Reality Composer

How anyone can create meaningful AR experiences

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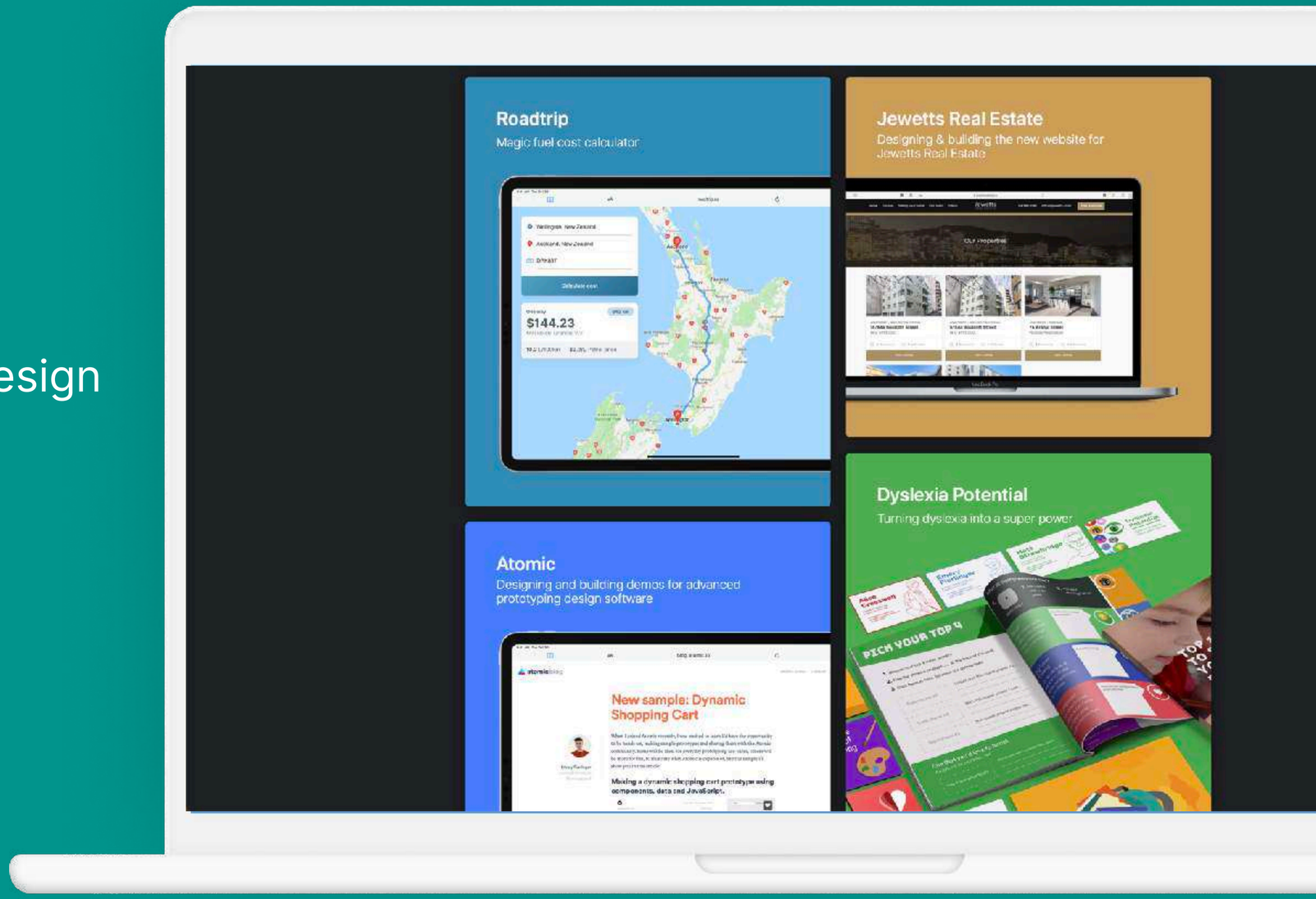
developer.apple.com/augmented-reality

Who am I?

- Studying Graphic & Industrial design
- Freelance designer
- Front end developer
- Working on roadtrip.nz



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WWDC Scholar!

Massive thanks to AUC who provided sponsorship for Zach and I to get to WWDC

Why am I interested in AR?

The most magical experiences from technology come from when the technology is invisible.

One touch espresso

Coffee machine designed for ease of use & sustainability

3D Models

During development we made 3D models to test concepts

- High detail
- Quick to make
- No way to see them full size

Physical models

We also made models out of foam and wood to be able to test scale

- Life size
- Real materiality
- Low detail
- Took a long time to make

3D Models

+ High detail
+ Quick to make
- No way to see full size

Best of both worlds?

