

Horizon Mini-Hack

Noa Lubin



50
7.10

©All rights reserved. This presentation and its content are protected by copyright laws. Unauthorised use or reproduction of any part of this presentation

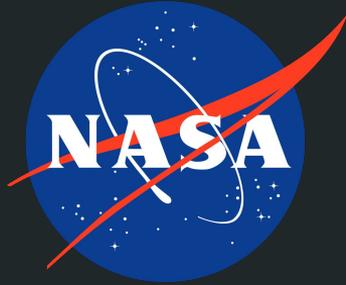


משרד החדשנות,
המדע והטכנולוגיה



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

© Live

© Recording

AI Intro

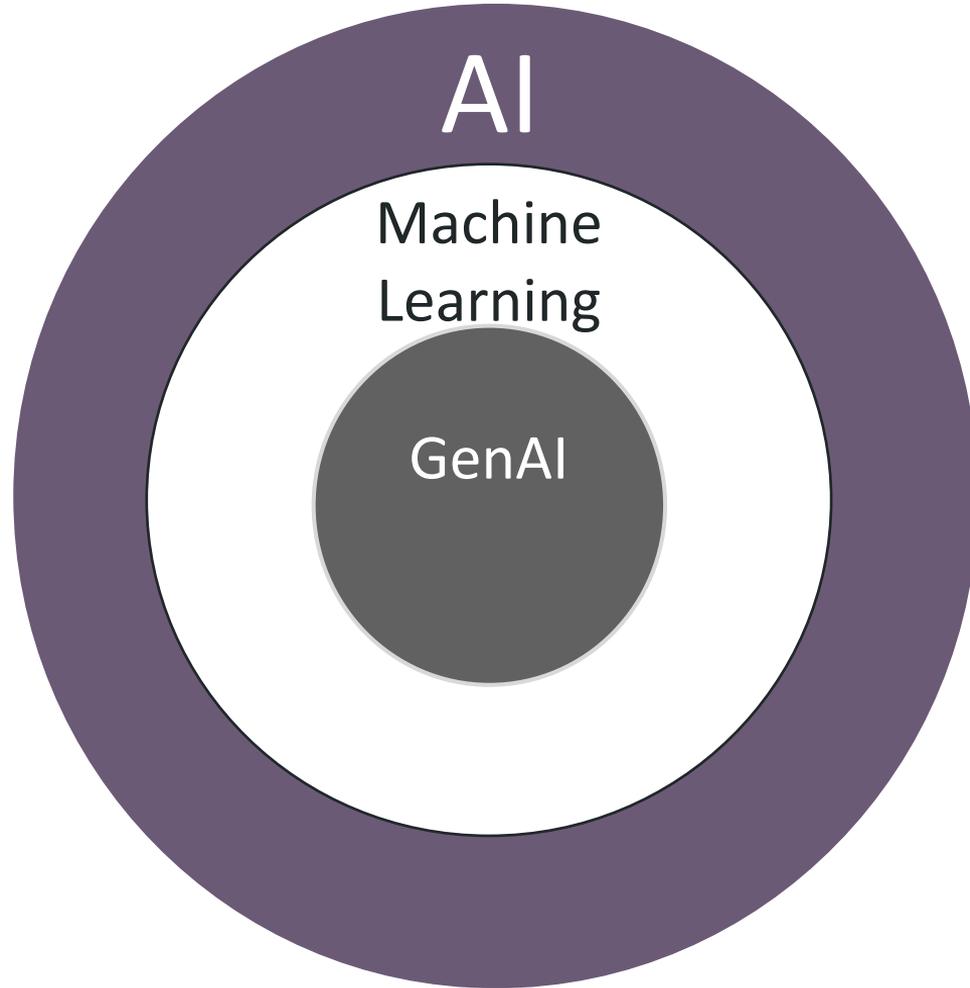
ACCEPTED FOR PUBLICATION IN ASTROPHYSICAL JOURNAL, NOVEMBER 12, 2021

ExoMiner:

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

HAMED VALIZADEGAN,^{1,2} MIGUEL J. S. MARTINHO,^{1,2} LAURENT S. WILKENS,³ JON M. JENKINS,² JEFFREY C. SMITH,^{4,2}
DOUGLAS A. CALDWELL,^{4,2} JOSEPH D. TWICKEN,^{4,2} PEDRO C.L. GERUM,⁵ NIKASH WALIA,⁶ KAYLIE HAUSKNECHT,⁷
NOA Y. LUBIN,⁸ STEPHEN T. BRYSON,² AND NIKUNJ C. OZA²

What is AI?



