

# AI-POWERED GAMIFICATION FOR THE WEB

COURTNEY YATTEAU





# AGENDA

- Gamification Overview
- AI + Gamification
- Demos
- Key Takeaways







**RU**  
RADFORD  
UNIVERSITY



# Courtney Yatteau

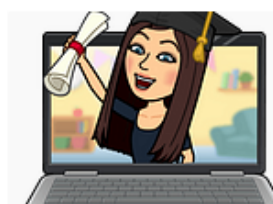
Developer Advocate, Esri



## Reflection: My Unconventional Start into Computer Science

As told by a math major.

Sep 19, 2022 52 1



Courtney Yatteau  
May 12 '23

## AI is a Teacher's New Best Friend 🍎

#ai #teacher #beginners

2 reactions 1 comments

7 min read





# WHAT IS GAMIFICATION?





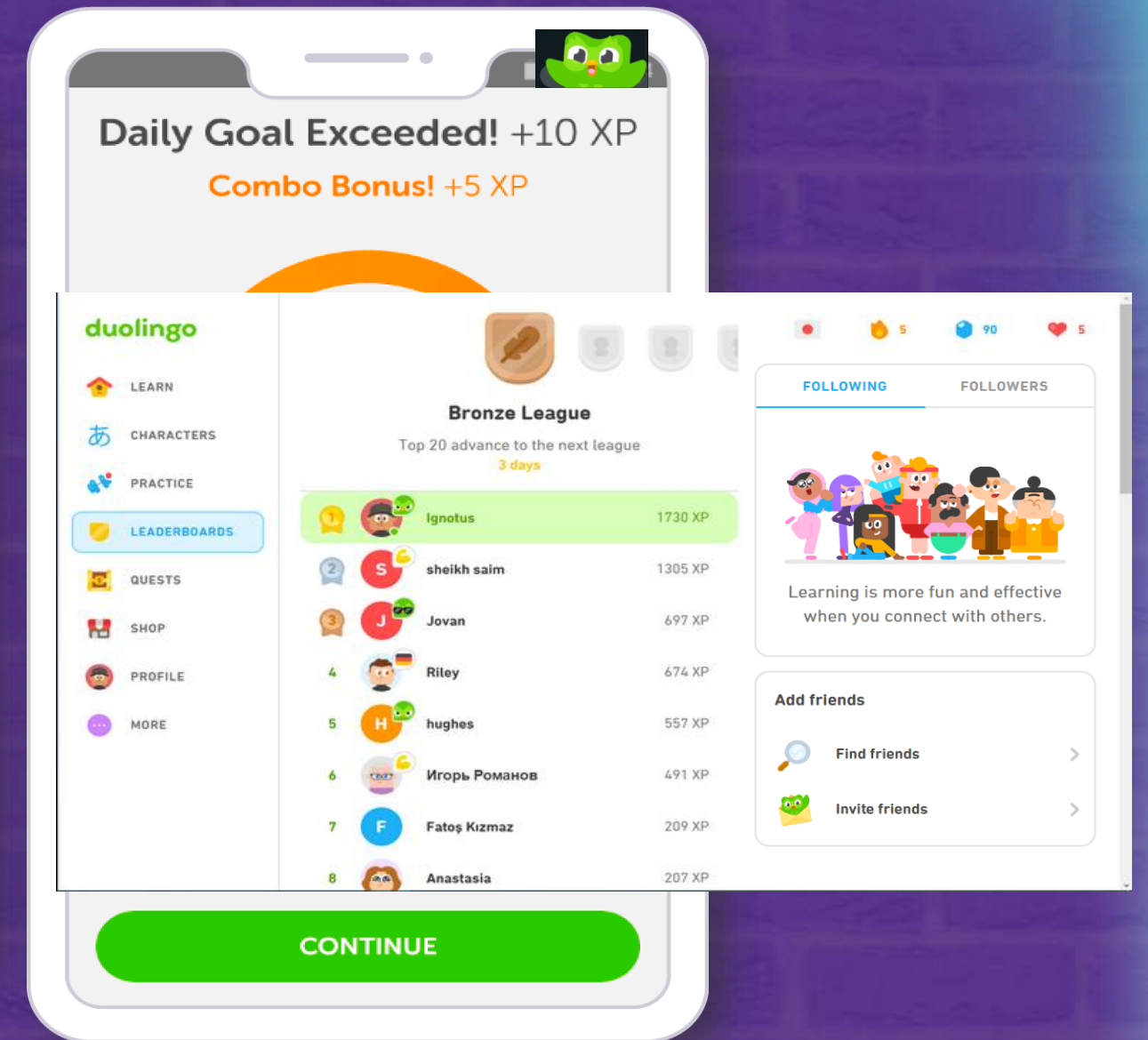
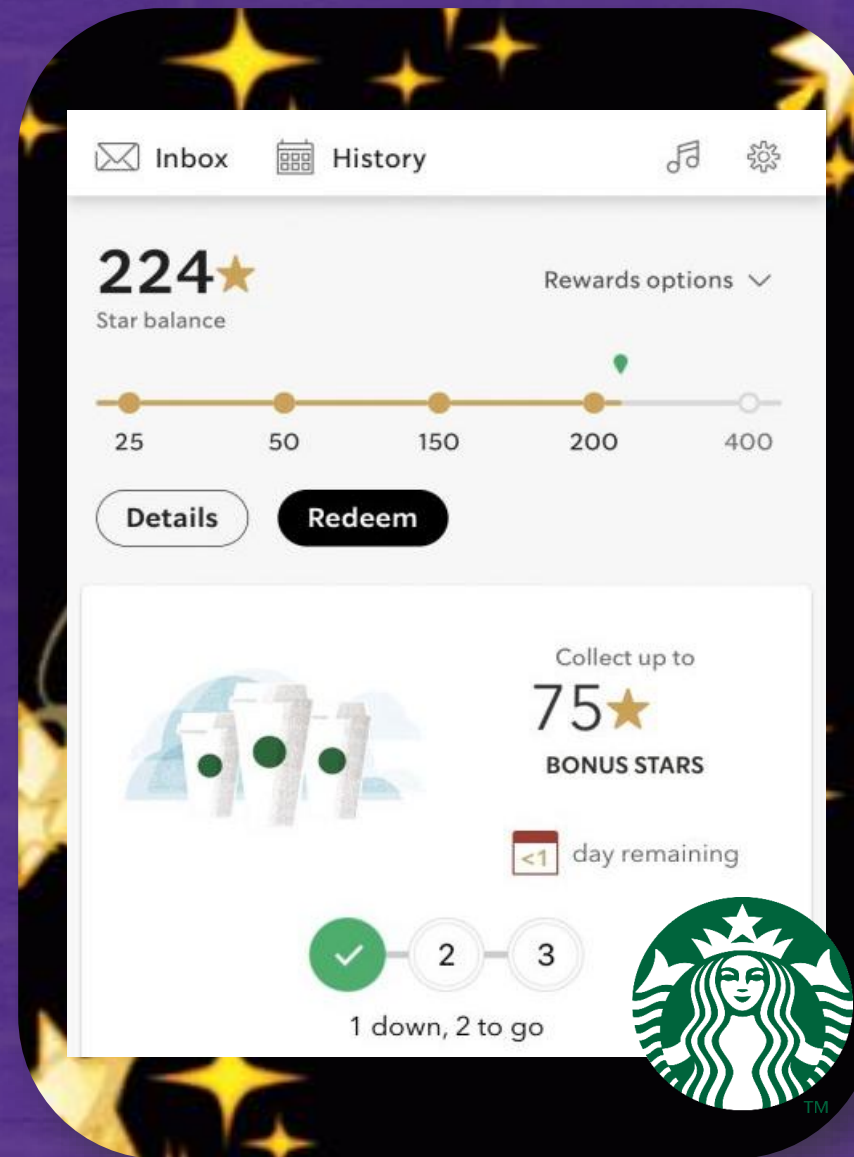
# GAMIFICATION PRINCIPLES