+ High detail
+ Quick to make
+ Life size
+ Real materiality

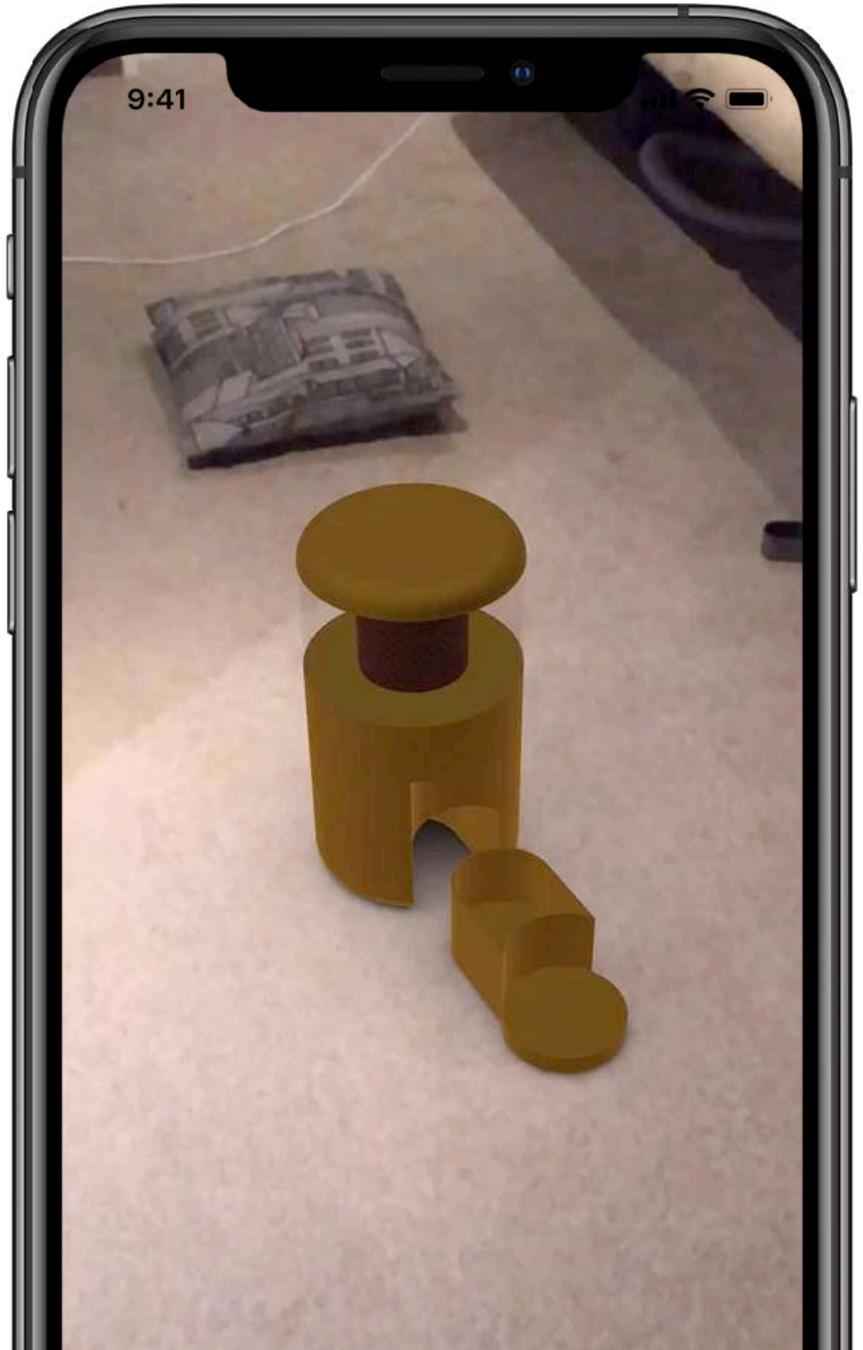
Physical models

+ Life size
+ Real materiality
- Low detail
- Took a long time to make

Augmented Reality

Using Apple’s ARkit

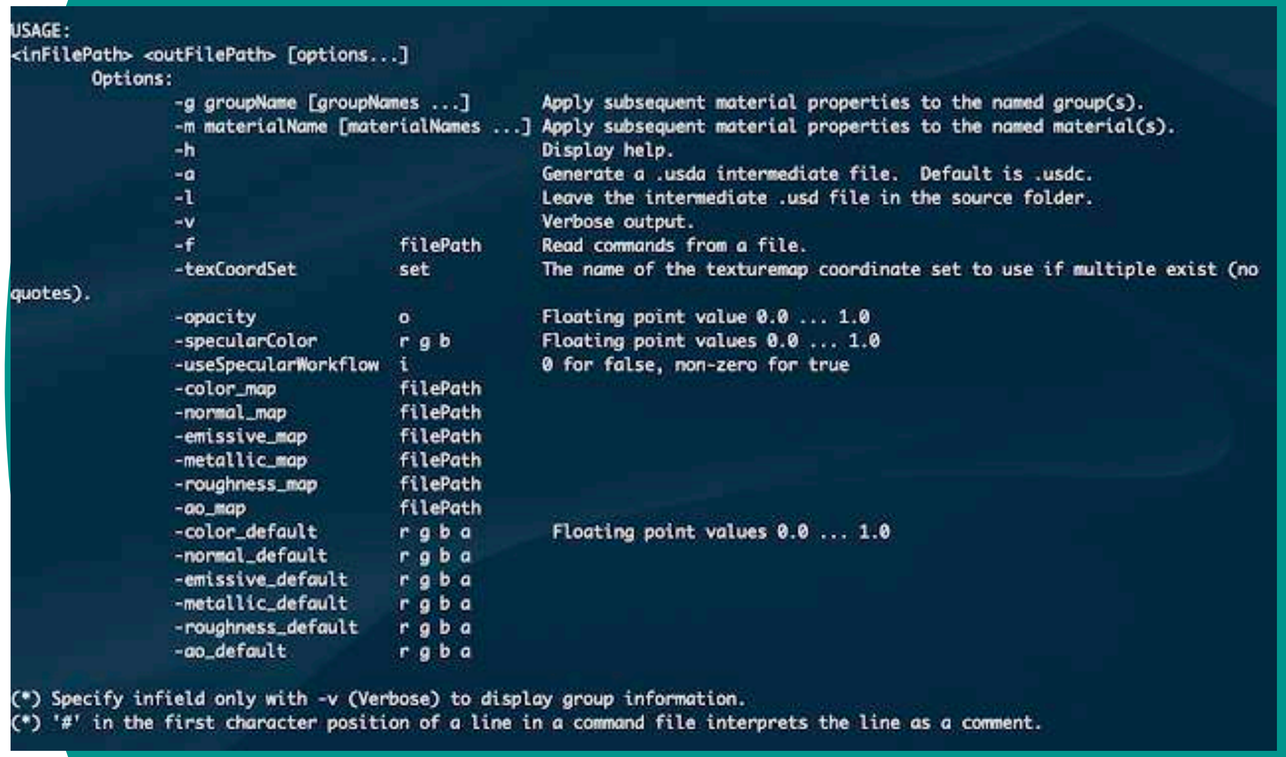
- Great for seeing high detail models in life size
- Way quicker to produce than foam/wood models
- Seriously cool



Downsides...