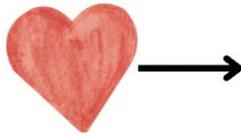
Traditional programming



Example

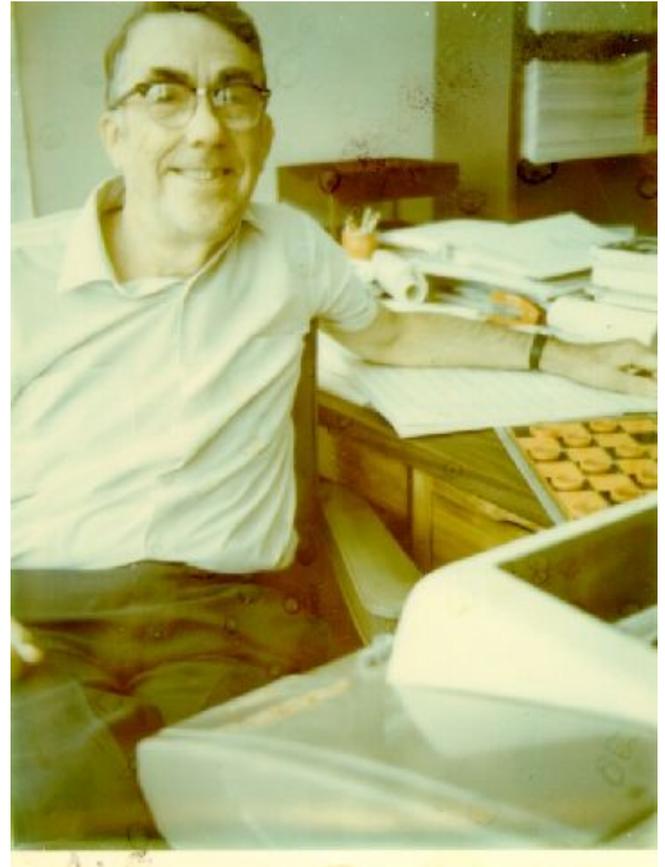
if you see a heart output 'yes'
else output 'no'

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.”

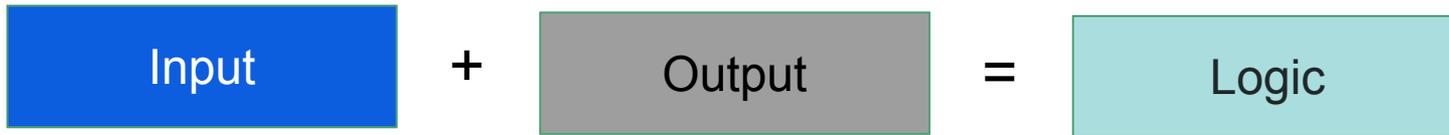
— Arthur Samuel (1959)



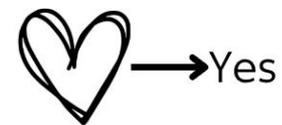
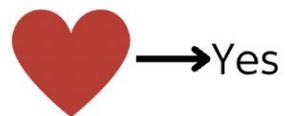
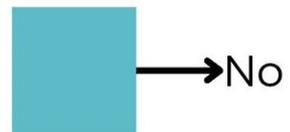
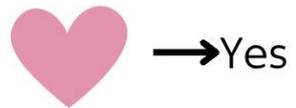
Traditional programming



