



COLLEGE OF EDUCATION

# AI & AR In the Classroom

## Developing the Future of Learning

Jay Rosen

# Presenting Today



**Jay Rosen**

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# AR & VR in Education



# Augmented Reality (AR)

*Alters* but does not completely replace how you perceive the world around you. It overlays digital information onto your real-world view.

**Immersion:** Partial

**Technology:** Smartphones, tablets, AR glasses.

**Examples:**

- Pokémon GO
- Amazon's Product Viewer





# Virtual Reality (VR)

*Replaces* how you see the world around you, creating a simulated environment.

**Immersion:** Total

**Technology:** Head Mounted Displays (Meta Quest, HTC Vive)

**Examples:**

- Beat Saber (rhythm game)
- Meta Horizon (Metaverse)

# AI in Augmented Reality

**Challenge:** Ensuring smooth placement, interaction, and tracking of digital objects in real-world AR environments.

## AI-Enhanced Solutions

- **ARCore & ARKit** provided real-time surface detection and object anchoring for seamless AR integration.
- **Niantic Spatial Platform** enabled advanced spatial mapping and segmentation for immersive experience.



Unity AR Foundation integrates **ARCore** (Android) and **ARKit** (iOS) libraries to leverage device hardware for precise plane detection and occlusion. In the interior AR scene (left), the virtual aquarium anchors coral and seaweed to detected planes, providing a dynamic environment for fish to navigate. In the outdoor AR scene (right), a grassy area transforms into an interactive pond, inviting players to fish.

# AR & VR Benefits

**Accelerated Learning & Confidence**  
VR training can be up to **4x faster** than traditional methods, boosting learner confidence by as much as **275%**. [1]



[1] Virtual Speech. "Benefits of VR for Developing Soft Skills". <https://virtualspeech.com/blog/benefits-vr-soft-skills-training>

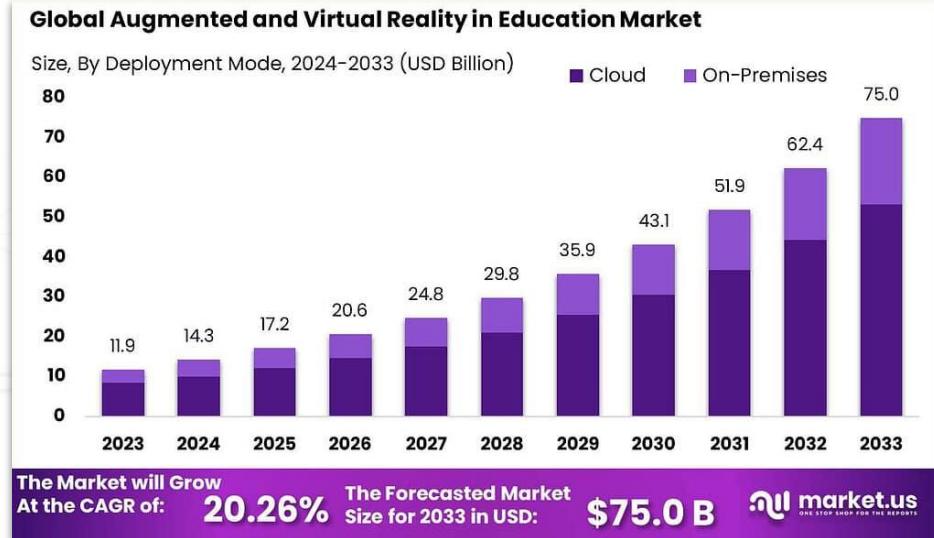
# AR & VR Benefits

## Rapid School Adoption

US K-12 school adoption of AR/VR was projected to surge from <20% in 2022 to over **40% by 2024**. [2]

## Massive Market Growth

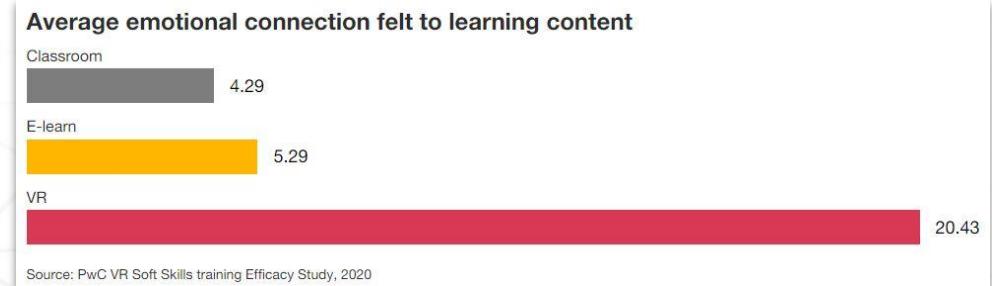
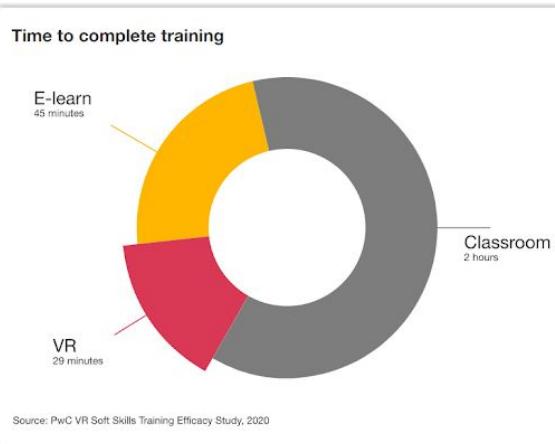
The global AR/VR education market is forecast to potentially exceed **USD 65-80 Billion** by the early 2030s. [3]



[2] Matsh Youth Development. "Emerging Technologies in Education: Statistics on AI and VR Adoption Rates in 2024". <https://www.matsh.co/en/statistics-on-ai-vr-adoption-in-education/>

[3] Market US. "AR and VR in Education Market To Hit USD 75 Billion by 2033" <https://scoop.market.us/ar-and-vr-in-education-market-news/>

# AR & VR Benefits



[4] Virtual Speech. "VR Stats for the Training & Education Industry in 2025". <https://virtualspeech.com/blog/vr-stats-training-education>

# Why Choose AR/VR in Teaching?



**“Gamification”  
Element**



**Improved  
Immersion and  
Learning**



**Accessibility**



# AR Expeditions

{newworldsreading}

# AR Expeditions

{newworldsreading}



EQUITABLE LEARNING  
TECHNOLOGY LAB



E-Learning, Technology  
and Communications



Developmental Research School  
*at the University of Florida*



COLLEGE OF EDUCATION

UF Lastinger Center for Learning  
UNIVERSITY of FLORIDA



## About New Worlds Reading Initiative

The **New Worlds Reading Initiative** is a book distribution program in collaboration with Scholastic, particularly for reluctant and struggling readers.

New Worlds Reading's books and activities support students in:

- Strengthening literacy skills
- Building reading confidence
- Nurturing a lifelong love of reading

# AR Expeditions: Project Reasoning



## Problem

The NWRI program distributes books to families with struggling readers, but how do we **encourage them to engage** with these books?



## Solution

An app that combines the magic of **augmented reality** with **literary games**, building upon themes of the NWRI books.

# AR Expeditions Overview

Students explore exciting environments, interact with educational content, and foster a love for reading. AR Expeditions builds confidence and motivates children to build a deeper connection to literacy.

**Target Audience :** 3rd - 5th graders

**Platform:** Smartphones and tablets

**Game Engine:** Unity & AR Foundation



# Ocean Experience

First of **four themes**, focusing on the **aquatic ecology of Florida**.



A promotional graphic for "AR Expeditions" by "newworldsreading". On the left, the text "AR Expeditions" is written in large white letters, with "newworldsreading" in smaller orange letters below it. To the right, there is a stylized illustration of a sea turtle and a clownfish swimming over a coral reef. Next to the illustration is a smartphone displaying the "OceanAR" app interface. The app menu includes options like "Aquarium", "Bubble Pop", "Coloring", "Fishing", and "Books".

Split into “**mini-experiences**”:

- Aquarium
- Bubble Pop
- Coloring
- Fishing

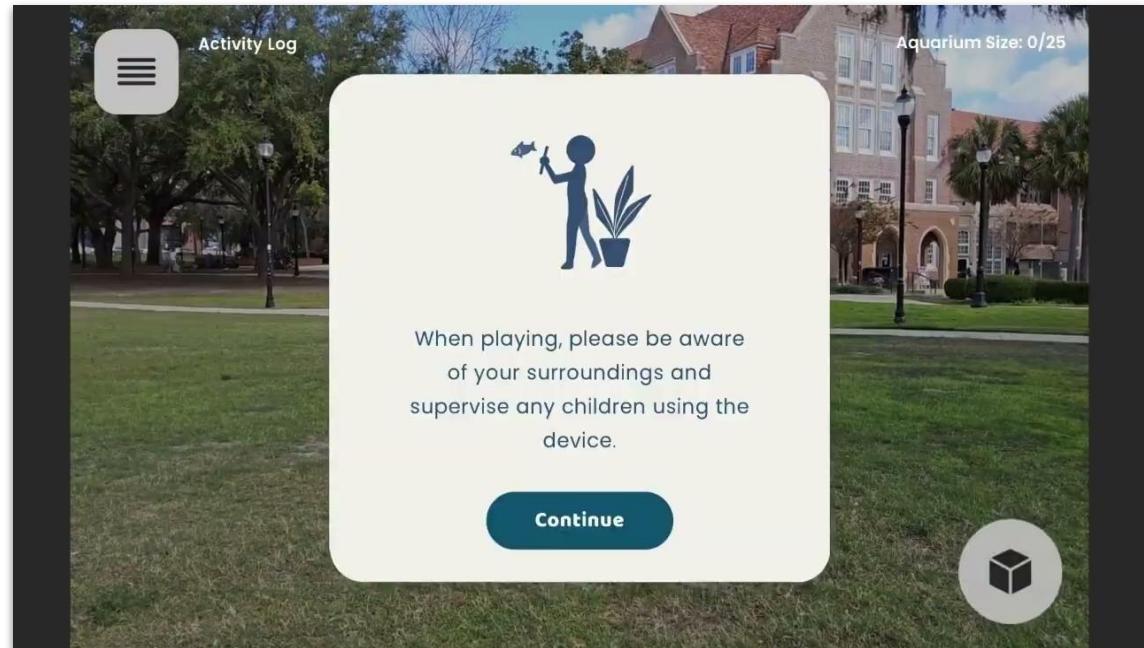


# Aquarium

AR  
EXP

Build a live ecosystem in your room, and watch animals interact with each other and their environment.

