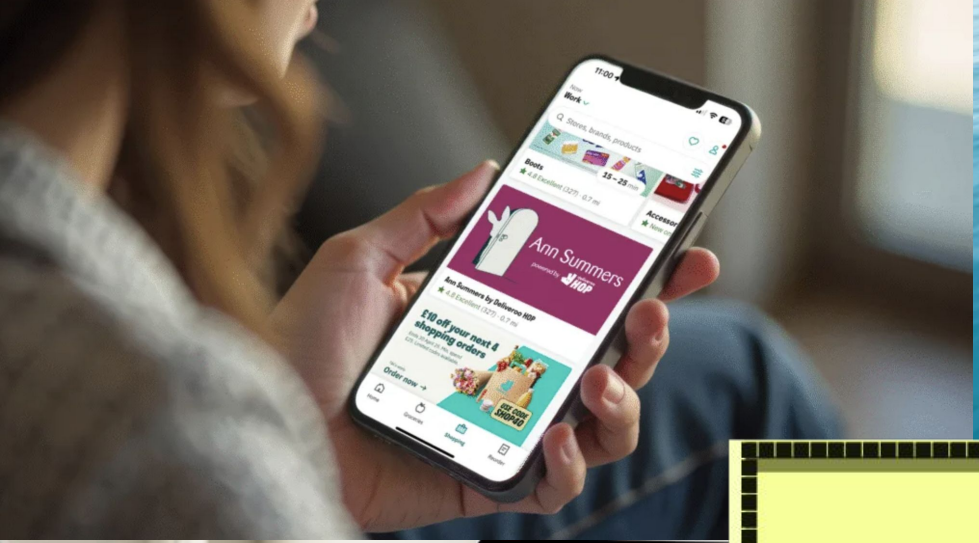
Everything You Need To Know About Game Engines
Dan Webb