**PROGRESS &  
REWARDS**

**CHALLENGES &  
GOALS**

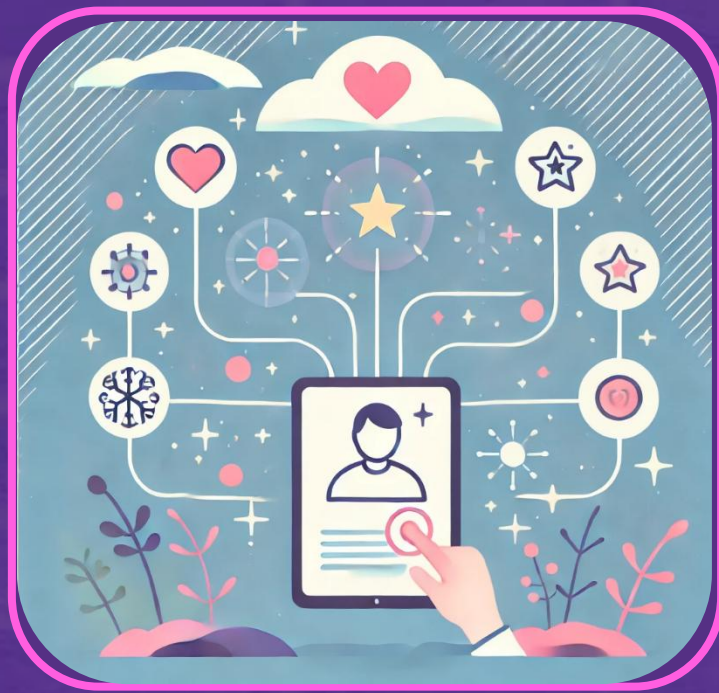
**FEEDBACK &  
REINFORCEMENT**

**SOCIAL  
INTERACTION &  
COMPETITION**





# THE ROLE OF AI IN GAMIFICATION



## PERSONALIZATION

Tailored experiences



## ADAPTION

Dynamic analysis

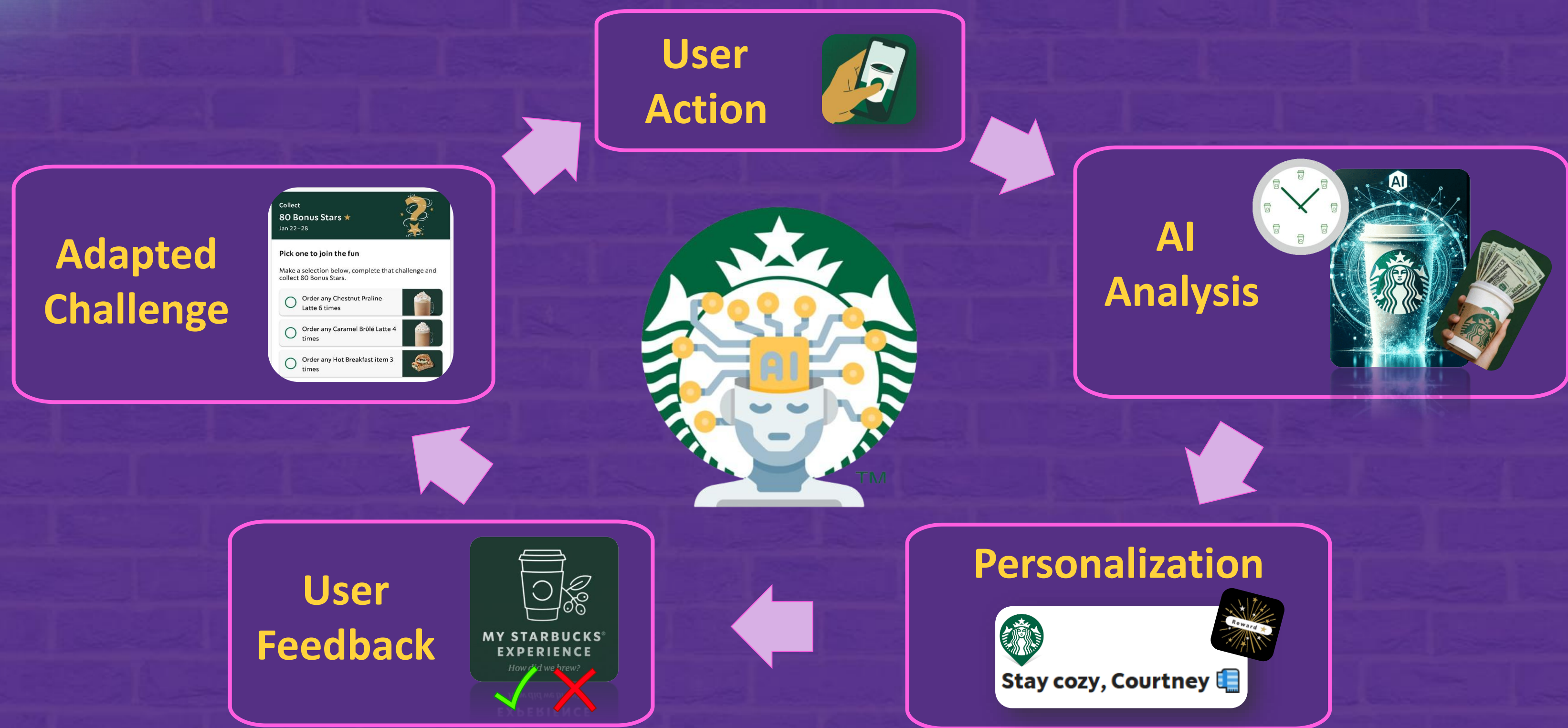