To make USDZ files you had to use an Xcode CLI

- Lack of documentation
- Textures were terrible
- Zero interactivity
- It was HARD all round
- Took a lot of time to do when quickly iterating



USDZ creation workflow

Create
an .obj file

Find texture
images

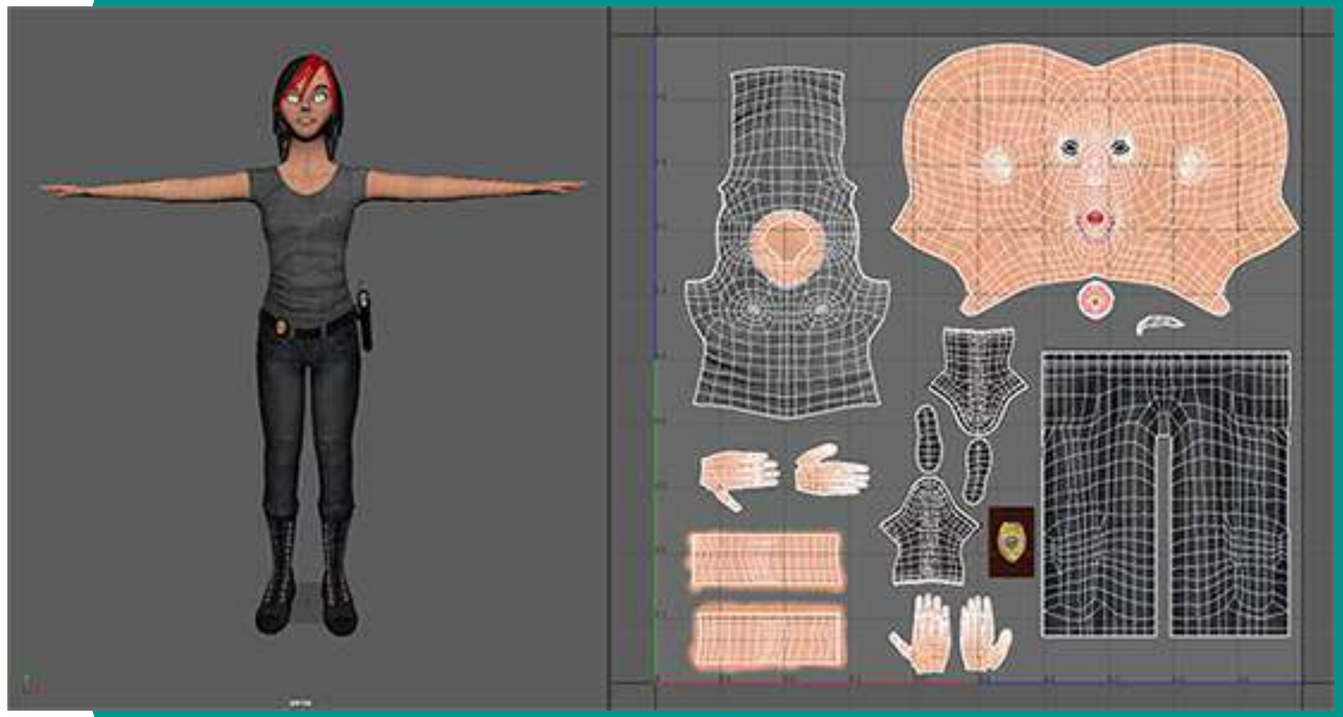
Apply textures using
Xcode CLI

Deploy USDZ file

What is a .USDZ?

Pixar + Apple’s open source file format for 3D

- A zipped USD file with textures
- Great shading/texturing qualities
- Use PBR UV texture maps



Maya UV texturing

USDZ isn’t just for AR

Pixar has been developing the standard for decades for movie production

The majority of Toy Story 4's assets were USDZ files, which meant that artists could work on the same scene together

USDZ for AR

Special files that can open in AR

- Files launch in AR Quick Look
- Can be used in apps or websites
- Work great for static content
- Open source & cross platform (in theory)
- iPhone 6s and above (A9)

USDZ Downsides

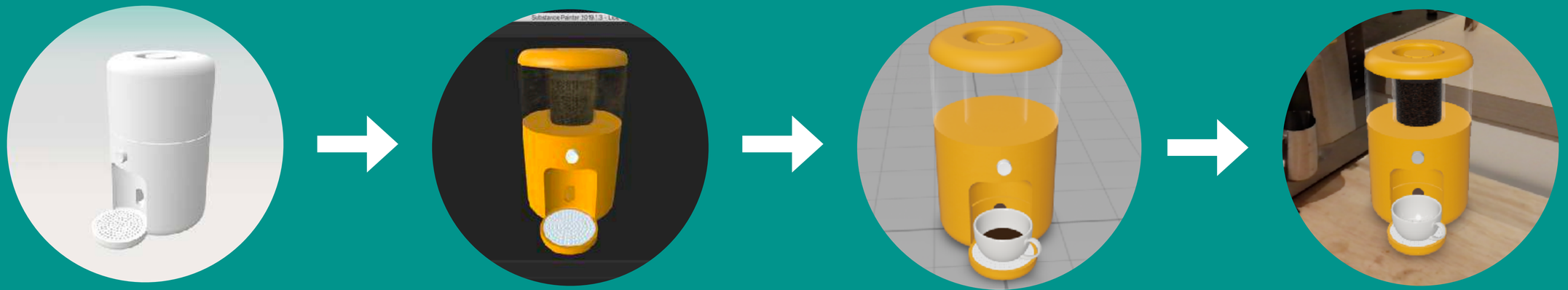
Objects are just that – static

- Supports a looping animation
- No support for interaction
- No face/image/object anchors
- No way to view multiple objects
- No ability to play audio