Ann Summers
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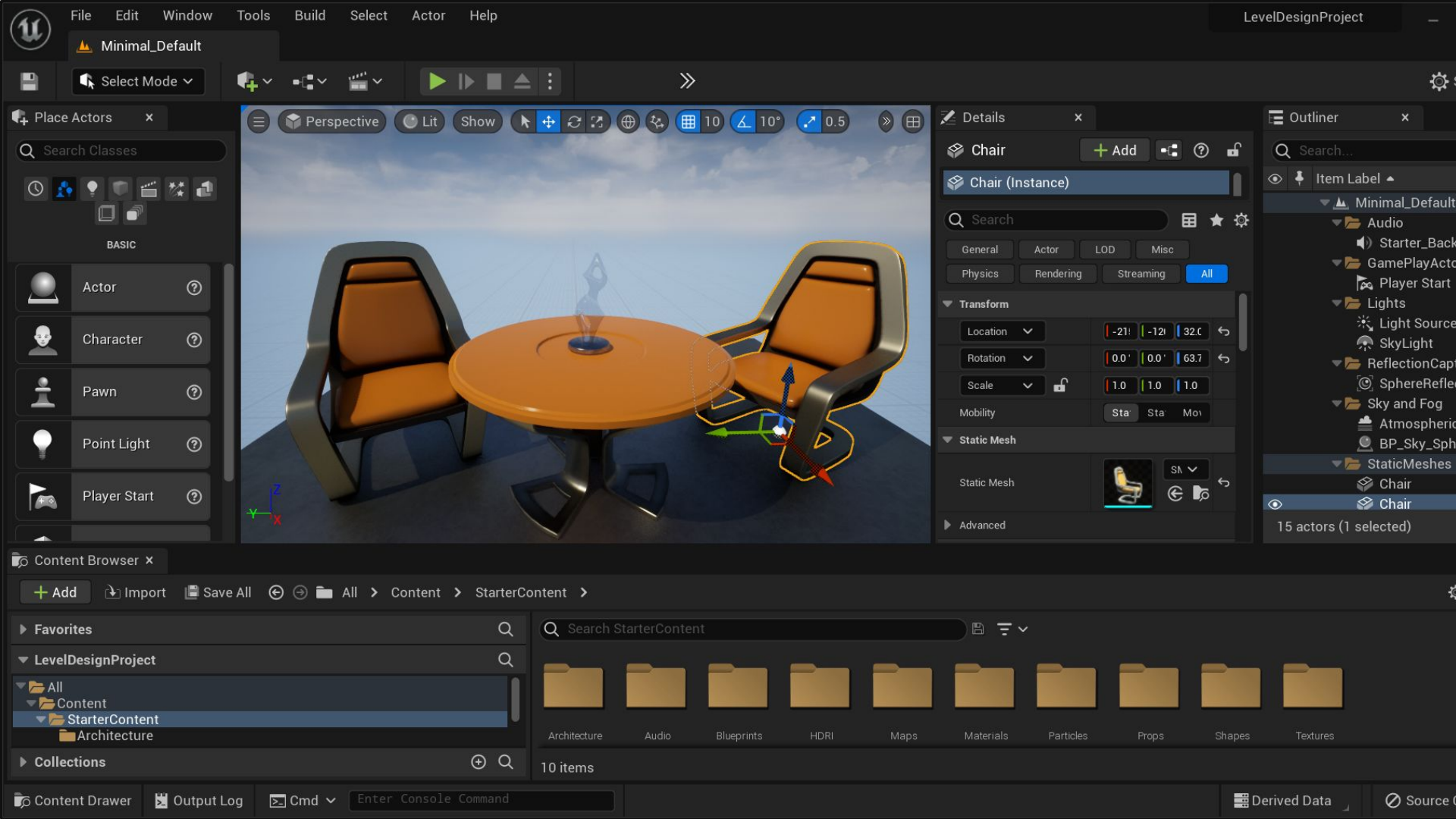
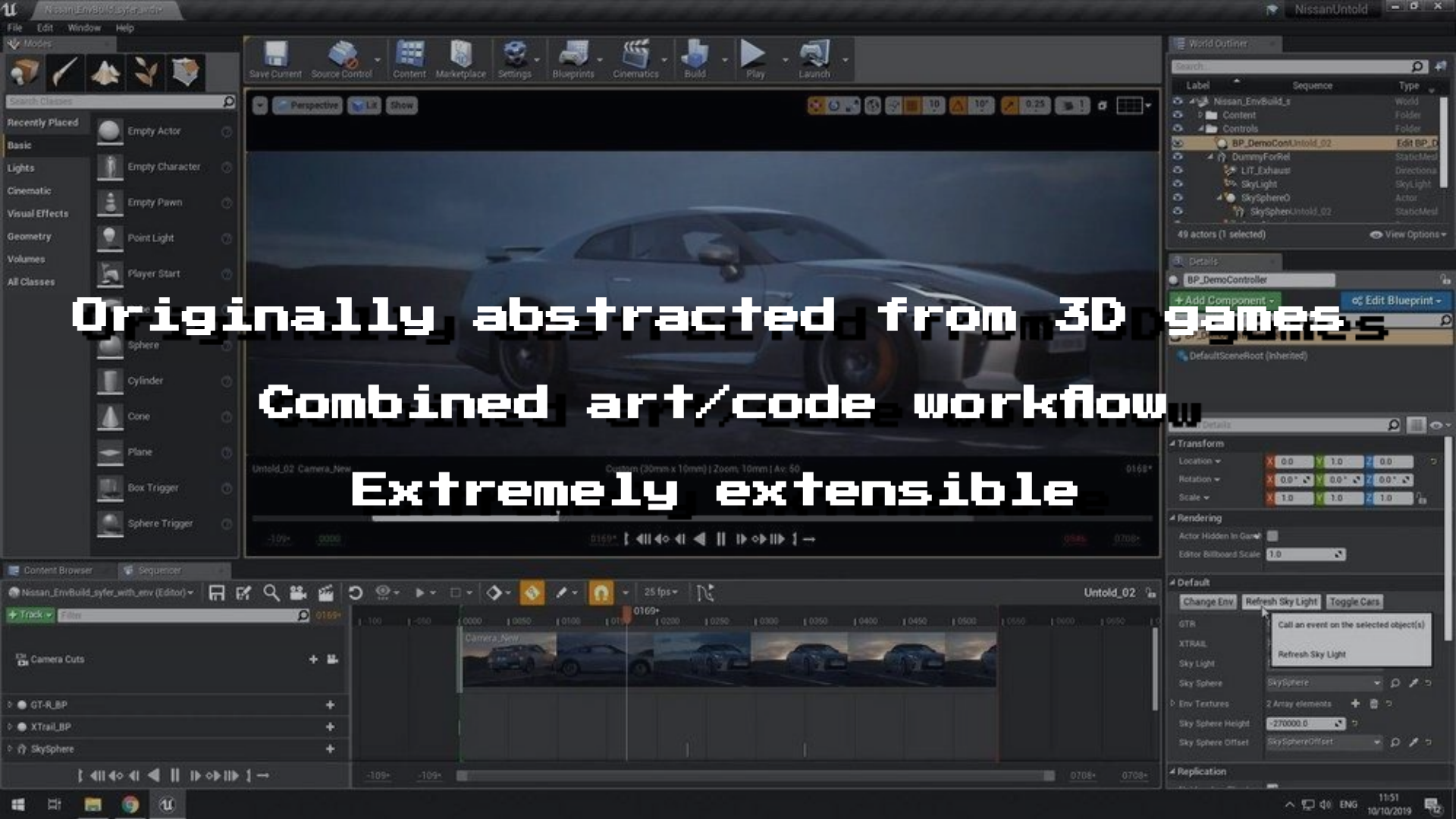
Cadoxton Primary
You might like
What's happening