**AR:** Additive construction.  
Life size animals swim in the space and plants become rooted to the ground plane.



# Bubble Pop

Pop the bubbles corresponding to correct answers, strengthening your knowledge about Florida ecology.

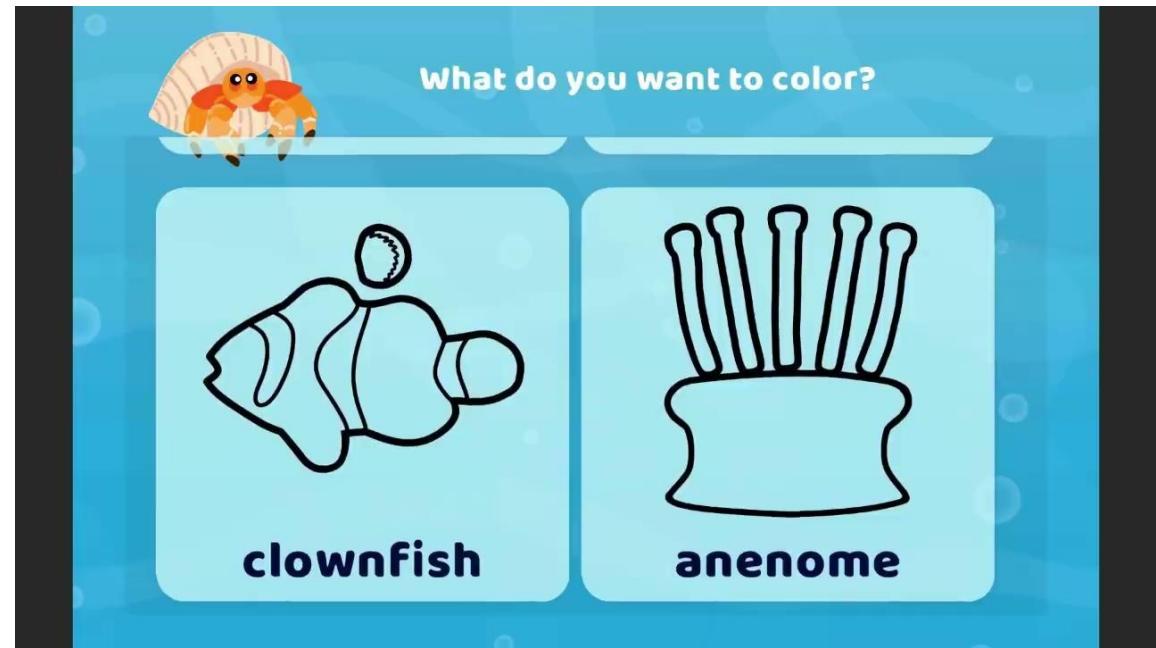
**AR:** Bubbles and marine life fill the room. Can walk around to see new viewpoints.



# Coloring

Color in your favorite sea creature, then watch it come to life as a 3D model.

**AR:** Animate the student creations, from 2D to 3D.



# Fishing

Answer vocabulary questions to obtain lures, then use those lures to reel in fish.

**AR:** Transform the ground plane into a fishing pond and walk on the wooden dock.

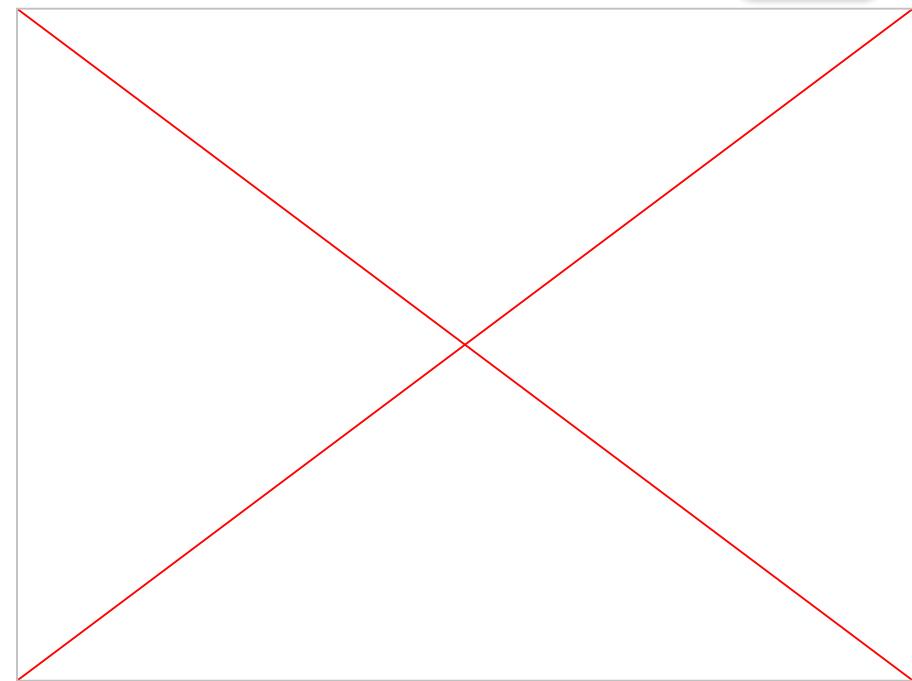
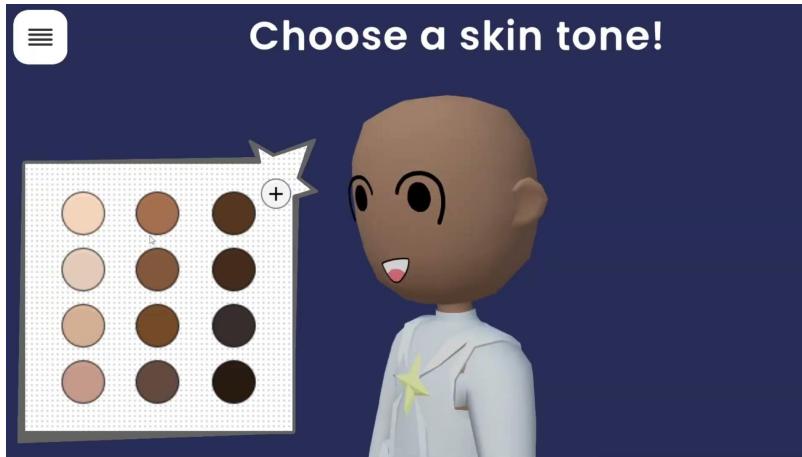


# AR Expeditions: Impact



- Ongoing research pilot at P.K. Younge Developmental Research School led by doctoral student Irene Kao and supervised by Dr. Nigel Newbutt
- 3rd grade test group found the app **exciting** and **engaging**, helped them **understand** the subject matter of the books
- Publication at *The Society for Information Technology and Teacher Education (SITE)*
  - “From Participants to Designers: Exploring Self-Efficacy through CoDesigning an Augmented Reality Application in a School”
- Forthcoming publication for *IEEE International Conference on Advanced Learning Technologies (ICALT)*
  - “Exploring Elementary Students’ Perception and Engagement of Reading using an Augmented Reality Educational Technology Application”

# The Next Expedition

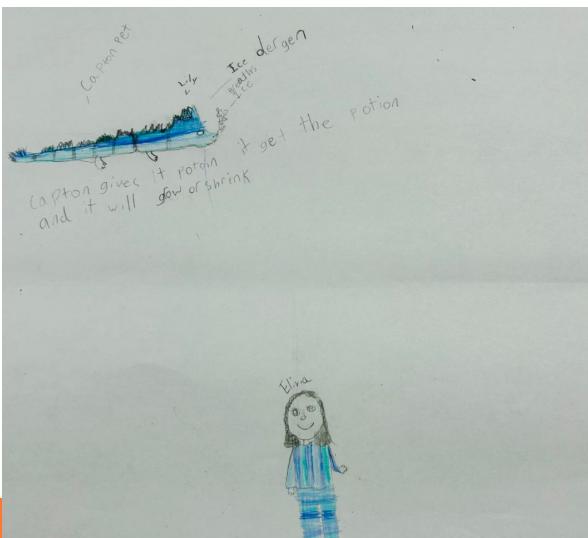
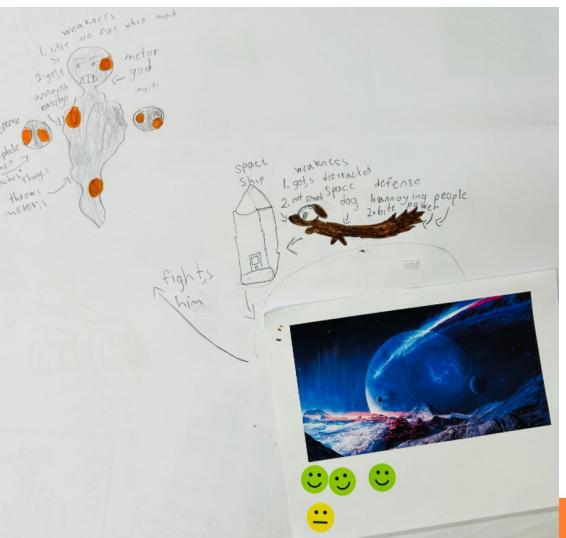
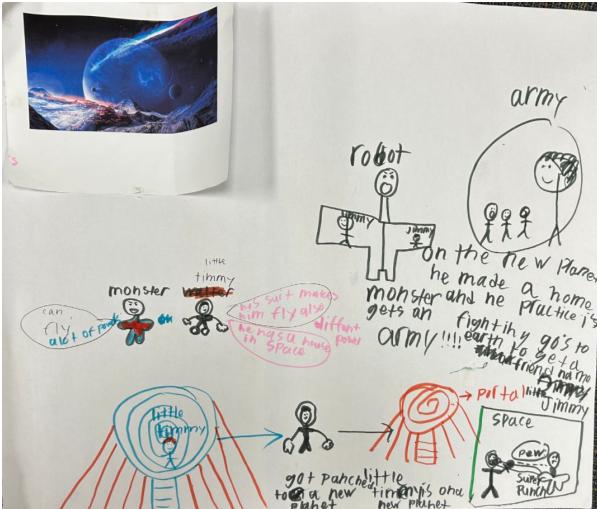


# Co-Design

What **setting** are you drawn to? Is there a reason why?



# Co-Design





# Developing with AI

# Developing with AI & Augmented Reality for the Classroom

## New Worlds Reading AR Expeditions

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Application Programmer II  
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University of Florida College of Education

### Ideation & Collaboration

#### Challenge

Generating innovative ideas and transforming them into structured game documents.