This year, that all changes

1. Much better asset creation workflow
2. Brand new Apple AR prototyping app
3. Brand new Apple AR file format

New AR creation workflow



Model
Create a 3D file

Texture
Drag + drop materials

Interactions
Make it do stuff

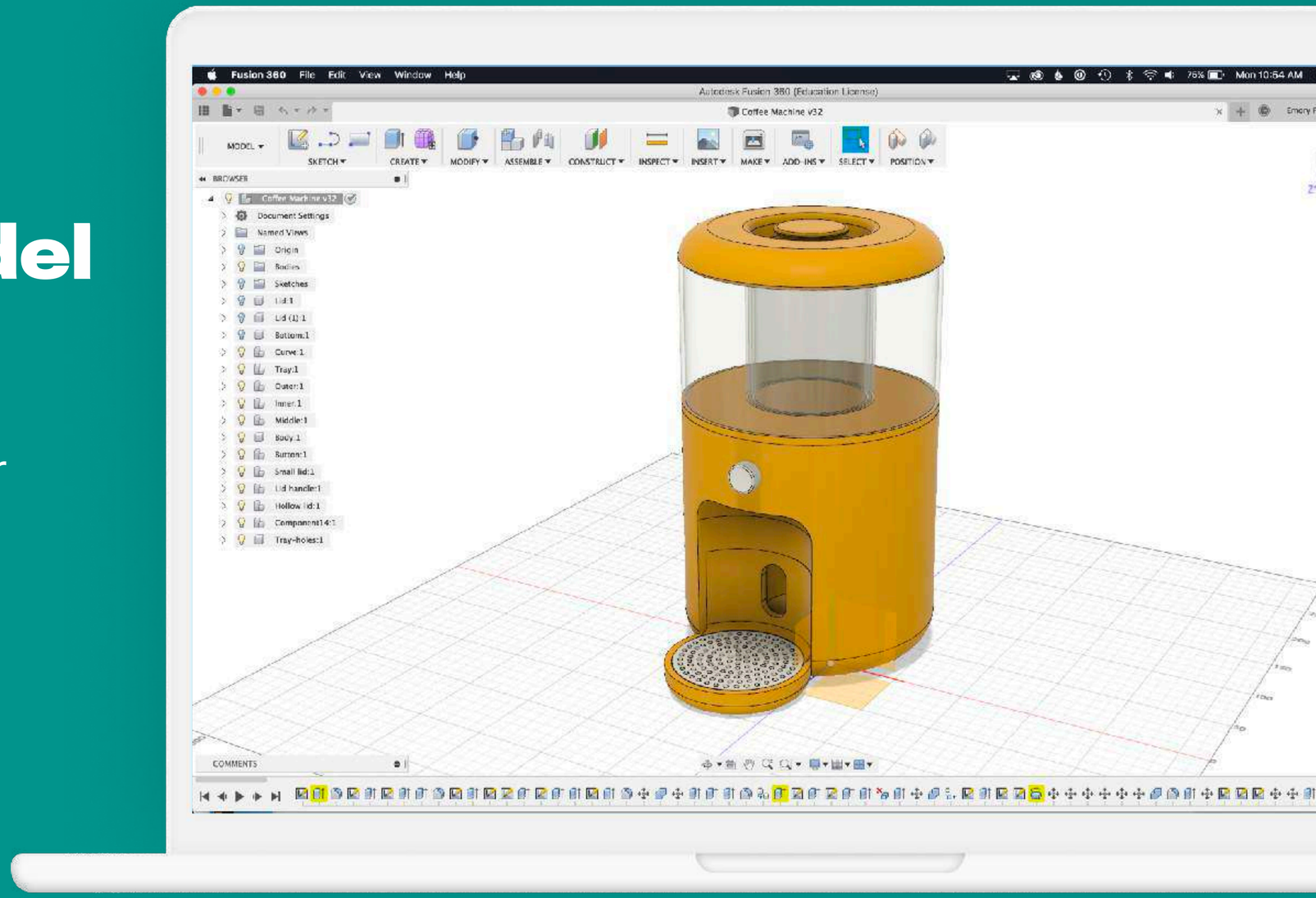
Deploy
Show people

STEP 1 - MODELING

Create a 3D model

All you need is a .obj or .fbx file

- Either model using app of your choice
- Or 3D scan an object
- Or Download online & modify