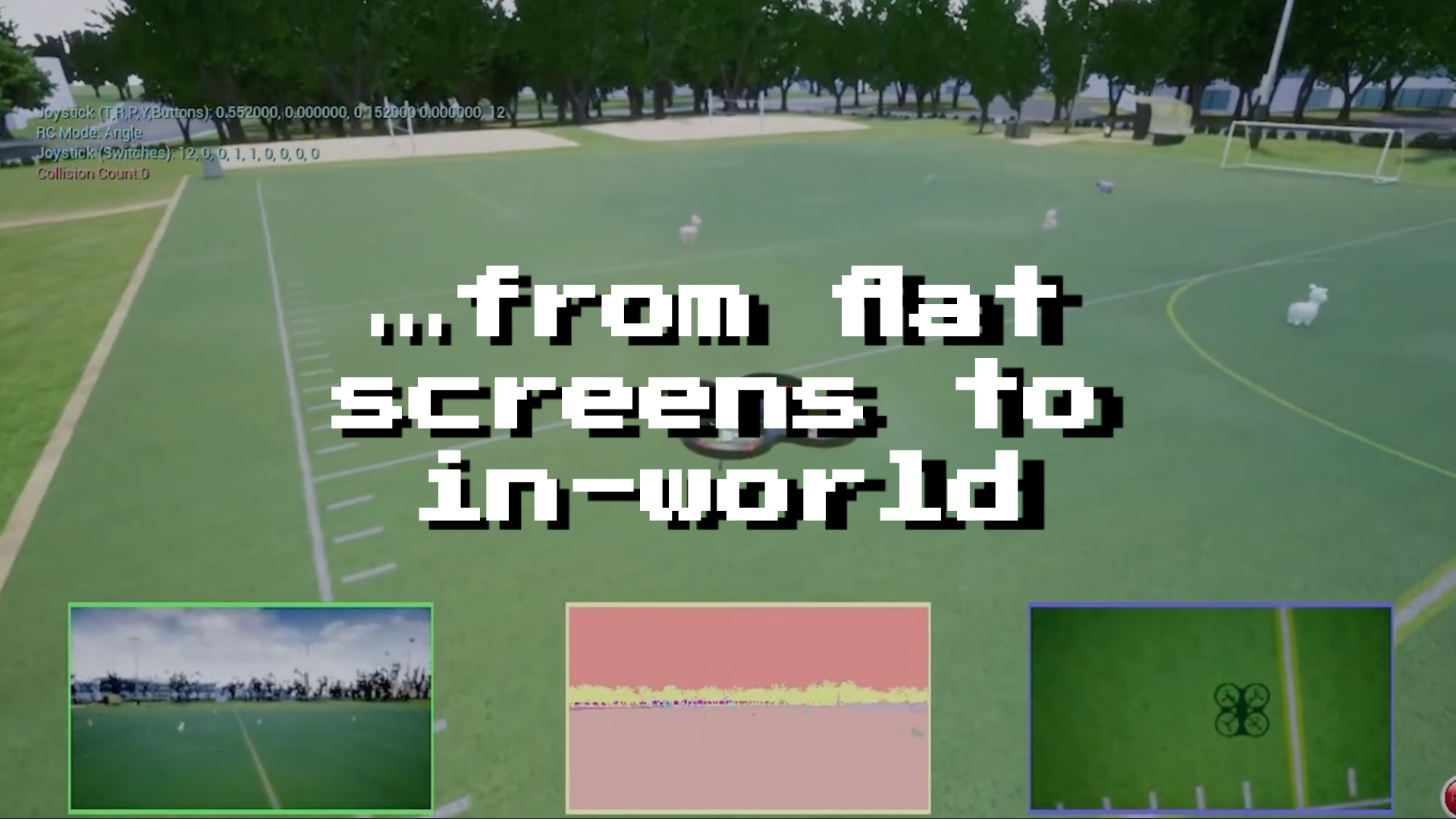
What are game engines?