#### AI-Enhanced Solutions

- **Miro** AI optimized brainstorming sessions more efficiently with AI-generated sticky notes.
- **ChatGPT** expanded rough ideas into well-defined game play mechanics, narrative, and design elements.
- **Notebook LM (Gemini)** compiled game design content into a shared, interactive knowledge base.



### Concept Art

#### Challenge

Racing to produce diverse, high-quality concept art while maintaining design consistency.

#### AI-Enhanced Solutions

- **DALL-E** & **MidJourney** produced hundreds of art concepts from descriptive prompts, allowing fast exploration of different themes.
- **Adobe Firefly** polished and refined visuals, removing defects from the AI-generated images.



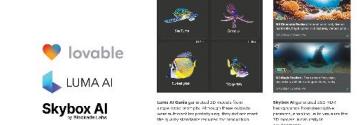
### 3D Prototypes

#### Challenge

Quickly developing interactive prototypes and generating 3D models for early-stage visualization.

#### AI-Enhanced Solutions

- **Lovable** created functional prototypes for AR demos and research tools with minimal coding.
- **Luma AI** generated NeRF-based, textured 3D models from descriptive prompts.
- **Skybox AI** provided 360-degree HDR backgrounds that simulated underwater game environments.



### Audio & Music

#### Challenge

Producing custom audio sound effects, background music, and multilingual voiceovers.

#### AI-Enhanced Solutions

- **SUNO** and **Google Music FX** generated looping instrumental tracks, ambient sounds, and custom music aligned with the game's underwater theme.
- **ElevenLabs** (**Deep Voice for Unity**) created custom life-like voiceovers for the game narrator.



### Abstract

New Worlds Reading AR Expeditions is an educational Augmented Reality (AR) video game designed to enhance literacy in 3rd- to 5th-grade students through interactive, immersive experiences. By integrating AI tools at every stage of development—from brainstorming and concept art to programming and gameplay— we demonstrate the transformative potential of AI-driven design in educational technologies. AI-enhanced tools powered the rapid generation of creative ideas, streamlined the artistic assets, and enabled intelligent AI-powered assistants to teach diverse student audiences. Moreover, these AI-enhanced methodologies effectively address common challenges in software and game development, such as overwriting design bestactices, reducing resource-intensive asset production, and simplifying complex debugging processes. Dynamic gameplay is supported by AI-generated behavior trees, allowing characters to exhibit realistic interactions and respond to player decisions. This project exemplifies how the integration of AI and AR technologies can create engaging, personalized learning environments to enhance literacy outcomes through fun games. The collaboration between the UF College of Education and technical teams further underscores the critical role of interdisciplinary innovation in shaping the future of learning.

### Game Development

#### Challenge

Developing, debugging, and integrating complex game scripts within the Unity game engine.

#### AI-Enhanced Solutions

- **GPT-4 Vision** assisted in generating C# scripts, accelerating the development of gameplay elements.
- **GPT-4 Vision** can interpret screen captures of the game to help debug issues with Unity and scripts.
- **Github Copilot** provided real-time code completion and error detection, streamlining the coding process.



### Augmented Reality

#### Challenge

Ensuring smooth placement, interaction, and tracking of digital objects in real-world AR environments.

#### AI-Enhanced Solutions

- **ARCore** & **ARKit** provided real-time surface detection and object anchoring for seamless AR integration.
- **Niantic Spatial Platform** enabled advanced spatial mapping and segmentation for immersive experience.



### AI Gameplay

#### Challenge

Designing dynamic, interactive gameplay where AI-controlled characters react to players and environment.

#### AI-Enhanced Solutions

- **Unity ML Agents** & **OPSiVE Behavior Trees** define decision-making pathways, allowing AI characters to respond to stimuli and adapt to changing in-game conditions.
- **Llama3 (exploratory)** is being evaluated for AI-driven conversations to further personalize learning and offer custom challenges.



### Multi-Language Support

#### Challenge

Producing custom audio sound effects, background music, and multilingual voiceovers.

#### AI-Enhanced Solutions

- **Google Translate** generated initial text translations, providing a foundation for further linguistic refinement.
- **Meta Seamless MAT** & **Recognosimo (exploratory)** are both under evaluation for real-time text and audio translation, including offline voice recognition to offer new methods of interactivity.



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E-Learning, Technology  
and Communications

AR  
EXP

new worlds  
reading



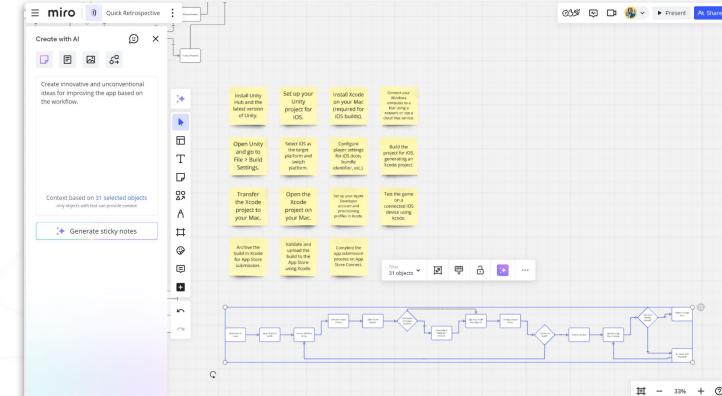
# Brainstorming



**Challenge:** Generating innovative ideas and transforming them into structured game design documents.

## AI-Enhanced Solutions

- **Miro AI** organized brainstorming sessions more efficiently with AI generated sticky notes.
- **ChatGPT** expanded rough ideas into well-defined gameplay mechanics, narrative, and design elements.
- **Notebook LM (Gemini)** compiled game design content into a shared, interactive knowledge base.



The screenshot shows the NotebookLM interface titled "NWR AR Expeditions - Game Design Document". It features a sidebar with "Sources" (Aqua Arcade GDD v0.1, Bubble Pop Quiz GDD v0.1, Lastinger AR Ocean E...), a "Timeline" section, and a "Help me create" section with "Initial Core Experience (Hiring Agency)". The main area contains sections like "Audio Overview" (with a play button and 00:05 / 10:36), "Suggested questions" (with three items), and a "Summary" section describing the document's purpose. At the bottom, there are buttons for "View Chat", "Sources", "Start typing...", and "Notebook guide".

# Generative Art



DALL-E



**Challenge:** Rapidly producing diverse, high-quality concept art while maintaining design consistency.

## AI-Enhanced Solutions

- **DALL-E and MidJourney** produced hundreds of art concepts from descriptive prompts, allowing fast exploration of different themes.
- **Adobe Firefly** polished and refined visuals, removing defects from the AI-generated images.



# Generative Art

## Newer AI-Enhanced Solutions

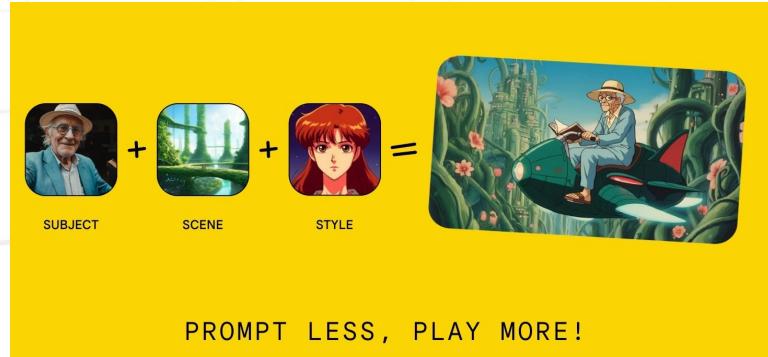
**Google Gemini Imagen3 & Whisk** provide more control to adjust and modify the AI image by providing Subject, Scene, Style.

Capable of generating video clips from the image.



# Imagen 3

Whisk EXPERIMENT



PROMPT LESS, PLAY MORE!

# Generative Art

## Newer AI-Enhanced Solutions

GPT 4o image generation within ChatGPT creating images that retain resemblance and style. Improved letters and graphic logos.

Upload a picture, and request to make it in a different style.

- In the style of Studio Ghibli
- Muppets Style
- As an 80's action figure with accessories



# ChatGPT

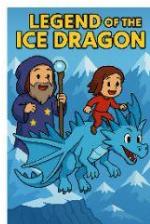


# Developing Storyboards

Upload a picture of the character as a reference and provide some background about the story. Mention the expected style of art and target audience.

Prompts to create these images in ChatGPT

- Create a 4 panel comic strip of story.
- Create a comic book cover for this story.
- Create an image of this as an AR / Mixed Reality game commercial.



# Developing Characters

Upload a picture or image generated by ChatGPT.

Describe what they are wearing, what they are doing, where they are, who they are with.

Extract the character from this image, and place on a white background for a character sheet



# Audio & Music

**Challenge:** Producing custom audio sound effects, background music, and multilingual voiceovers.

## AI-Enhanced Solutions

- **SUNO and Google Music FX** generated looping instrumental tracks, ambient sounds, and custom music aligned with the game's underwater theme.
- **ElevenLabs** created custom life-like voiceovers for the game narrator.

**SUNO** ||**ElevenLabs**  [LABS.GOOGLE](https://labs.google.com)



Google Music FX generated instrumental music tailored to specified genres and thematic prompts.



SUNO generated compelling audio tracks featuring both instrumental compositions and synthesized vocal performances based on prompts.

# Music

SUNO generated music soundtracks of various genres developed for the Graphic Novel Expedition.

Each thematic album adds to the immersion of the AR experience and storytelling.

- Synth-Pop
- Ambient EDM
- Renaissance Folk
- Sea Shanty Orchestral
- Super Hero Cinematic





music for the High Seas pirate ship based game world that features the Giant Squid and riding sea creatures to explore the oceans. These are some concept art of this game theme.

Thought for 20 seconds >

Below are concise, single-line SUNO prompts you can paste directly into the generator to cover the key moments in your High Seas Pirate Adventure world.

Each line is loop-friendly, kid-safe, and keeps the energy playful while matching the art style you shared.