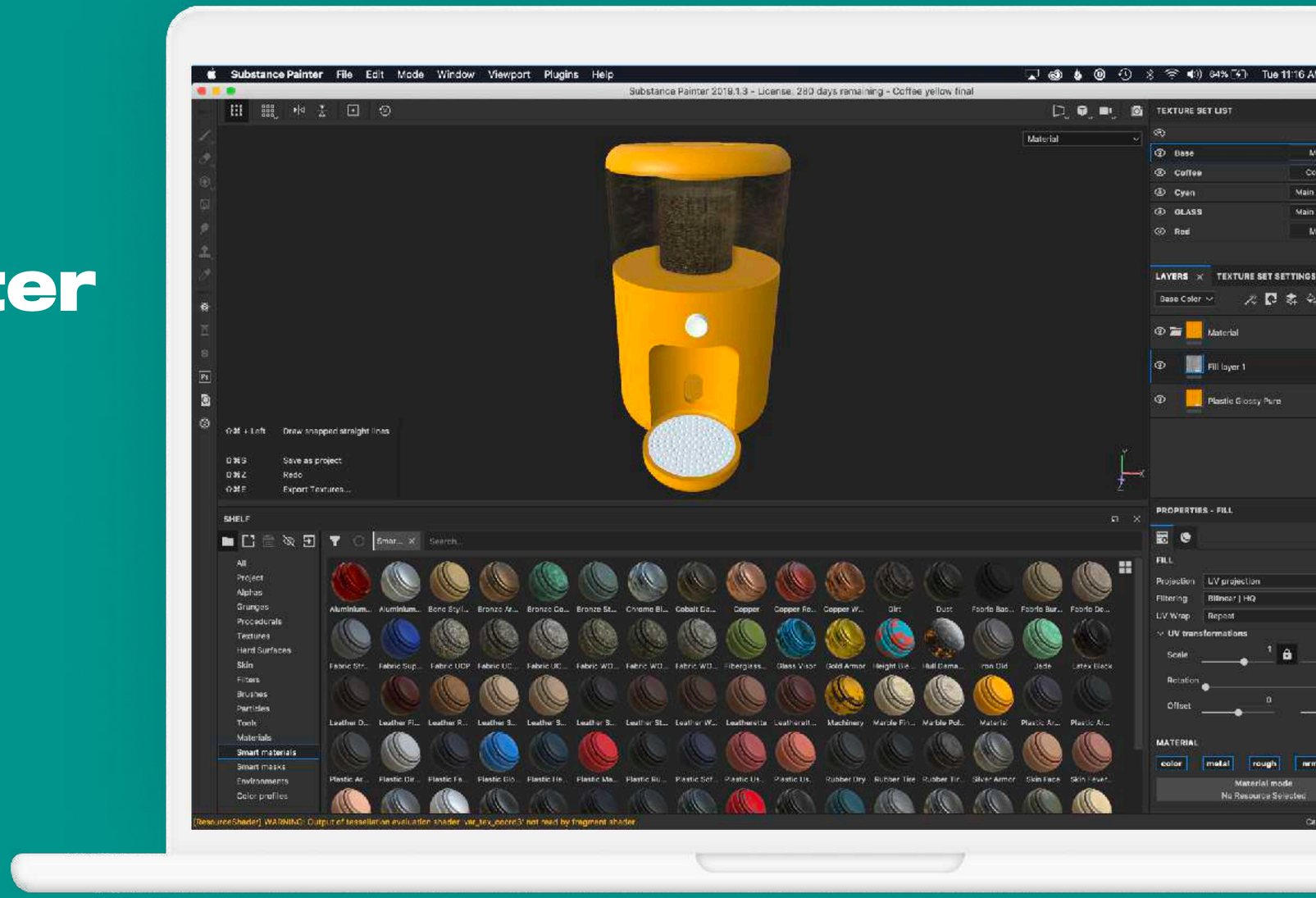


STEP 2 - TEXTURING

Substance painter

Photoshop for 3D objects

- Import your .obj file
- Texture using drag + drop
- Export as .USDZ built in



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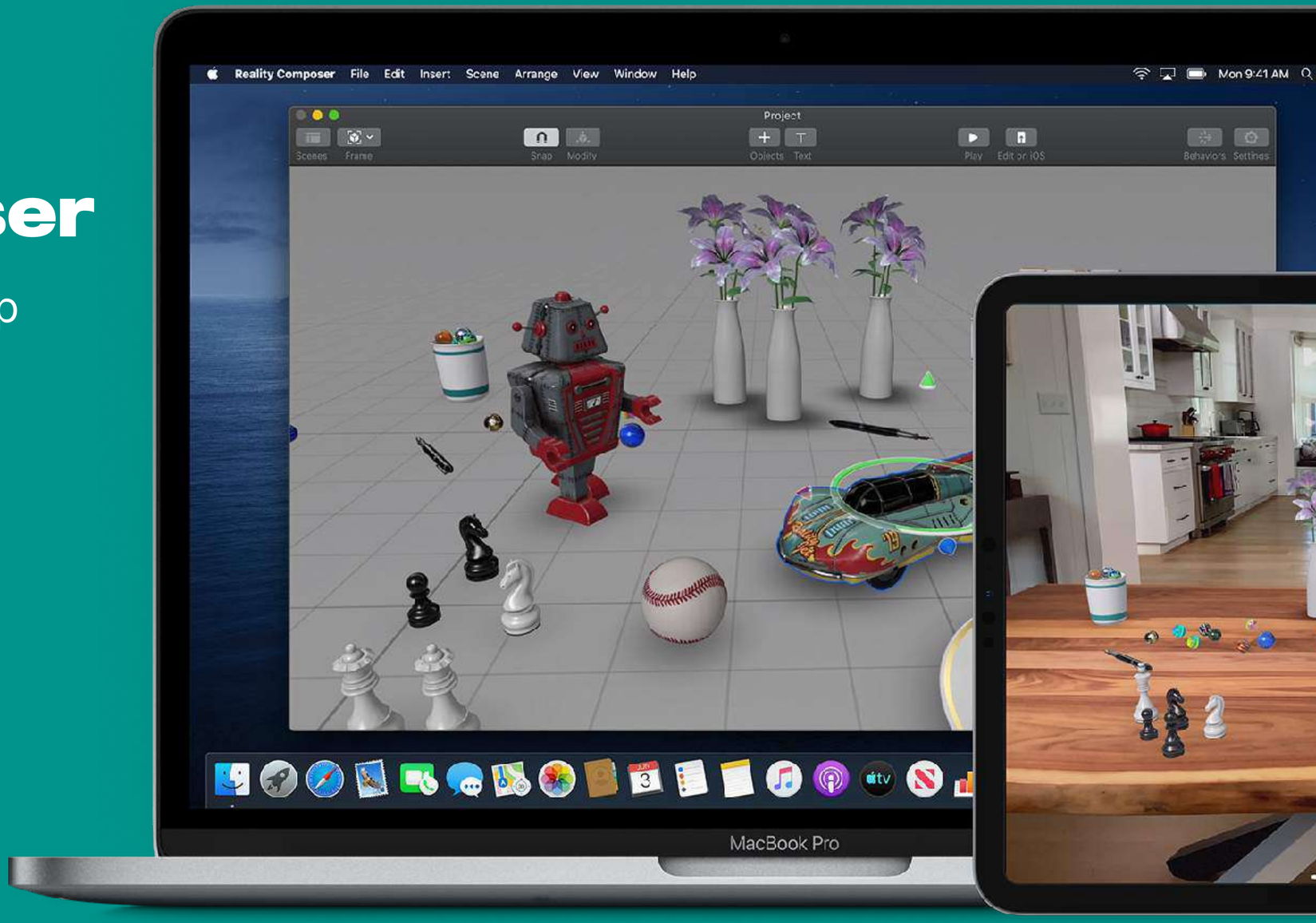
Substance3D.com