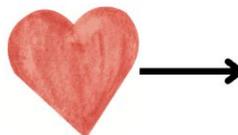
Machine Learning



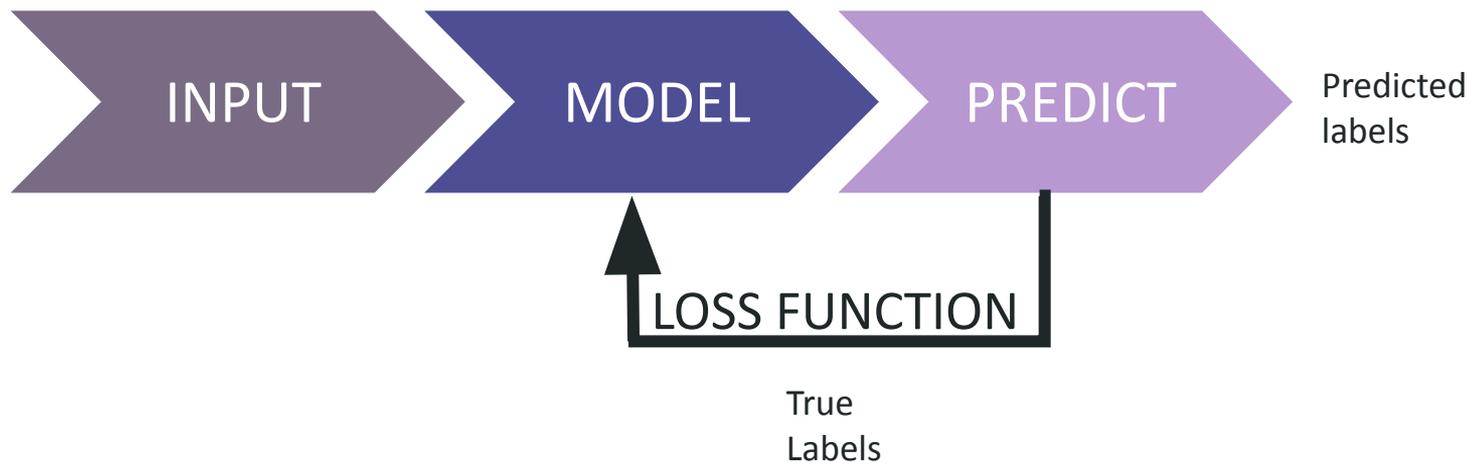