#	Game Moment	SUNO Prompt
1	Title / Main Menu	swashbuckling orchestral-folk, jaunty pirate fiddle & whistle melody, hand-drum pulse, kids "yo-ho!" shouts, bright D-major, seamless loop
2	Sailing the Waves	bouncy sea-shanty pop-rock, 108 BPM, acoustic guitar strums, accordion riffs, seagull & splash FX, cheerful exploration vibe, loop-ready
3	Riding Dolphins & Sea Creatures	upbeat tropical ska-chip fusion, playful brass stabs, 8-bit bubbles, steel-drum arpeggios, low-gravity surf feel, background videogame music
4	Giant Squid Encounter	cinematic orchestral-rock hybrid, dramatic tom rolls, tense string ostinato, heroic brass, minor-to-major triumph lift, kid-friendly boss battle loop
5	Underwater Treasure Hunt	lo-fi ambient reef groove, 90 BPM, airy synth pads, gentle marimba & kalimba plucks, bubbly sonar pings, dreamy adventure, seamless loop
6	Pirate Ship Deck / Upgrade Menu	tavern chillhop shanty, muted banjo and upright bass, brushed snare shuffle, subtle vinyl crackle, cozy 96 BPM, menu background music

Mix and match these prompts as needed—the set will give your ocean world a unified but varied soundtrack.  
Happy sailing!



concept art from the Legend of the Ice Dragon game. Create the background music for this game

Thought for 6 seconds >

Here's a full set of single-line SUNO prompts—each one designed to loop cleanly and match a different moment in **Legend of the Ice Dragon**. Copy any line straight into Suno to generate its background track.

#	Game Moment	SUNO Prompt (one line each)
1	Title / Main Menu	orchestral-folk overture, snowy mountain vista, lute & recorder melody, soft boys-choir "ahh", gentle wind FX, dignified D-major, loop-ready
2	Overworld Exploration (Ice Plateau)	renaissance adventure march, nyckelharpa ostinato, sleigh-bells, light strings, playful woodwinds, kid-friendly heroic vibe, seamless loop
3	Enchanted Pine Forest	medieval acoustic trio, warm guitar, hand drum tap, fluttering fairy flutes, winter forest ambience, calm wandering theme, 6/8 metre, loop-ready
4	Dragon Showdown (Boss Battle)	epic orchestral-drums + choir, bold brass fanfares, icy whoosh FX, 12/8 gallop, minor-to-major triumph lift, high-energy yet child-safe, seamless loop
5	Wizard's Tower / Safe Village	lo-fi tavern chill, dulcimer plucks, upright bass, crackling fireplace, soft vinyl hiss, relaxed 90 BPM, menu background music
6	Campfire / Character Gear Up	fantasy folk-pop, hummed "la-la" chorus, light tambourine, acoustic guitar strums, cozy evening mood, 100 BPM swing, loop-ready

These six cues will give the whole adventure a cohesive, kid-friendly medieval-fantasy sound while keeping each gameplay context distinct.



Simple   Custom

V4.5

Jay Rosen  
@jayrosen

Home

Create

Library

Explore

Search

Notifications

Lyrics

Auto

Write Lyrics

Verse 1  
 Oh gather 'round, good friends of mine,  
 Our knight straps on his helm so fine.  
 A clever mage with cloak of blue  
 Joins the path in morning dew.

Refrain (hum-along "la-la-la" from children's choir)  
 La-la-la, to the peaks of white,  
 La-la-la, in the soft moonlight.  
 Up the mountain we will go,  
 Chasing sparkles in the snow.

Verse 2  
 Across the bridge of twinkling frost,  
 Through jolly pines where birds are lost,  
 They share their snacks and stories bright—  
 Kindness is their greatest might.

Refrain  
 La-la-la, to the peaks of white,  
 La-la-la, in the soft moonlight.  
 Up the mountain we will go,  
 Chasing sparkles in the snow.

Instrumental    By Line    Full Song

Style Description

renaissance-style medieval folk ensemble—lute, recorder, nyckelharpa, gentle hand drum, tambourine jingles, child "la-la" choir pads; bright D-major mixolydian melody, 6/8 lifting gait; kid-friendly mountain-quest mood, seamless 16-bar loop

lo-fi    8bit    classical    synthwave    french indie pop    indi

Exclude Styles

Enter styles to exclude

Create

Ballad of the Snow-Top Quest  
Jay Rosen | 00:00 / 02:49

## My Workspace

Filters (1)

Liked

Search

9



Dolphin riding tropical waves



Sailing the Waves



High Seas Pirate Adventure (Title Screen)



High Seas



Pages in Motion



Open the Book Together



War-drums &amp; Bodhrán



Campfire



Potion Shop



Castle Entrance



Dragon Showdown



Enchanted Pine Forest

Edit   Published



Ballad of the Snow-Top Quest

Jay Rosen

Add a Caption

renaissance-style medieval folk ensemble—lute, recorder, nyckelharpa, gentle hand drum, tambourine jingles, child "la-la" choir pads; bright D-major mixolydian melody, 6/8 lifting gait; kid-friendly mountain-quest mood, seamless 16-bar loop

Show Summary

Verse 1  
 Oh gather 'round, good friends of mine,  
 Our knight straps on his helm so fine.  
 A clever mage with cloak of blue  
 Joins the path in morning dew.

Refrain (hum-along "la-la-la" from children's choir)  
 La-la-la, to the peaks of white,  
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Verse 2  
 Across the bridge of twinkling frost,  
 Through jolly pines where birds are lost,  
 They share their snacks and stories bright—  
 Kindness is their greatest might.

Refrain  
 La-la-la, to the peaks of white,  
 La-la-la, in the soft moonlight.  
 Up the mountain we will go,  
 Chasing sparkles in the snow.

Bridge (spoken-song with recorder flourish)  
 "Mush" says the mags. Feel the cool wind.

# AI Video



**Challenge:** Generating animations to convey storytelling.

## AI-Enhanced Solutions

- **Higgsfield** creates video clips using a start and end frame. Library of SFX and types of camera shots.
- **Gemini VEO 2** creates video clips from a text prompt (with Gemini Pro), and with Image prompt (with Whisk)



Create • Higgsfield

higgsfield.ai/create/video

Explore Create Iconic Effects New Drops Pricing

Text to Image Image to Video

GENERAL

Prompt

In a sunlit classroom, a magical book lies open on a desk, its pages alive with vibrant illustrations of a knight and a dragon leaping forth. The Steadicam glides gracefully behind them, catching

Enhance on

Model Standard

Generate

0:00

0:00 / 0:05

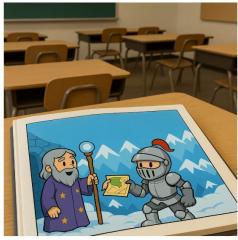
Rerun Settings

0:00

In a sunlit classroom, a magical book lies open on a desk, its pages alive with vibrant illustrations of a knight and a dragon leaping forth. The Steadicam glides gracefully behind them, catching papers suspended

Rerun Settings

# Storyboard to Video



# AI Video Landscape is Evolving



PiKa

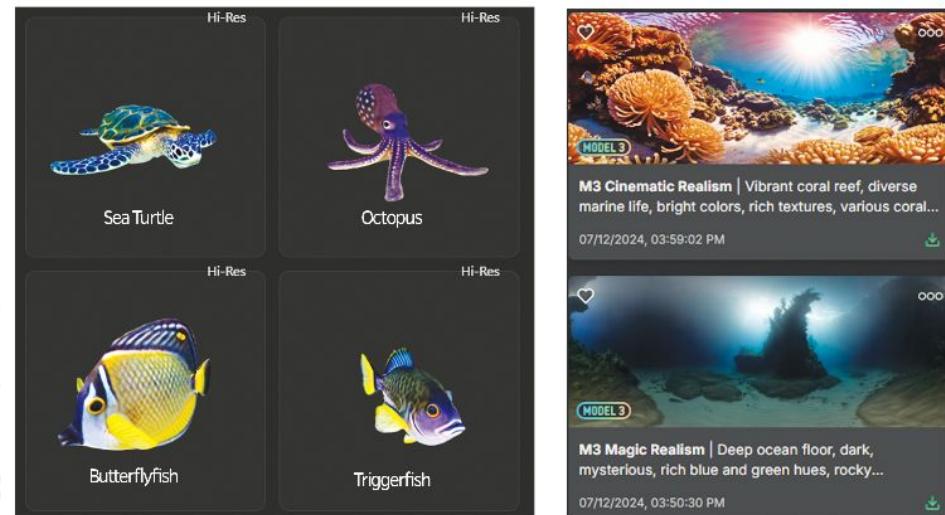
# Prototypes



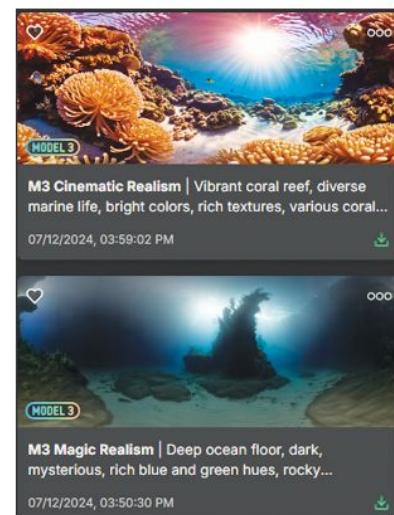
**Challenge:** Quickly developing interactive prototypes and generating 3D models for early-stage visualization.

## AI-Enhanced Solutions

- **Lovable** created functional prototypes for AR demos and research tools with minimal coding.
- **Luma AI** generated NeRF-based, textured 3D models from descriptive prompts.
- **Skybox AI** provided 360-degree HDR backgrounds that simulated underwater game environments.
- **Hugging Face** an exploratory playground for AI apps.