STEP 3 - ADD INTERACTION

Reality composer

Apple’s new AR prototyping app

- Import USDZ assets
- Apply interactions
- Quickly prototype in AR
- Export as a .reality file
- 100% ✨ no code ✨
- Mac + iOS app



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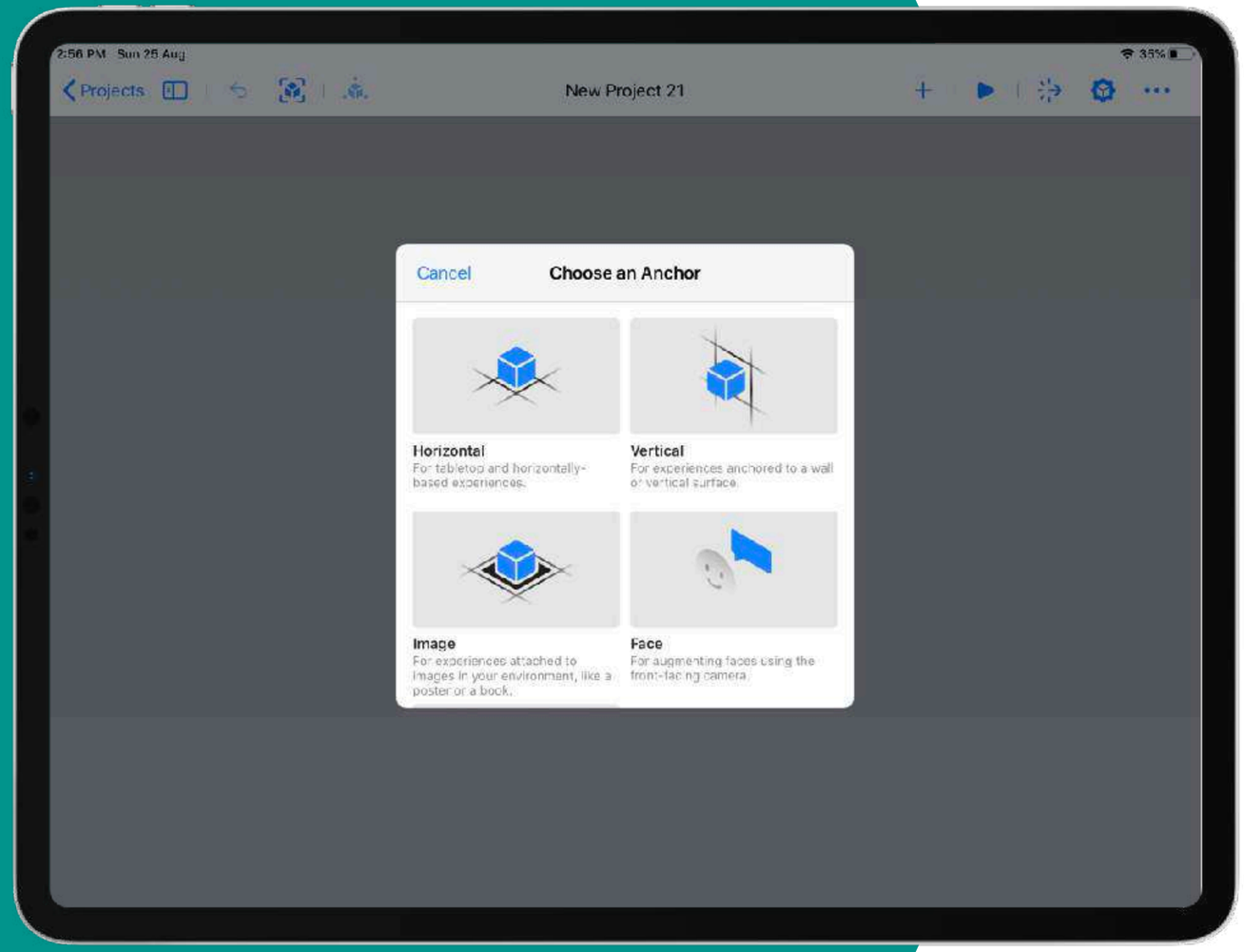
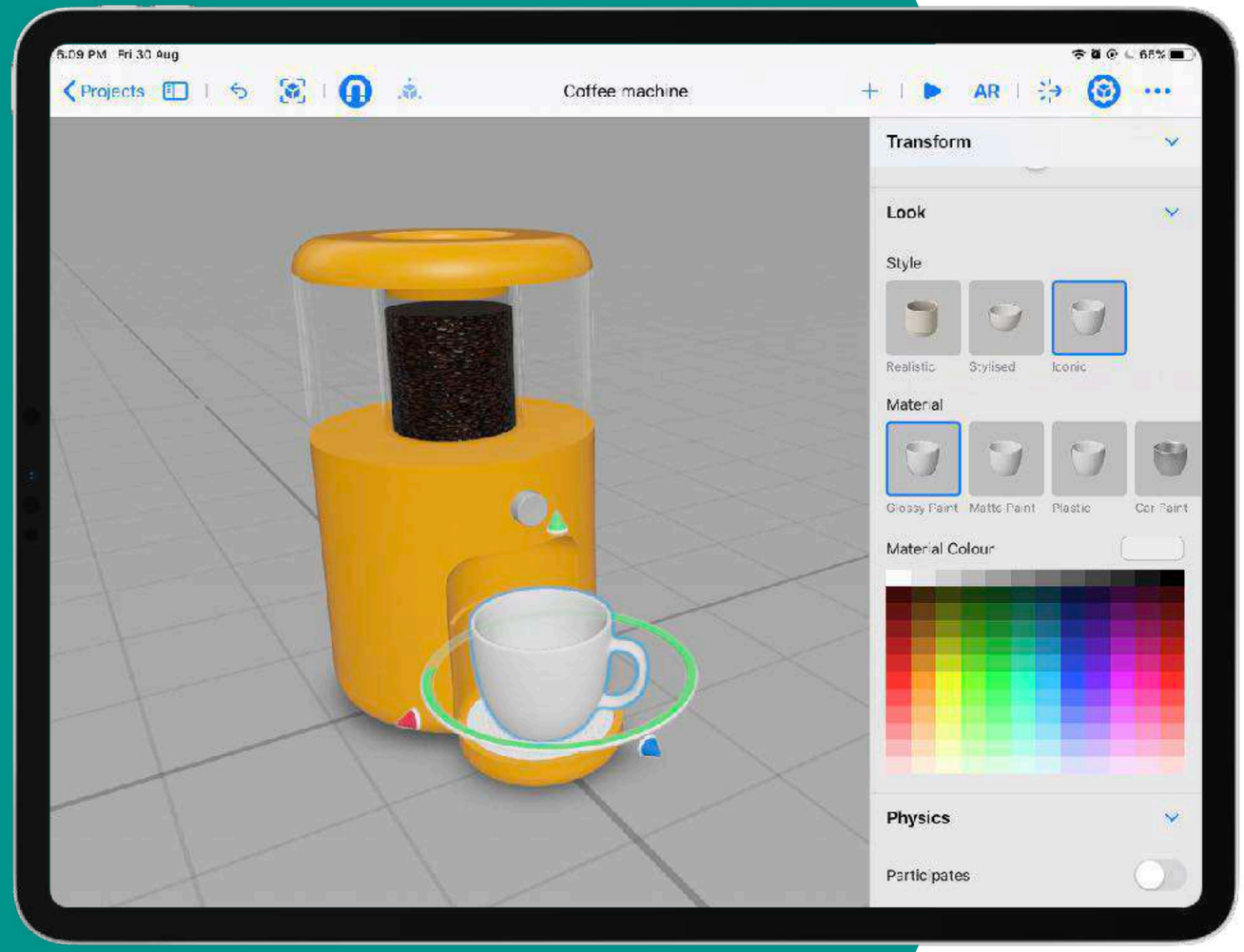