Example



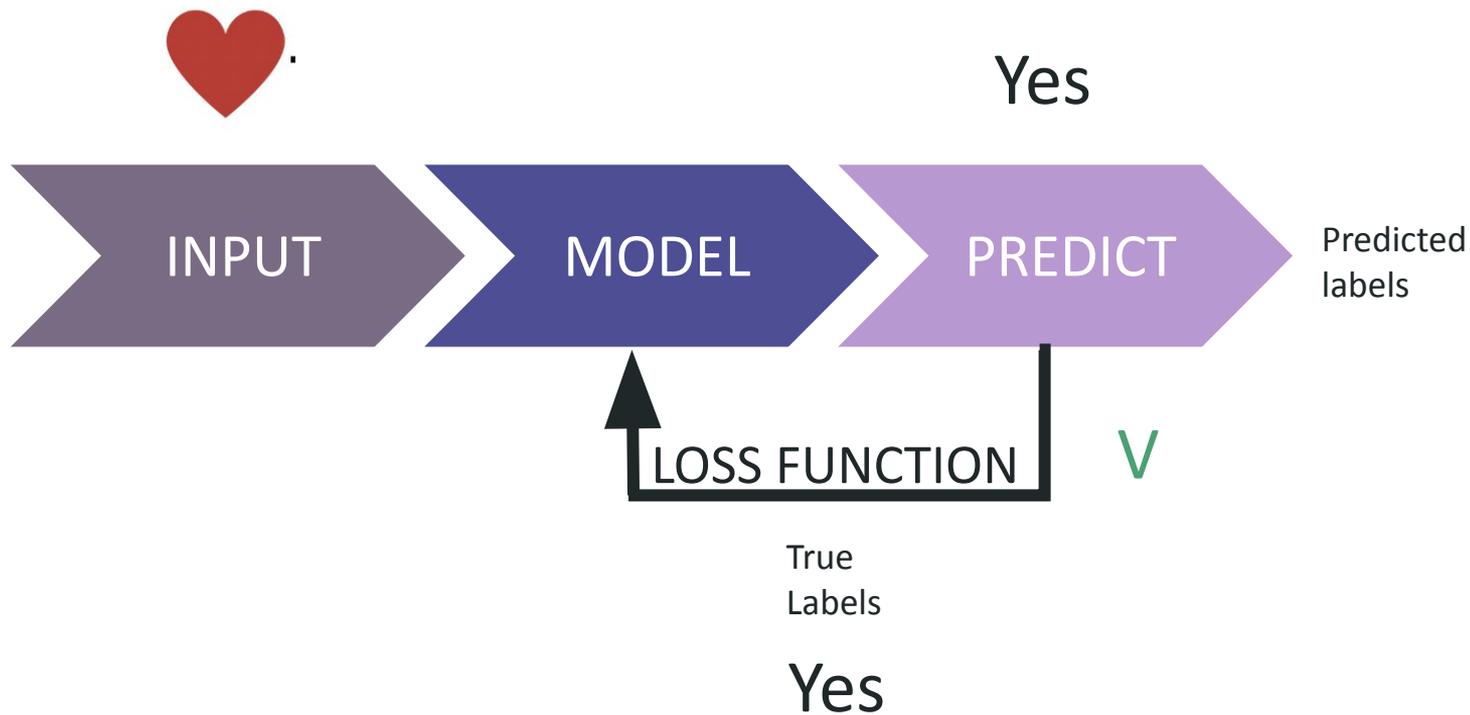
What will be the output for the new input?