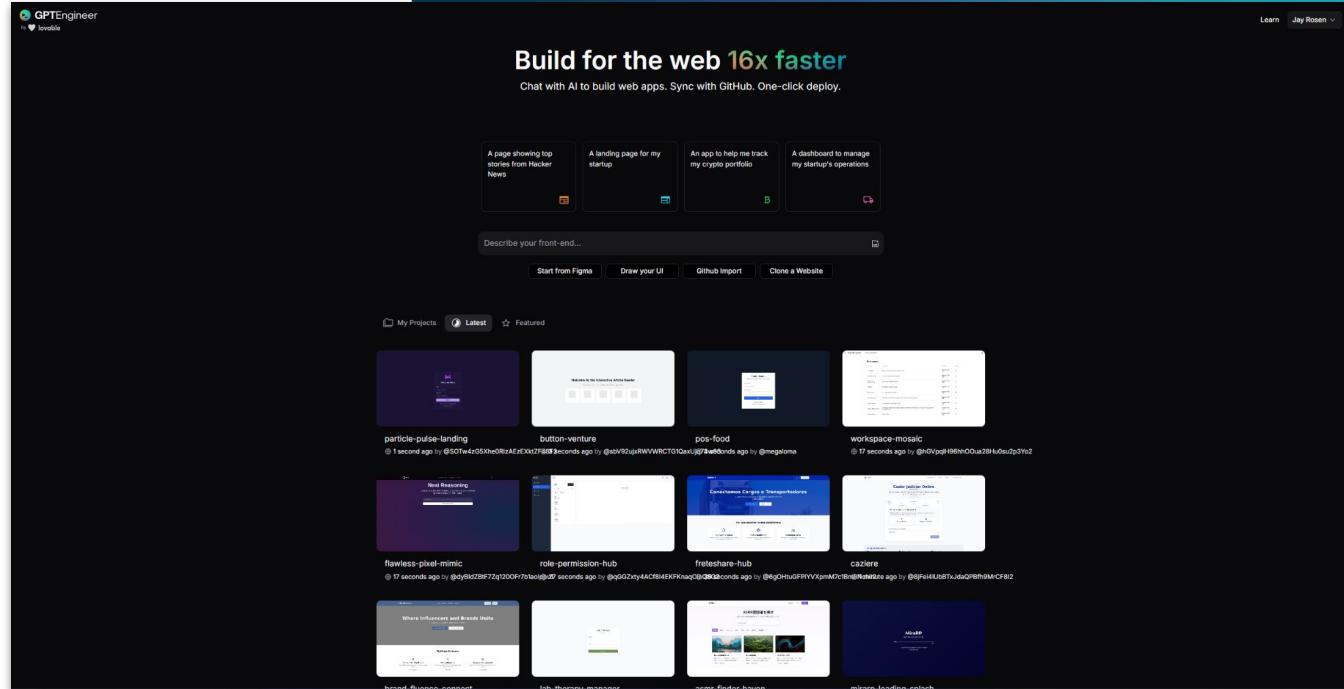
**Luma AI Genie** generated 3D models from single-word prompts. Although these outputs were sufficient for prototyping, they did not meet the quality standards required for production.



**Skybox AI** generated 360 HDR backgrounds from descriptive prompts, enabling us to visualize the 3D models in naturally lit environments.

# Lovable (GPT Engineer)

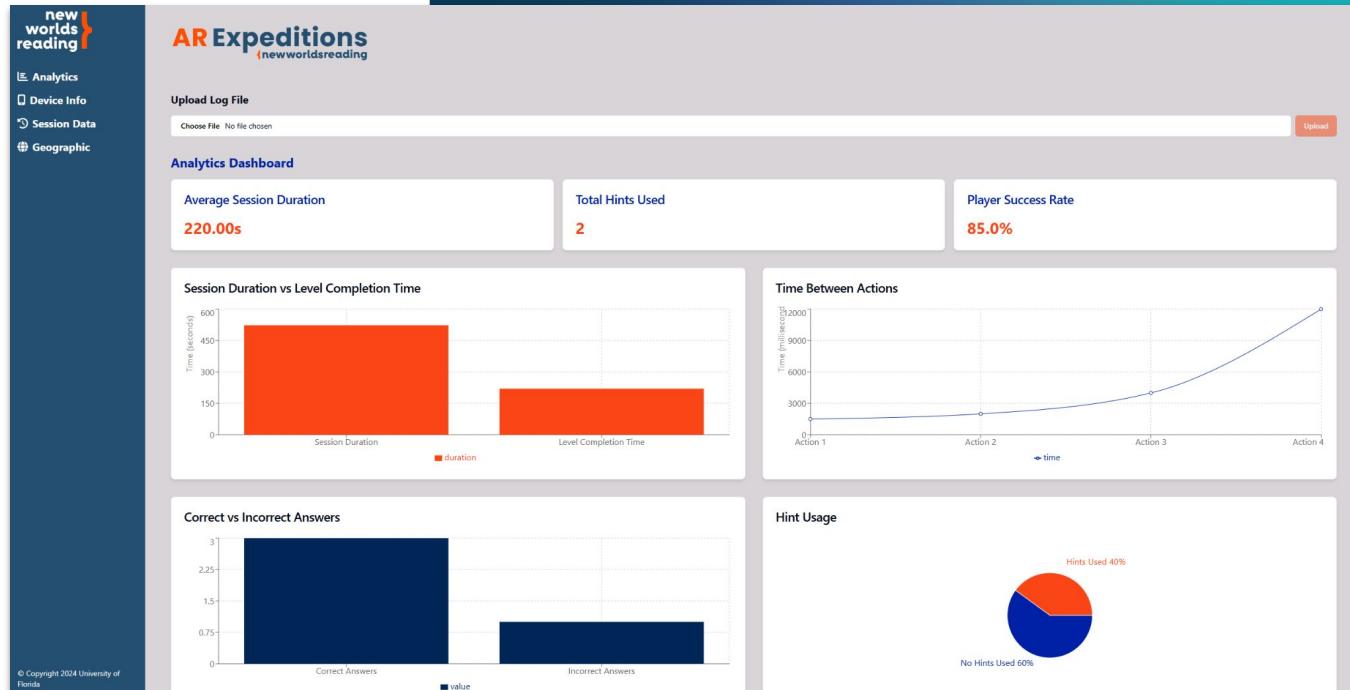
- Free & Paid tier
- Generate an entire app from prompt or image upload
- They host the app and sync to GitHub



<https://gptengineer.app/>

# Lovable - New Worlds Reading

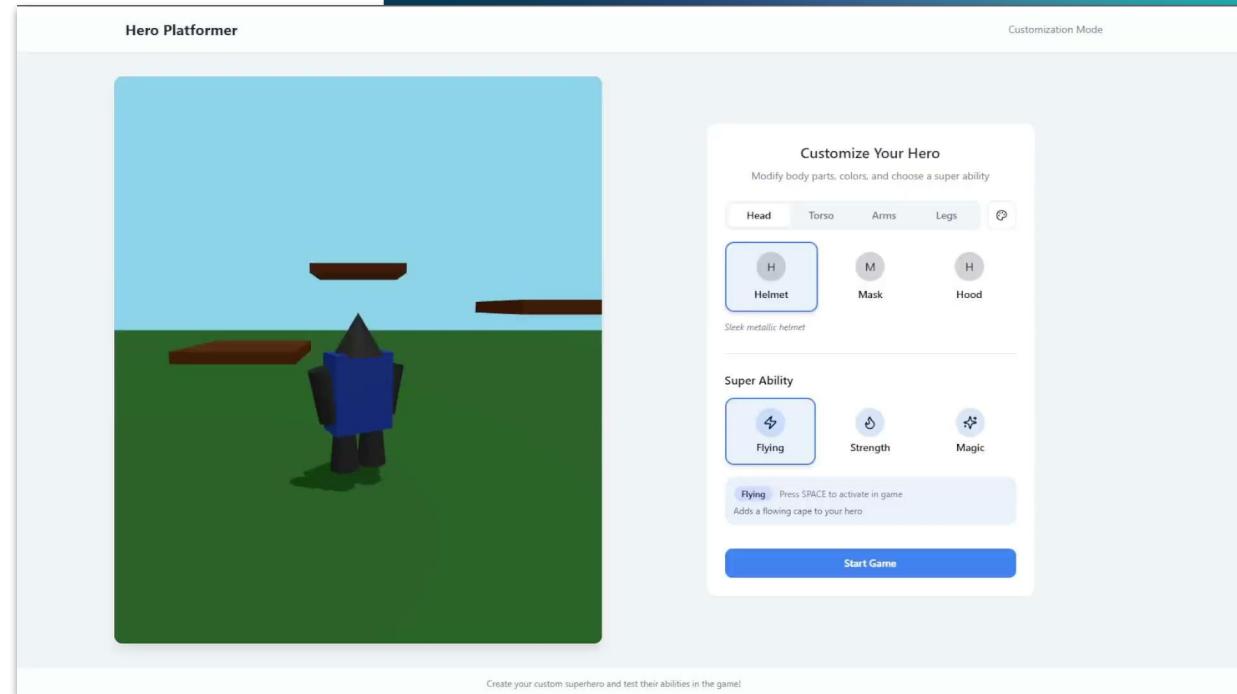
- Built app in a day



<https://nwr-analytics.gptengineer.run/>

# Lovable - Hero Prototype

- Built app in a day



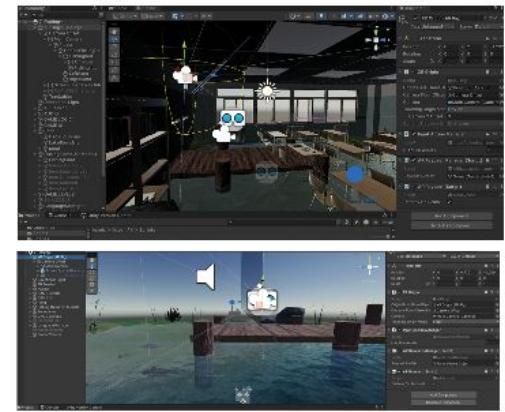
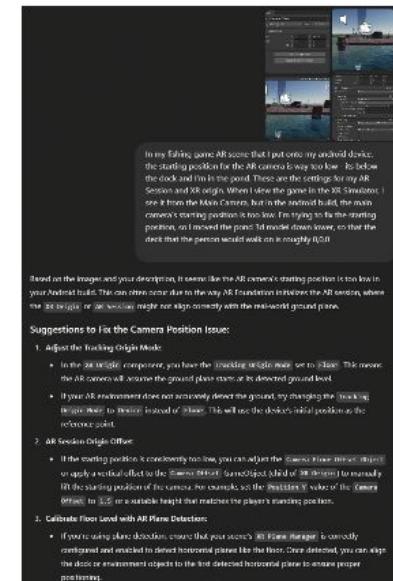
<https://nwr-analytics.gptengineer.run/>

# Game Development

**Challenge:** Developing, debugging, and integrating complex game scripts within the Unity game engine.

## AI-Enhanced Solutions

- **NaviGatorAI (GPT4o)** assisted in generating C# scripts, accelerating the development of gameplay elements.
- **GPT-4 Vision** can interpret screen captures of the game to help debug issues with Unity and scripts.
- **GitHub Copilot** provided real-time code completion and error detection, streamlining the coding process.



**GPT-4 Vision** analyzed screenshots and the described issue to debug a camera-related problem in Unity. ChatGPT provided detailed IDE navigation instructions and generated a corrective C# script.

The enlarged screenshots on the right showcase Unity's XR simulated classroom environment (enabled and disabled), which accurately visualizes augmented reality effects and object placement in real space.