File
Edit
Window
Tools
Build
Select
Actor
Help
LevelDesignProject
Minimal_Default
Select Mode
Place Actors
Search Classes
BASIC
Actor
Character
Pawn
Point Light
Player Start
Perspective
Lit
Show
10
10°
0.5
Details
Chair
Add
Chair (Instance)
Search
General
Actor
LOD
Misc
Physics
Rendering
Streaming
All
Transform
Location
Rotation
Scale
Mobility
Static Mesh
Advanced
Outliner
Search...
Item Label
Minimal_Default
Audio
Starter_Back
GamePlayActo
Player Start
Lights
Light Source
SkyLight
ReflectionCapt
SphereRefle
Sky and Fog
Atmospheric
BP_Sky_Sph
StaticMeshes
Chair
Chair
15 actors (1 selected)
Content Browser
Add
Import
Save All
All
Content
StarterContent
Favorites
LevelDesignProject
All
Content
StarterContent
Architecture
Collections
Search StarterContent
Architecture
Audio
Blueprints
HDRI
Maps
Materials
Particles
Props
Shapes
Textures
10 items
Content Drawer
Output Log
Cmd
Enter Console Command
Derived Data


Originally abstracted from 3D games
Combined art/code workflow
Extremely extensible

But game
engines aren't
just for games...

Modern computing is evolving...


Joystick (T,R,P,Y,Buttons): 0.552000, 0.000000, 0.152000 0.000000, 12
RC Mode: Angle
Joystick (Switches): 12, 0, 0, 1, 1, 0, 0, 0, 0
Collision Count:0
...from flat screens to in-world

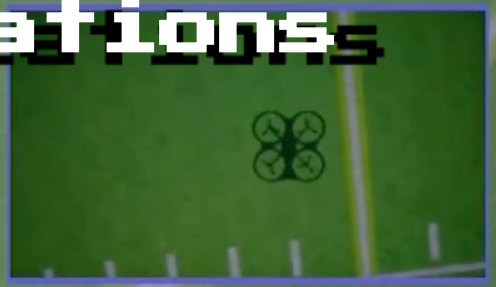
Joystick (T,R,P,Y,Buttons): 0.552000, 0.000000, 0.152000 0.000000, 12
RC Mode: Angle
Joystick (Switches): 12, 0, 0, 1, 1, 0, 0, 0, 0
Collision Count:0