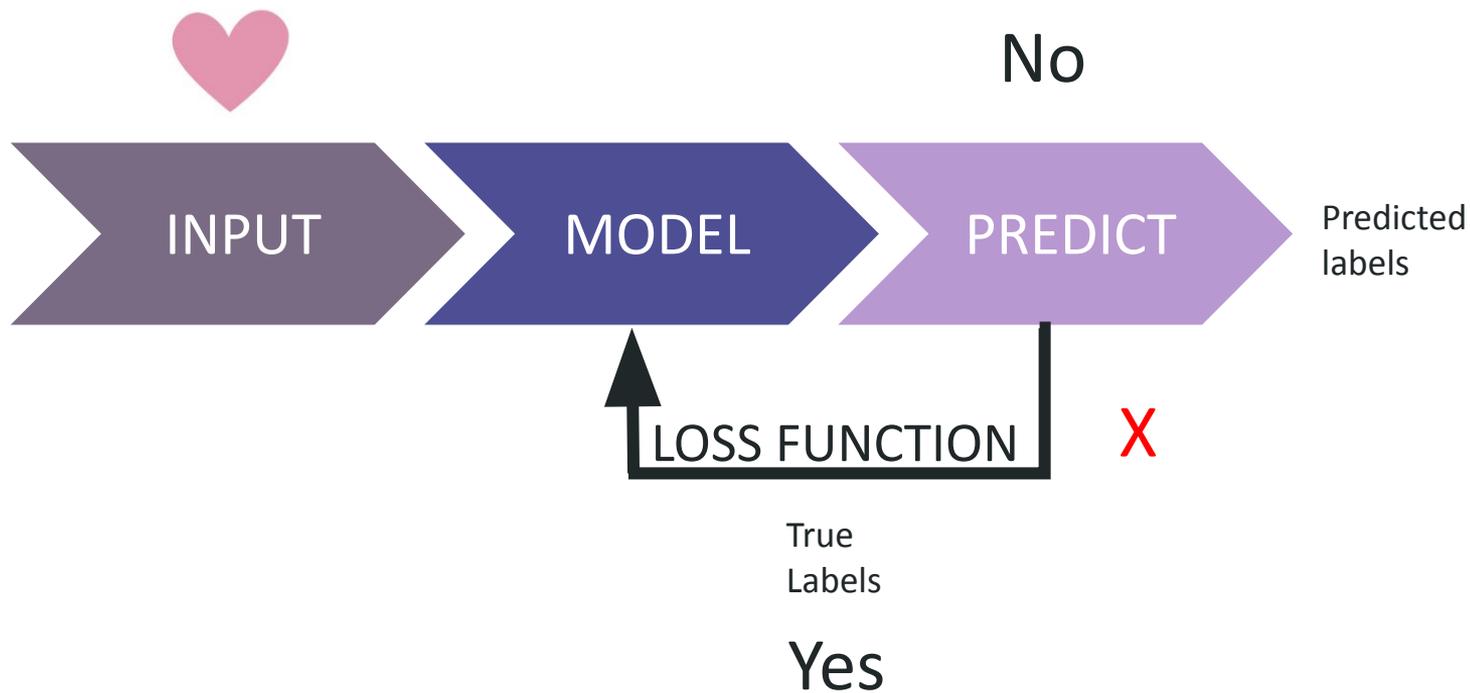
Model Training



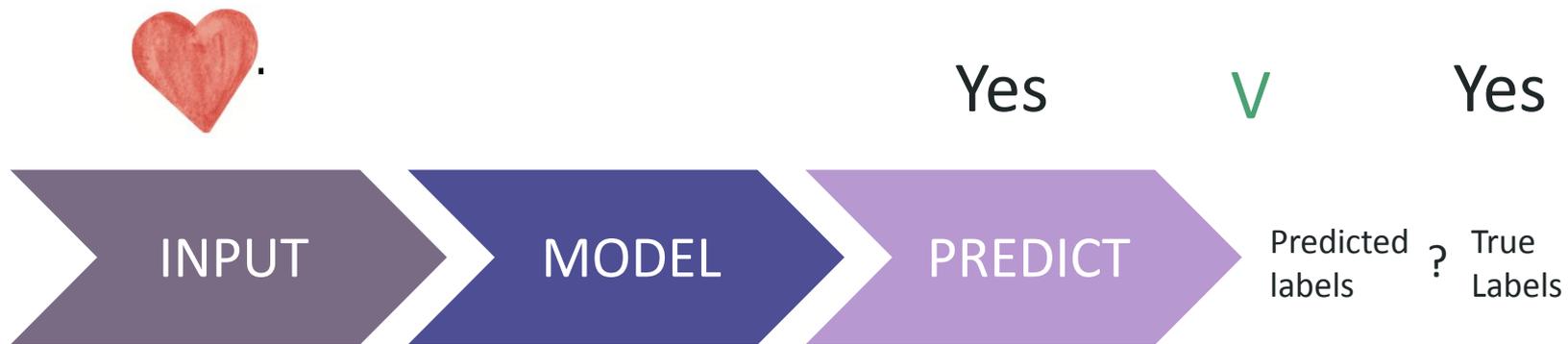
Model Training



Model Training



Model Testing



GenAI Intro

We Use LLMs in Our Day2day

Web search engine / ...