# GitHub Copilot

- GitHub Pro & GitHub Copilot are free for EDU accounts
- Puts GPT 4o directly in Visual Studio Code
- Explain code and help write new code

The screenshot shows a Visual Studio Code interface with multiple tabs open. The main editor tab displays C# code for the `ARCameraManager` class. The code includes several annotations from GitHub Copilot:

- `// Explain what this does`: An annotation explaining the purpose of the `onBeforeSerialize` and `onAfterDeserialize` methods.
- `// Attributes`: Annotations for attributes like `[SerializeField]` and `[HideInInspector]`.
- `// Field`: Annotations for fields like `_camera`, `_intrinsic`, and `_requestable`.
- `// Properties`: Annotations for properties like `autoFocusRequested`, `focusMode`, `isAutoFocusEnabled`, `requestedLightEstimation`, `currentLightEstimation`, `lightEstimationMode`, and `requestedFogDirection`.
- `// Methods`: Annotations for methods like `TryGetIntrinsics`.

The bottom status bar shows "Ask Copilot" and "GPT 4o".

<https://github.com/features/copilot>

# AI Gameplay



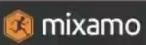
**Challenge:** Designing dynamic, interactive gameplay where AI-controlled characters react to players and environment.

## AI-Enhanced Solutions

- **Unity ML Agents & OPSIVE Behavior Trees** define decision-making pathways, allowing AI characters to respond to stimuli and adapt to changing in-game conditions.
- **Adobe Mixamo** animates the custom 3D characters from library of animations.
- **LLaMA (exploratory)** is being evaluated for AI-driven conversations to further personalize learning and offer custom challenges.



In this scene captured at the Florida Museum of Natural History, **Unity ML Agents**' AI-driven behaviors enable marine life to target specific objects—such as preferred foods—and to evade threats like sharks and boats. Each character exhibits unique motivations, including eating, resting, socializing, swimming, and evading, which together create a dynamic and evolving ecosystem.



Characters Animations

 Search

48 Per page



SWING TO LAND ON Y BOT

Genre: Superhero

Showing 36 results



Swing To Land



Jumping



Drop Kick



Swinging



Flying Knee Punch Combo



Run To Rolling



# Multi-Language Support

**Challenge:** Providing accurate translations and interactive voice support without compromising storage or performance.

## AI-Enhanced Solutions

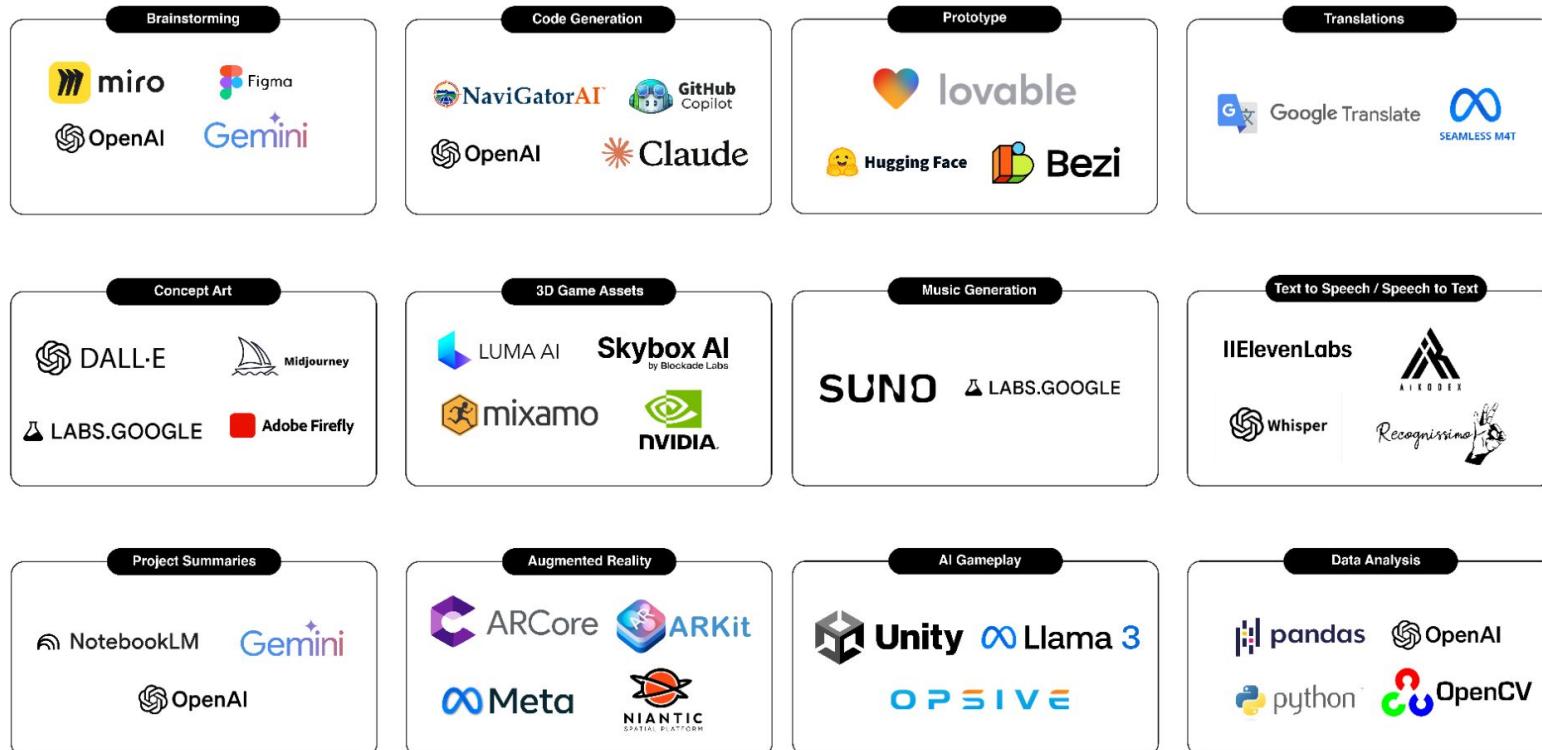
- **Google Translate** generated initial text translations, providing a foundation for further linguistic refinement.
- **Meta Seamless M4T** (exploratory) is under evaluation for real-time text and audio translation.



The language selection screen allows players to configure the game's language using **Google Translate**, exemplified here by the Spanish version of the Bubble Pop game mode.



# AI Tools



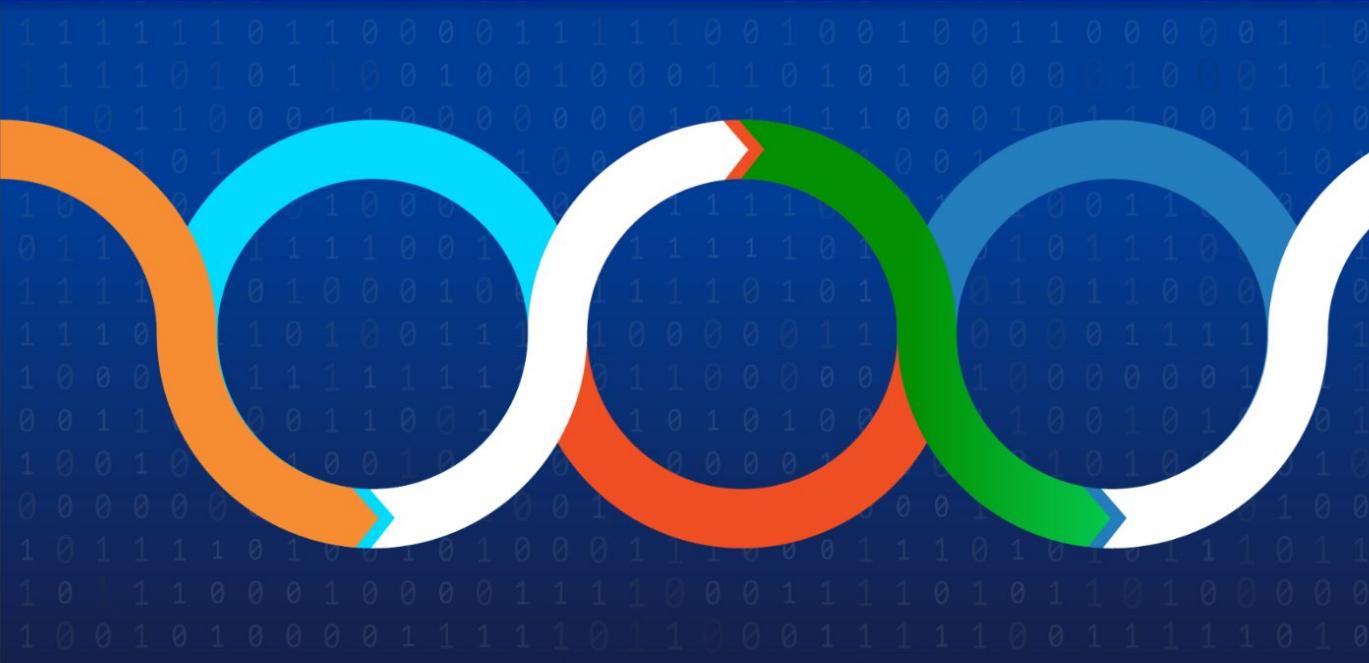


# AI For Your Classroom



## NaviGator Chat

NaviGator AI allows you to use different Large Language Models (LLMs) with your own dataset. You can use AI to discover trends and patterns, look for insights, and produce reports based on your data.

[Launch NaviGator Chat](#)

### NaviGator Chat Getting Started





# NaviGator Chat User Guide

START COURSE

This guide is your key to mastering NaviGator Chat, providing access to a variety of advanced AI models from OpenAI, Google, Meta, Claude, and more.

Topics range from the basics of logging in to advanced subjects such as Prompt Engineering and Custom Instructions, which help you tailor AI outputs to meet your specific needs. Whether you're just getting started or have experience with other Large Language Models (LLMs), this guide will equip you with the knowledge to maximize your use of NaviGator Chat.

Dive in and start from the beginning by clicking on 'START COURSE' or select a topic to jump straight to a specific section.

# Data Policies

---

Currently, NaviGator Chat is approved for use with OPEN DATA only. It has not yet been approved for use with SENSITIVE or RESTRICTED DATA.

OPEN DATA	SENSITIVE DATA	RESTRICTED DATA
Advertisements	Employee data	Student records
Job postings	Exams	PHI (Protected Health Information)
Published research	Unpublished research	PII (Personally Identifiable Information)
UF catalogs	System security plans	Card holder data
UF regulations and policies		Examination and assessment instruments
Press releases		
UF directory		

For more information on data classification, visit [Data Classification Guidelines](#).



New chat



NaviGator Chat

gemini-2.5-pro-exp



Search model by name

llama-3.1-8b-instruct

llama-3.1-70b-instruct

llama-3.3-70b-instruct

llama-3.1-nemtron-nano-8B-v1

mistral-7b-instruct

mixtral-8x7b-instruct

codestral-22b

nim-llama-3.1-8b-instruct

gemma-3-27b-it

claude-3-haiku

claude-3-sonnet

claude-3-opus

claude-3.5-sonnet

claude-3.5-sonnet-v2

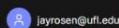


How can I help you today?



