. Experiment with new technologies
2. Subscribe to recommended newsletters (ex: AI with Amitay)
3. Track changes - <https://chatmatrix.live/>



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