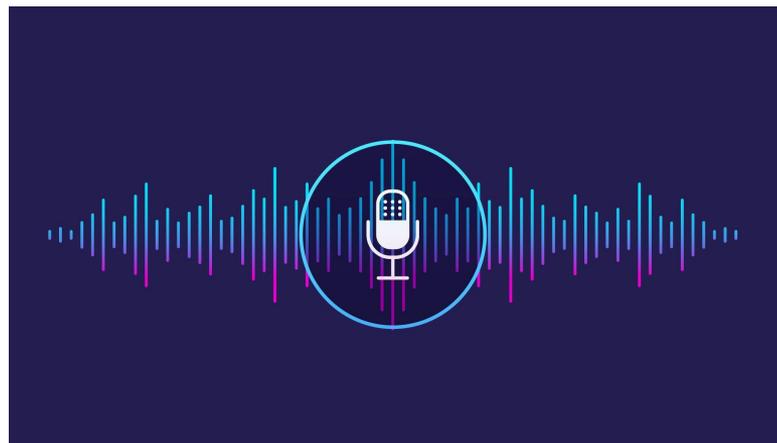
I saw a cat|

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



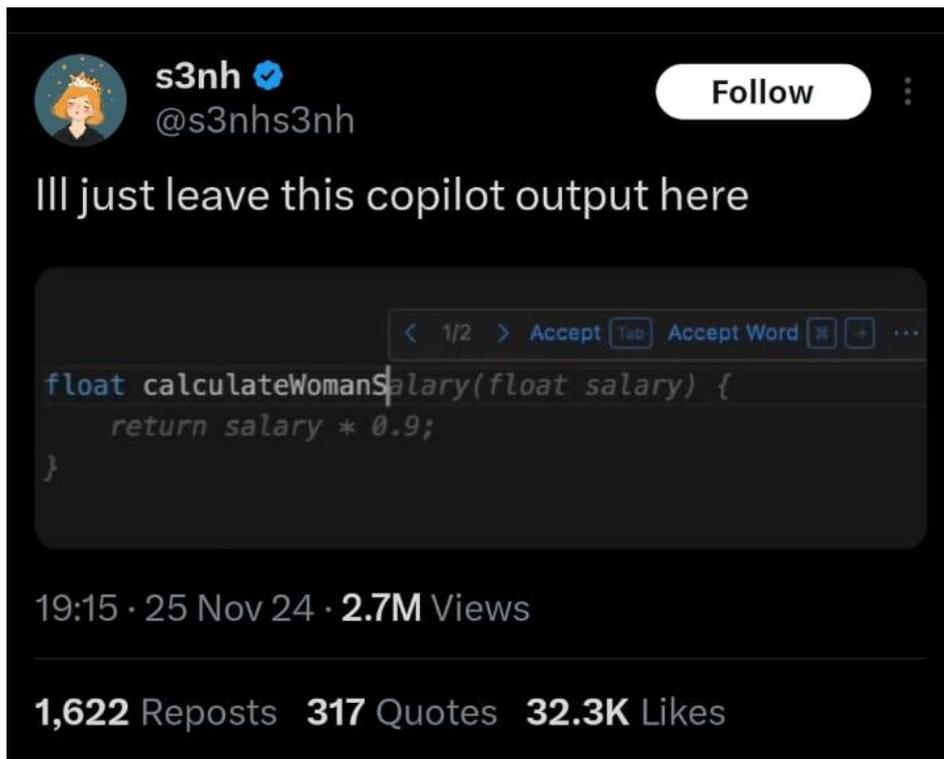
How do Language Models Work?

Language Models
can predict
the next ...

Language Models
can predict
the next **word**

Challenges with LLMs

- Hallucinations
- Safety (Toxicity)
- Bias & Ethics



GPT

and the features you might have missed

Prompt Engineering - Exact Instructions Challenge

© Live

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

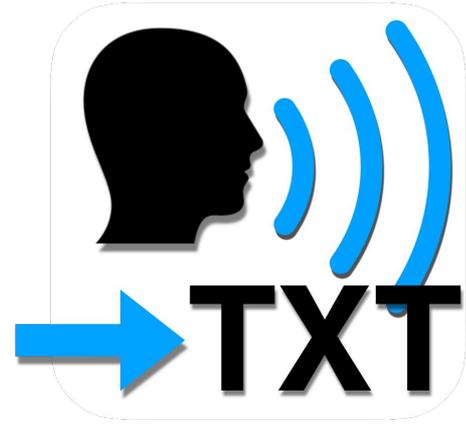


Example: Ask about a new topic.

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

Notebook LM

© Live

Example: Convert my research at NASA into a podcast.

Suno

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

Veo

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

Lovable

Space Debris Game

- ◉ Recording

What did we see today?

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



Noa Lubin