REALITY COMPOSER – STEP 1

Choose your anchor

- Horizontal
- Vertical
- Image
- Face
- Object

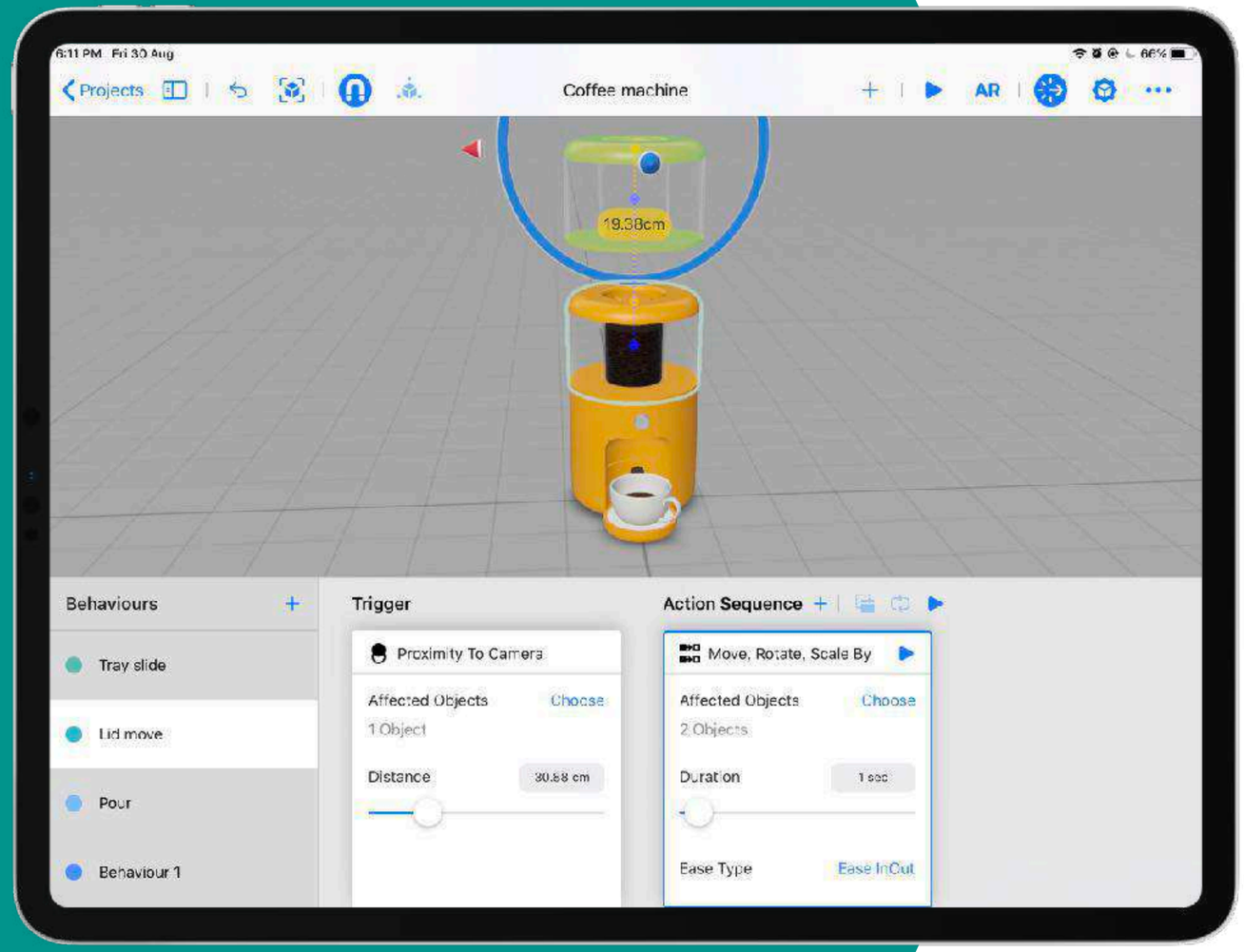


REALITY COMPOSER – STEP 2

Import .USDZ

Or use Apple’s bundled collection of assets

- Add gravity & weight
- Change sizes
- Adjust colours and materials



REALITY COMPOSER – STEP 3