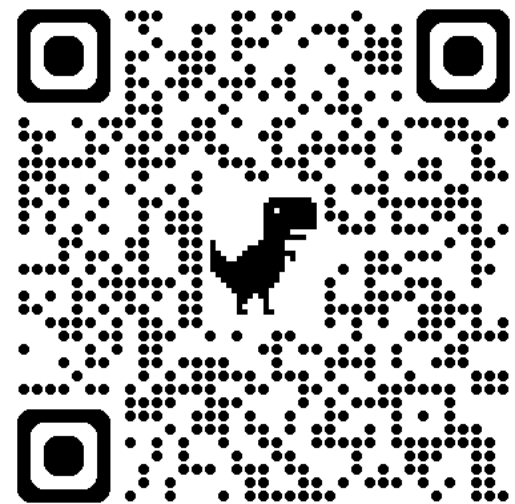
User  
Action

# AI-DRIVEN GAMIFICATION FLOW





# AI-GAMIFIED WEB DEMOS

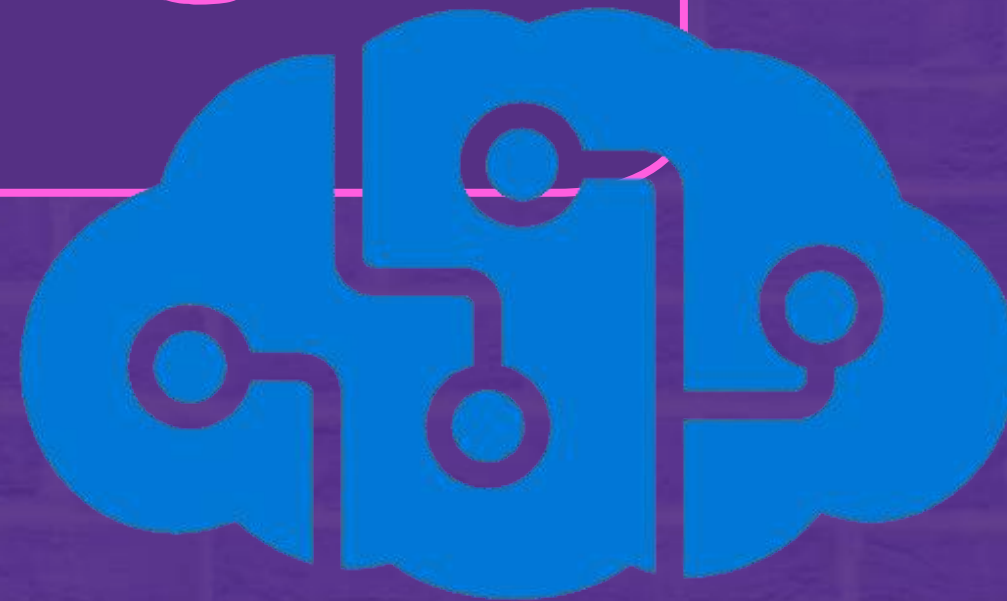


[github.com/cyatteau/devup-2025-ai-gamification](https://github.com/cyatteau/devup-2025-ai-gamification)





# AZURE AI DEMO



How was your experience?