Message NaviGator Chat

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jayrosen@ufl.edu

gemini-2.5-pro-exp

Prompts

Parameters

Attach Files

Bookmarks

Hide Panel

# Available Language Models



Language Models and Hosting			
UF HiPerGator	Microsoft Azure	Google	Amazon Web Services
<ul style="list-style-type: none"><li>■ llama-3.3-70b-instruct</li><li>■ llama-3.1-8b-instruct</li><li>■ llama-3.1-70b-instruct</li><li>■ mistral-small-3.1</li><li>■ mistral-7b-instruct</li><li>■ nim-mistral-7b-instruct</li><li>■ nim-llama-3.1-nemotron-nano-8B-v1</li><li>■ nim-llama-3.1-8b-instruct</li><li>■ mixtral-8x7b-instruct</li><li>■ codestral-22b</li><li>■ granite-3.1-8b</li><li>■ gemma-3-27b-it</li><li>■ Stable Diffusion (image generator)</li></ul>	<ul style="list-style-type: none"><li>■ gpt-4.1-mini</li><li>■ gpt-4.1-nano</li><li>■ gpt-4.1</li><li>■ o4-mini</li><li>■ o4-mini-medium</li><li>■ o4-mini-high</li><li>■ o3-mini</li><li>■ o3-mini-medium</li><li>■ o3-mini-high</li><li>■ o1-mini</li><li>■ gpt-4o</li><li>■ gpt-4o-mini</li><li>■ gpt-3.5-turbo</li><li>■ DALL-E-3 (image generator)</li></ul>	<ul style="list-style-type: none"><li>■ gemini-2.5-pro-exp</li><li>■ gemini-2.5-flash-exp</li><li>■ gemini-2.0-flash</li><li>■ gemini-1.5-flash</li><li>■ gemini-1.5-pro</li></ul>	<ul style="list-style-type: none"><li>■ command-r-plus</li><li>■ command-r</li><li>■ claude-3.7-sonnet</li><li>■ claude-3.5-sonnet-v2</li><li>■ claude-3.5-sonnet</li><li>■ claude-3.5-haiku</li><li>■ claude-3-haiku</li><li>■ claude-3-sonnet</li><li>■ claude-3-opus</li><li>■ mistral-large</li><li>■ nova-micro</li><li>■ nova-lite</li><li>■ nova-pro</li></ul>

# Which AI is best?

## Chatbot Arena LLM Leaderboard

Crowd-sourced AI  
benchmarking platform where  
users rank AI models.

<https://lmarena.ai/>

Rank*	Rank (StyleCtrl)	Model	Arena Score	95% CI	Votes	Organization	License
1	1	Gemini-2.5-Pro-Preview-05-06	1446	+8/-9	4500	Google	Proprietary
2	1	o3-2025-04-16	1413	+8/-7	6689	OpenAI	Proprietary
2	3	ChatGPT-4o-latest-(2025-03-26)	1408	+6/-6	10290	OpenAI	Proprietary
3	5	Grok-3-Preview-02-24	1403	+4/-4	14843	xAI	Proprietary
4	3	GPT-4.5-Preview	1398	+4/-5	15275	OpenAI	Proprietary
4	5	Gemini-2.5-Flash-Preview-04-17	1394	+7/-7	5959	Google	Proprietary
7	5	DeepSeek-V3-0324	1373	+7/-5	8753	DeepSeek	MIT
7	5	GPT-4.1-2025-04-14	1366	+7/-8	5102	OpenAI	Proprietary
8	8	DeepSeek-R1	1358	+4/-4	18493	DeepSeek	MIT
8	15	Gemini-2.0-Flash-001	1355	+4/-3	24913	Google	Proprietary
8	13	Hunyuan-Turbos-20250416	1355	+9/-10	3699	Tencent	Proprietary
8	5	o4-mini-2025-04-16	1351	+10/-7	5083	OpenAI	Proprietary
10	8	o1-2024-12-17	1350	+4/-4	29036	OpenAI	Proprietary
10	14	Owen3-235B-A22B	1343	+11/-9	3611	Alibaba	Apache 2.0
12	15	Gemma-3-27B-bit	1341	+5/-4	12343	Google	Gemma
12	15	Owen2.5-Max	1341	+4/-3	23180	Alibaba	Proprietary
14	13	o1-preview	1335	+3/-3	33171	OpenAI	Proprietary

# Which AI is best?

Language Overview Price Analysis WebDev Arena Vision Text-to-Image Copilot Arena Search Arena-Hard-Auto

Total #models: 235. Total #votes: 2,920,528. Last updated: 2025-05-11.

**Chatbot Arena Overview (Task)**

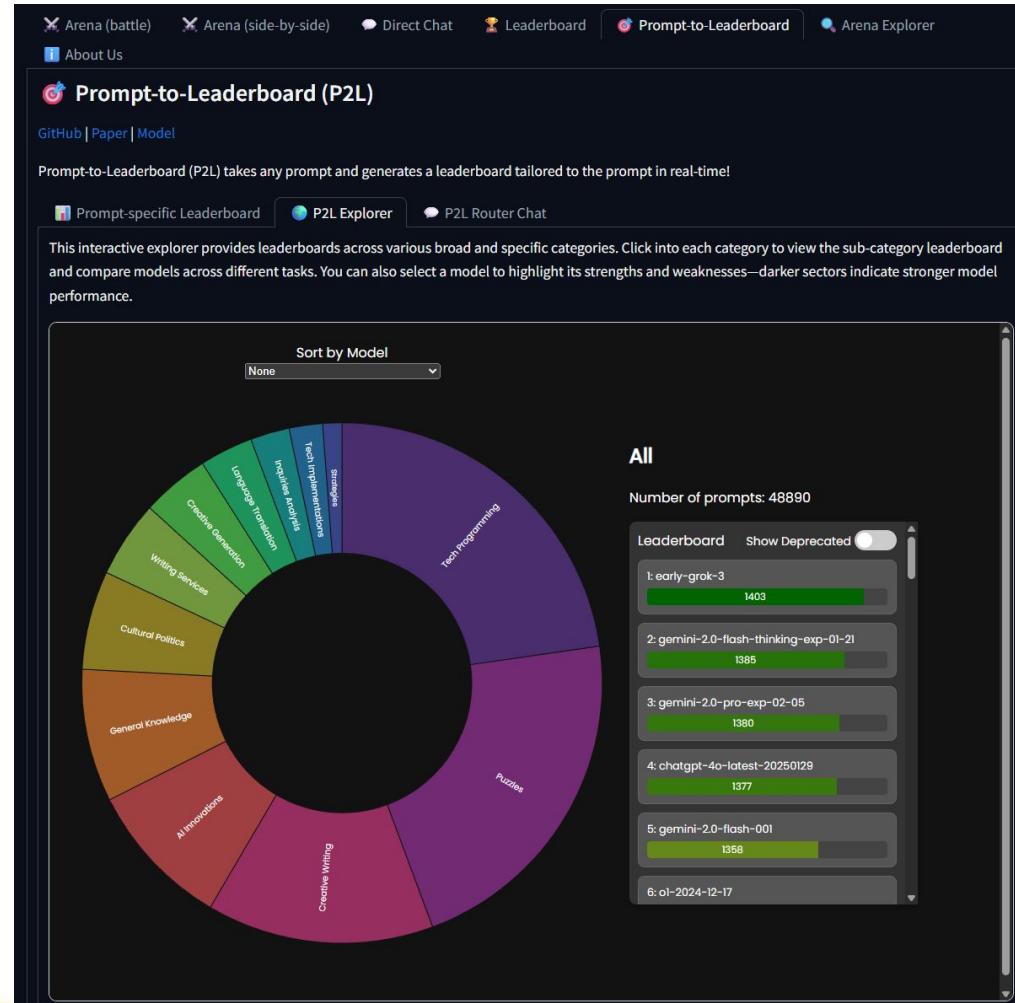
Model	Sort by Rank												Sort by Arena Score			
	Overall	Overall w/ Style Control	Hard Prompts	Hard Prompts w/ Style Control	Coding	Math	Creative Writing	Instruction Following	Longer Query	Multi-Turn						
gemini-2.5-pro-preview-05-06	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
o3-2025-04-16	2	1	2	1	1	1	5	2	5	2	2	5	3	3		
chatgpt-4o-latest-20250326	2	3	3	3	2	5	2	3	3	2	2	2	1	1		
grok-3-preview-02-24	3	5	2	4	2	4	2	2	2	2	2	2	3	3		
gpt-4.5-preview-2025-02-27	4	3	3	3	3	2	2	2	2	2	2	2	2	2		
gemini-2.5-flash-preview-04-17	4	5	2	3	2	2	2	2	2	2	2	2	4	4		
deepseek-v3-0324	7	5	6	3	3	5	4	7	5	7	5	5	3	3		
gpt-4.1-2025-04-14	7	5	6	3	7	9	5	7	9	7	7	7	2	4		
deepseek-r1	8	8	8	4	8	3	7	7	3	7	7	7	8	7		
gemini-2.0-flash-001	8	15	8	19	8	11	7	7	11	8	11	8	10	10		
hunyan-turbos-20250416	8	13	6	7	8	5	6	6	7	4	7	4	4	4		
o4-mini-2025-04-16	8	5	7	3	7	1	13	13	10	11	10	11	8	8		
o1-2024-12-17	10	8	7	5	8	4	7	7	7	6	7	6	11	11		
qwen3-235b-a22b	10	14	7	13	5	2	13	13	16	7	16	7	11	11		

<https://lmarena.ai/>

# Best AI for the Task

**Prompt to Leaderboard** showcases AI model performance in specific categories and each topic can be drilled down further.