3D visualisation and lighting

Spatial audio

Physics

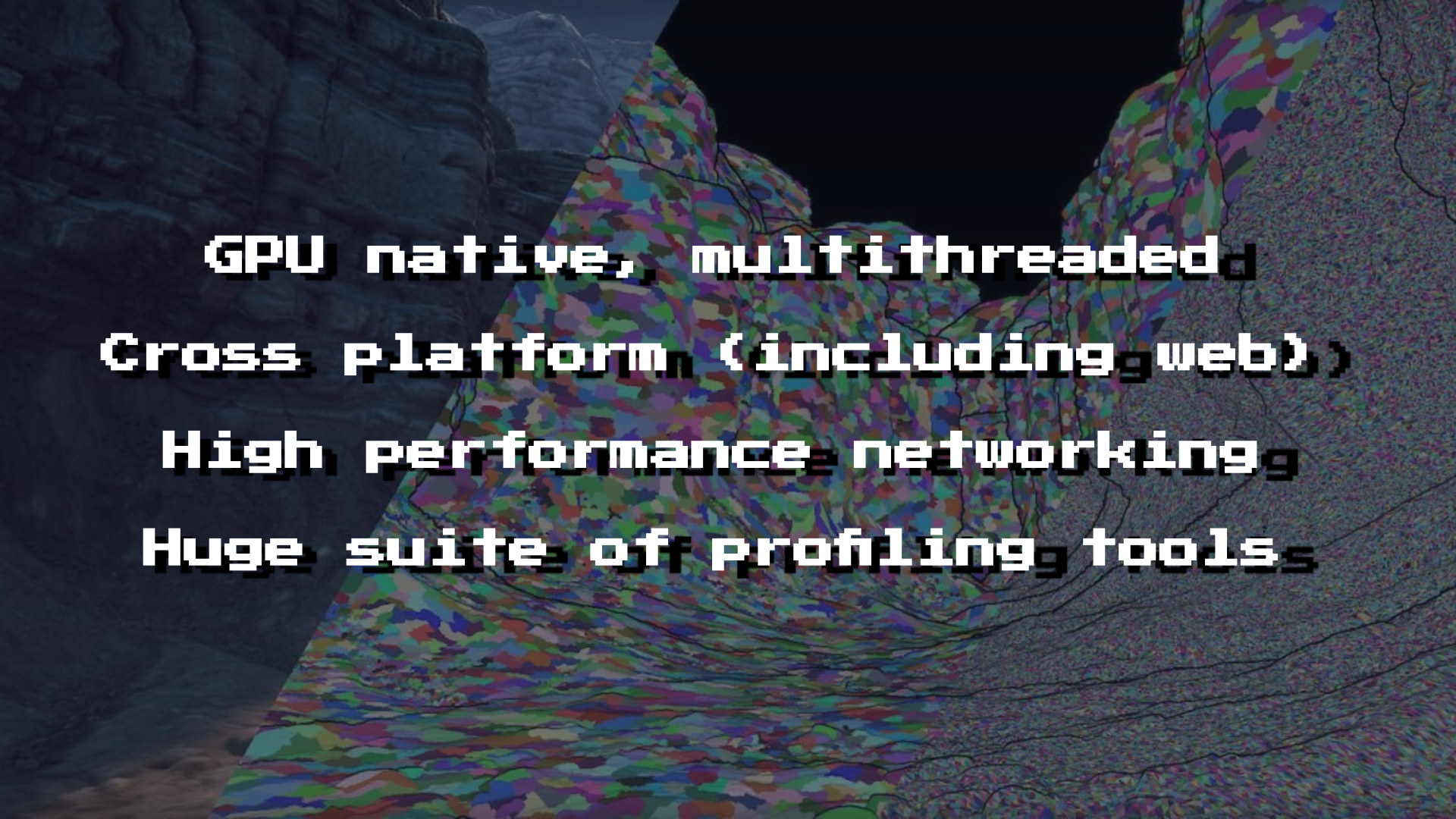
Huge suite off simulations



Visiting a hotel that isn't built yet

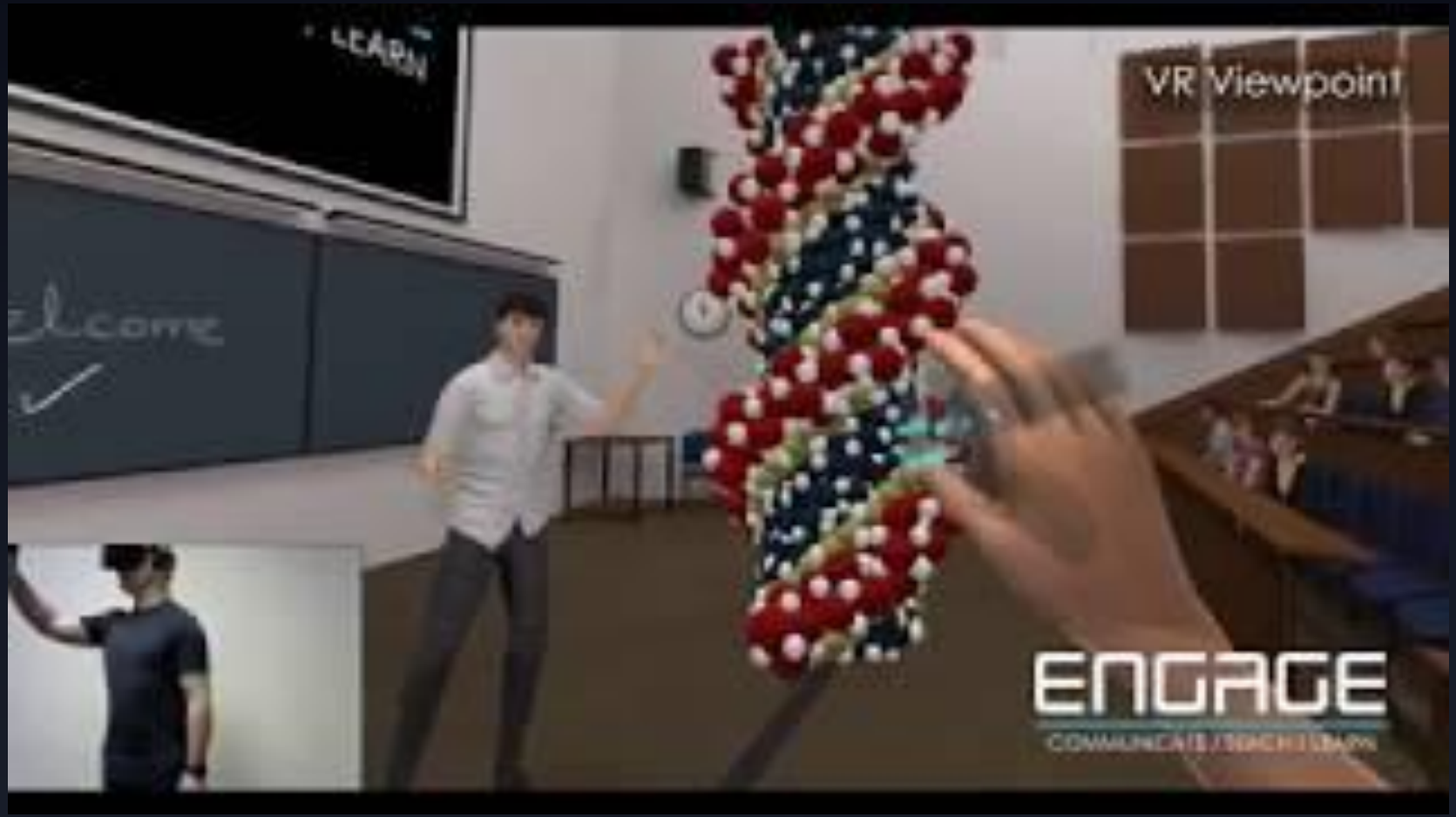
Training robots on procedurally generated environments

...from request/response
to realtime


GPU native, multithreaded
Cross platform (including web)
High performance networking
Huge suite of profiling tools

Reinforcement learning hide and seek

GPU instanced agents training in parallel



Conferences from your own sofa

Cross platform UIs
Realtime networking
Simulations
Computer vision / RL
training

GODOT

Lightweight &
Open Source

Best for:
Hacking,
being free,
simplicity

Flexible &
Cross-Platform

Low end
devices,
Machine
Learning,
Huge
Ecosystem

Photoreal &
Enterprise-Grade

Best for:
High end
devices,
Graphics.
Simulation

Thanks!

Image/Video Credits

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