Share your thoughts...

Submit Feedback

*Sentiment*

*Translation*





# AZURE AI DEMO -TAKEAWAYS

## AI

### Sentiment analysis

- Single/multi sentence
- Nuances
- Free tier – 5k transactions per 30 days
- Free tier – 2M characters per month

## Gamification

### Progress Bar

- Complete reviews

### Rewards

- 'badge' & confetti

### Goals

- # of reviews

### Reinforcement

- Encouragement

## Extras

### ArcGIS Suggest

- Can be refined
- Free to use

### ArcGIS Geocoding

- Address → Coords (Used here for country code)
- Free tier – 20k geocodes/month



# OPENAI DEMO



## Discover Interesting Facts about a Location!

Use Your Current Location

Submit

Enter a Location

Enter a city, place, etc.

Submit

Select a location and choose a fact type to get started!

*Text & Image  
Generation*





# OPENAI API DEMO - TAKEAWAYS

## AI

Text Generation (gpt-4o)

- Create stories, facts, etc.
- Input: \$5/1M tokens, Output: \$15/M tokens

Image Generation (DALL-E)

- Create images
- Charges based on tiles & resolution

## Gamification

Interactive Fact Finder

- Choice-based

Rewards

- suggestion & image

Goals

- # of facts

Reinforcement

- Encouragement

## Extras

ArcGIS Reverse Geocode

- Coords → Address
- Free tier - 100/month (then \$0.13/month per 1k requests)



# TENSORFLOW.JS DEMO



## AI-Powered Quiz

Start

Current Difficulty: *Easy*

Predictions: [N/A]

Training complete! Model is ready.

Epoch (Training Round): 300 | Loss (Error Rate): 0.0761

*Dynamic Difficulty*





# TENSORFLOW.JS DEMO - TAKEAWAYS

## AI

Dynamic Difficulty

- Analyzes in real-time

Client-Side Execution

- Entirely in browser

## Gamification

Progressive Mastery

- Difficulty levels

Feedback & Reinforcement

- Correct/Incorrect

## Extras

Offline Support

- Works without internet



# HUGGING FACE DEMO



*Sentence similarity  
for matching*

### AI Game Pairing

*Discover your perfect gaming match!*

Describe your play style (e.g., I enjoy strategic games)

Find Match

Describe your style above and click "Find Match" to see results.

How AI Calculates Matches

Show Details





# HUGGING FACE DEMO - TAKEAWAYS

## AI

Sentence Similarity

- Matches words, phrasing, etc.

Pretrained Models

- Effectively uses existing language models

## Gamification

Social Competition

- Matching with peers

Rewards

- Badges

Feedback

- Stars (user-driven)