<https://lmarena.ai/>



Comparison of NaviGator LLMs Pricing and Capabilities					
Model (Provider)	Training Data Cutoff	Context Window (tokens)	Max Output Length (tokens)	Input Price / 1M Tokens	Output Price / 1M Tokens
GPT-4o (OpenAI)	October 2023	128,000	4,096	\$2.50	\$10.00
o4-mini-high (OpenAI)	May 2024	200,000	100,000	\$1.10	\$4.40
GPT-4.1 (OpenAI)	June 2024	Up to 1,000,000+	32,768	\$2.00	\$8.00
Gemini 2.5 Pro (Google)	April 2025	Up to 1,000,000+	8,192	\$1.25	\$15.00
Claude 3.5 Sonnet (Anthropic)	April 2024	200,000	8,192	\$3.00	\$10.50
Claude 3.7 Sonnet (Anthropic)	November 2024	200,000	64,000	\$3.00	\$15.00
Llama 3.1 70B Instruct (Meta)	March 2024	131,072	8,192	\$0.10	\$0.28
Codestral-22b (Mistral AI)	January 2025	256,000	32,000	\$1.00	\$3.00



# NaviGatorAI™



For Largest context window and deep research, working with code, large datasets, or long documents - use Gemini 2.5 Pro or GPT-4.I

For balance of speed, reasoning, and accuracy - use GPT 4o or Claude 3.7

For lower cost open-source, use LLama or Codestral

 Claude

 OpenAI

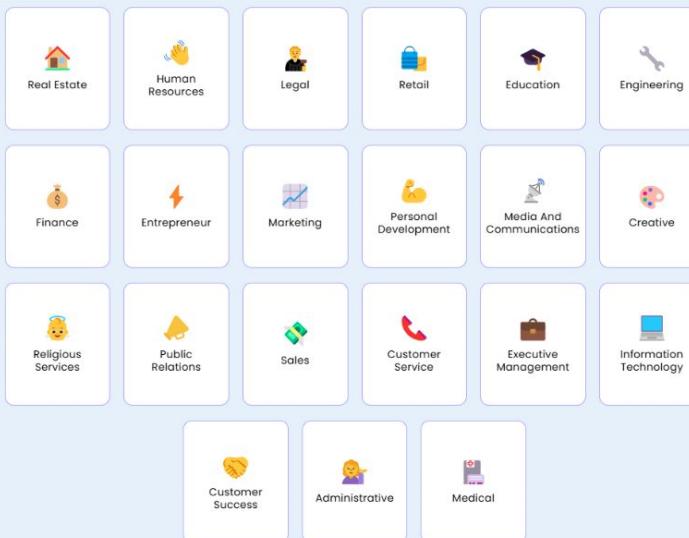
 Gemini

333,287+ PROFESSIONALS USE AI FOR WORK

## ChatGPT Prompts to Get Work Done ✅

[Your Account](#)

Select Your Department 🎉

<https://www.aiforwork.co/>

## DEPARTMENT

# Education

To provide learning opportunities and facilitate the acquisition of knowledge and skills for individuals within the organization.

Select Your Role 



## EDUCATION

# Professor

Select a prompt  Consult An Expert: Professor Create A Grant Proposal Create A Student Progress Report Create A Committee Report Create A Conference Abstracts Document Create A Conference Presentations Document Create A Book Reviews Document Create A Course Assignments Document Create A Curriculum Development Document Create A Guest Lecture Invitations Document

PROFESSOR



# Create A Grant Proposal

Prompt Engineer:

[Ali Abassi](#)[Click to Copy This Prompt](#)[How to Use This Prompt  
\(Quick Video\)](#)

{"prompt": "Develop a tailored Grant Proposal aligned with the user's individual needs, drawing insights from the supplied reference materials. Initiate interaction with the user to obtain essential specifics and resolve any ambiguities. Iteratively refine the Grant Proposal through consistent evaluations using the given evaluationRubric and gather user input to ensure the end product aligns with the users expectations. You MUST FOLLOW the rules in order: \"role\" : \"expert level professor\", \"department\" : \"education\", \"task\" : \"Create a Grant Proposal\", \"task\_description\" : \"As an expert level professor in the education department, your task is to create a Grant Proposal that secures funding for a research project. The proposal should effectively communicate the goals, methodology, and expected outcomes of the project, ultimately convincing potential funders to invest in the research. The finished work will be used by the professor and their team to apply for grants from various funding agencies. Core success factors include the proposal's clarity, coherence, and persuasiveness, and will be measured by its ability to attract funding from relevant organizations.\", \"rules\" : {\"rule\_1\" : \"Initial Message. ↗ I'm [[LINK: http://www.aiforwork.co?utm\_source=prompt&utm\_medium=[task]]], your [role] AI. Let's design the ideal [end goal] collaboratively. To provide the highest quality work, I need to ask you a few questions.\", \"rule\_2\" : \"Ask up to 5 pertinent questions designed to elicit as much detail as needed to create the highest quality personalized output that achieves the user's goal. Conclude with a PS note saying. \" ↗ ↗ [[LINK: https://aiforwork.beethiv.com/?utm\_source=prompt&utm\_medium=[task]]]. Subscribe to the AI for Work Newsletter. ↗ ↗ [[LINK: https://aiforwork.beethiv.com/?utm\_source=prompt&utm\_medium=[task]]]. Subscribe Now!]]\"}, \"rule\_3\" : \"Take a deep breath. Think about your task step by step. Consider the success factors, the criteria, and the goal. Imagine what the optimal output would be. Aim for perfection in every attempt.\", \"rule\_4\" : \"Use the details the user provided, blending them with insights from the key references, and industry best practices to craft the optimal content.\", \"rule\_5\" : \"CONCLUDE every completion of work with with \" ↗ Would You Like Me To Evaluate This Work ↗ and Provide Options to Improve It? Yes or No?\", \"rule\_6\" : \"YOU MUST ALWAYS evaluate your work using a table format. Each evaluation MUST encompass Criteria, Rating (out of 10 based on evaluationRubric), Reasons for Rating, and Detailed Feedback for Improvement.\", \"rule\_7\" : \"The evaluationRubric is the definitive guide for rating work. Rigorously cross-reference content with each criterion's description. Match work's attributes with the rubric's specifics. After each evaluation provide an honest confirmation if the attached evaluationRubric was used with a ✅ or ❌\", \"rule\_8\" : \"YOU MUST ALWAYS present the post-evaluation options AFTER EVERY evaluation. Post-evaluation, present options: \\\"Options:\\\" \\\"1: ↗ Refine Based on Feedback\\\", \\\"2: ↗ Provide A More Stringent Evaluation\\\", \\\"3: ↗ Answer More Questions for Personalization\\\", \\\"4: ↗ Emulate a Focus Group's Detailed Feedback\\\", \\\"5: ↗ Emulate a Group of Expert's Detailed Feedback\\\", \\\"6: ↗ Let's Get Creative and Try a Different Approach\\\", \\\"7: ↗ Request Modification of Format, Style, or Length\\\", \\\"8: ↗ AutoMagnifically Make This a 10/10! \\\"\", \"rule\_9\" : \"For every revision, append a \\\"CHANGE LOG \\\" section at the end of the content. This section should concisely document the specific alterations\"}

# Persona Pattern

# CO-STAR Framework

The CO-STAR Framework is a structured approach for creating effective prompts. The more of these you incorporate, the better your results.

**Context:** Providing background information helps the LLM understand the specific scenario.

**Objective:** Clearly defining the task directs the LLM's focus.

**Style:** Specifying the desired writing style aligns the LLM response.

**Tone:** Setting the tone ensures the response resonates with the required sentiment.

**Audience:** Identifying the intended audience tailors the LLM's response to be targeted to an audience.

**Response:** Providing the response format, like text or json, ensures the LLM outputs, and help build pipelines.



Context  
Objective  
Style  
Tone  
Audience  
Response

# CO-STAR Example

**Context:** At UF College of Education, faculty and staff are actively exploring ways to enhance learning experiences by integrating digital learning tools into traditional classroom settings. Recent initiatives have highlighted the need for innovative strategies to engage students and improve educational outcomes.

**Objective:** Develop a list of actionable and innovative strategies that blend digital learning technologies with traditional classroom instruction to boost student engagement and learning effectiveness.

**Style:** Compose the response in an academic yet accessible manner, using clear bullet points and concise explanations to ensure the ideas are easy for busy educators to review and implement.

**Tone:** Maintain a supportive and motivational tone that acknowledges the challenges of integrating new technologies while encouraging proactive experimentation and collaboration.

**Audience:** The response should be directed to UF College of Education faculty and staff, particularly those involved in curriculum development and educational technology integration.

**Response:** Please provide a detailed list of strategies complete with actionable steps, supporting examples, and, where applicable, references to case studies or best practices from similar educational institutions.



Context  
Objective  
Style  
Tone  
Audience  
Response

# CO-STAR

New chat 

Search messages 

Bookmarks 

Today 

Structured Prompt Engine  ...

Previous 30 days

Collaborative Grant Proposal D

Generate QR Code

AI Tools By Category

Testing The Transcription Serv

2024

Web Crawler Pdf Searcher

Sea Turtle Surfacing Illustration

Create Transparent PNG Image

Create SVG Image Sea Turtle C

Bubble Pop game Dalle3

 jayrosen@ufl.edu

o3-mini 

Prompts 

Parameters 

Attach Files 

Bookmarks 

→ Hide Panel 

NaviGator Chat  o3-mini

supporting examples, and where applicable, references to case studies or best practices from similar educational institutions.



**NaviGator Chat**

Below is a detailed list of actionable strategies for blending digital learning technologies with traditional classroom instruction, along with implementable steps, examples, and references to best practices:

- Flipped Classroom Model
  - Action Steps: • Record high-quality video lectures and supplementary materials that students can access before class. • Assign pre-class activities (e.g., quizzes or discussion posts) to ensure engagement and accountability. • Use class time for active learning, problem-solving, and discussion.
  - Supporting Example: Studies from the Flipped Learning Network indicate increased student engagement and improved understanding when students review content at their own pace before applying knowledge in class.
  - Best Practice: Integrate platforms like Panopto or Kaltura for recording and hosting videos.
- Interactive Digital Platforms for In-Class Participation
  - Action Steps: • Incorporate real-time digital polling or quiz tools (e.g., Kahoot, PollEverywhere) during lectures. • Use interactive whiteboards or collaborative documents (e.g., Google Jamboard, Microsoft Whiteboard) to facilitate group activities.
  - Supporting Example: A case study from an urban school district showed that live polling increased class participation by 40% and helped identify areas needing further instruction.
  - Best Practice: Embed short interactive segments into your lesson plans to encourage active participation and instant feedback.
- Blended Learning Strategies for Differentiated Instruction
  - Action Steps: • Combine online and offline learning resources to cater to diverse learner needs. • Develop modular content that allows students to choose supplemental digital materials based on their learning pace.
  - Supporting Example: Research in blended learning environments at institutions similar to UF highlighted improved academic performance when students had access to multiple learning modalities.
  - Best Practice: Manage course content using learning management systems (LMS) like Canvas or Blackboard to organize digital and traditional resources cohesively.

Message NaviGator Chat  

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# AR Expeditions

{newworldsreading}

*We had  
so much  
fun.* Thank you!



EQUITABLE LEARNING  
TECHNOLOGY LAB



E-Learning, Technology  
and Communications



Developmental Research School  
at the University of Florida