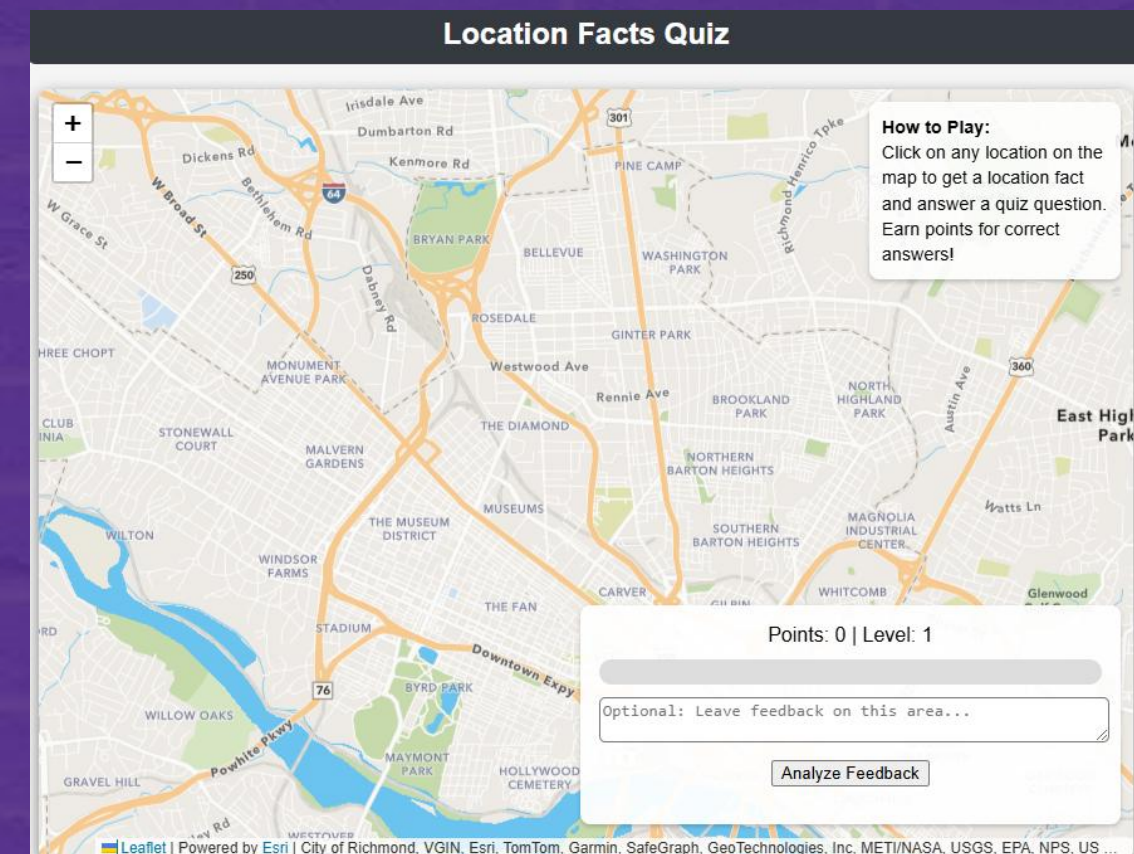
## Extras

ArcGIS Maps SDK for JS

- Free tier with Location Platform
- Maps location of players



# COMBINED DEMO



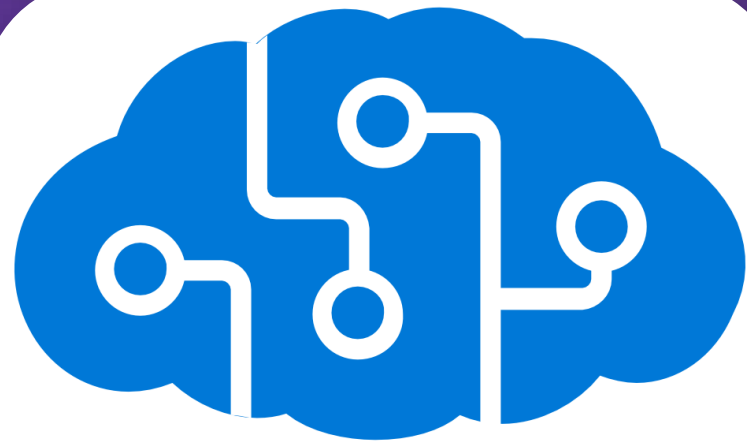
*Gamified AI Map*





# KEY TAKEAWAYS

## *AI TOOLS FOR GAMIFICATION*



Microsoft Azure  
Cognitive Services



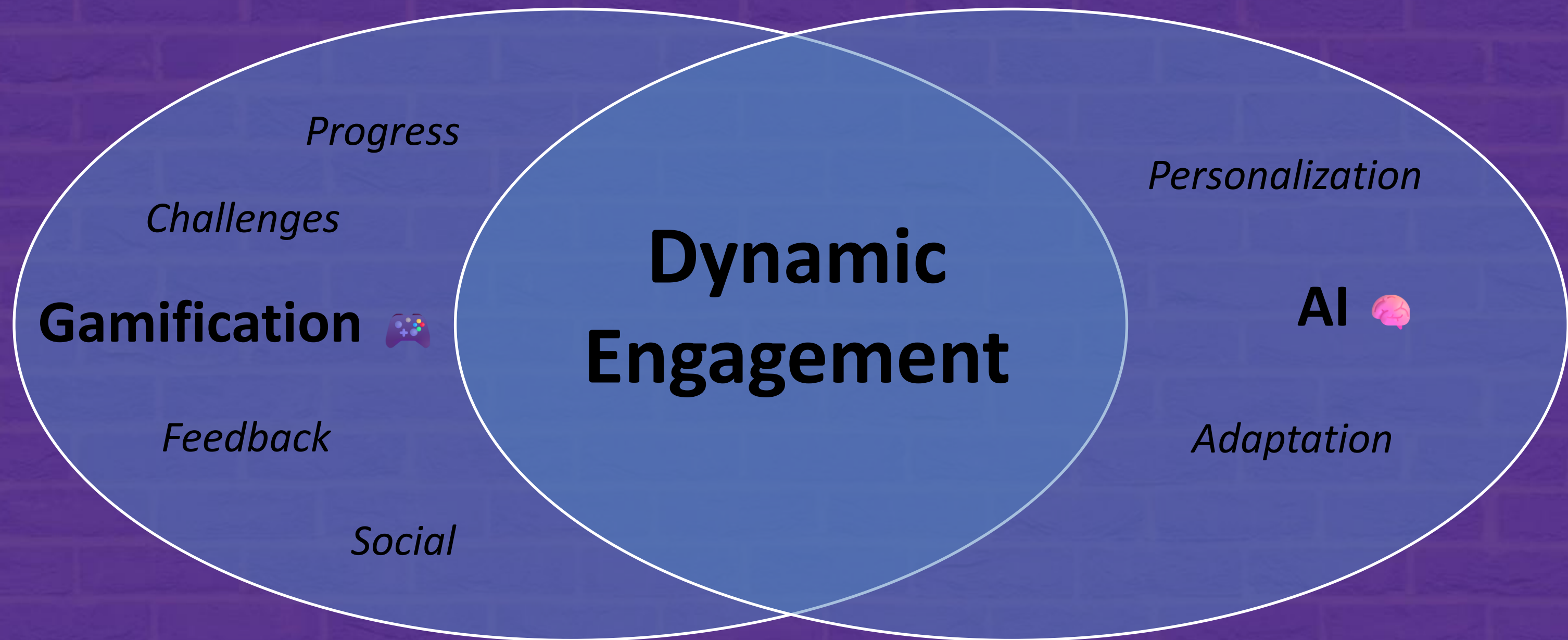
**Hugging Face**





# KEY TAKEAWAYS

## ***GAMIFICATION AND AI INTEGRATION***





# RESOURCES

- [Azure AI Platform](#)
- [OpenAI documentation](#)
- [TensorFlow.js documentation](#)
- [Hugging Face's sentence similarity model](#)
- [ArcGIS mapping/location documentation](#)
- [ArcGIS Location Platform](#)



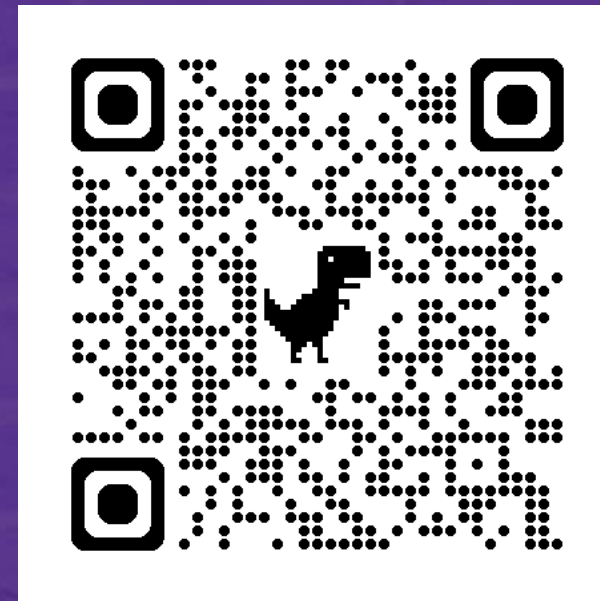
# THANK YOU, dev up!

**Courtney Yatteau**

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