Apply interactions

If this, then that

- Built in actions (like keynote)
- Force + Gravity
- Movement/scaling
- Show/Hide
- Change scene
- Play sound
- Notify Xcode

REALITY COMPOSER - STEP 4

Export reality file

Reality files are much more dynamic than USDZ

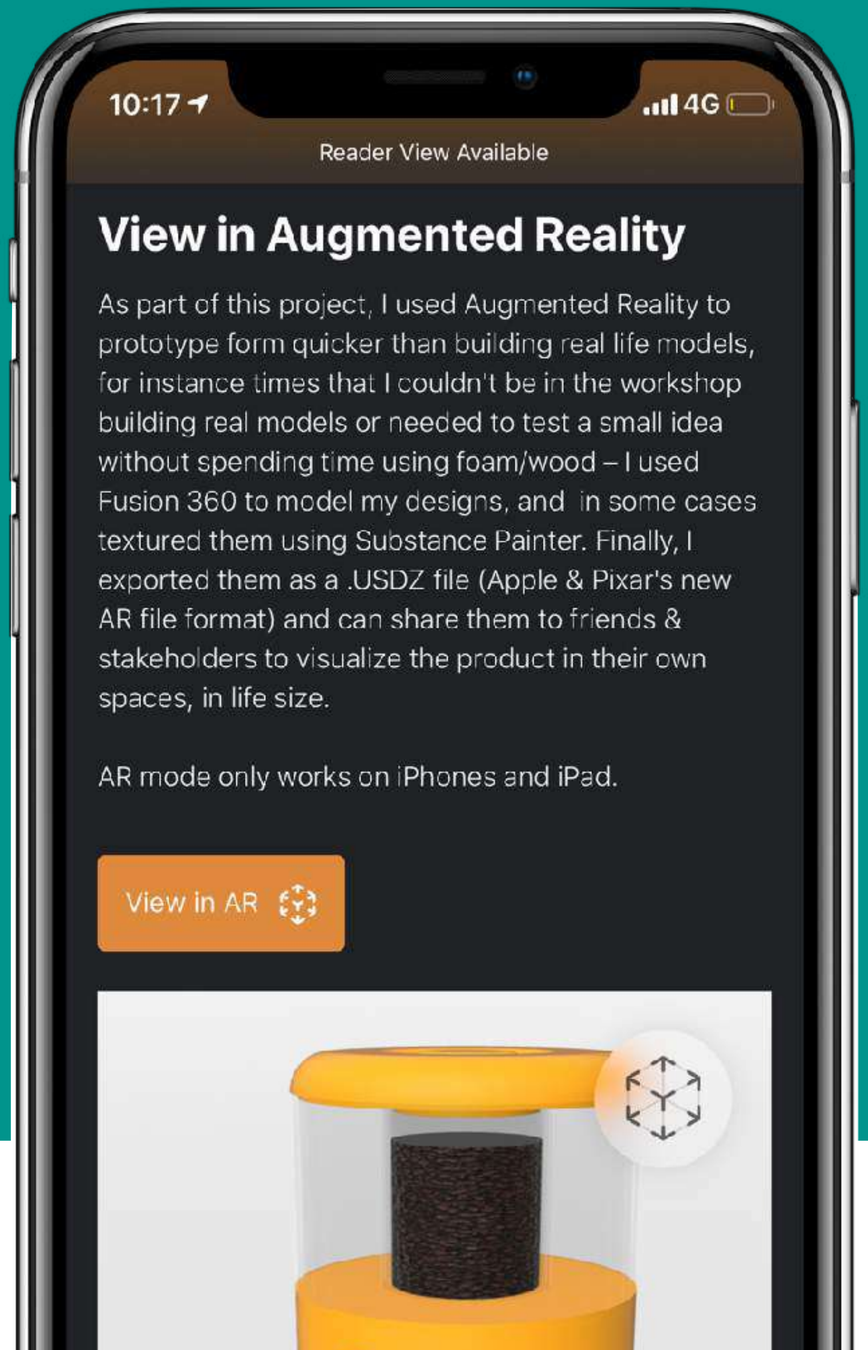
- Physics engine
- Face/Object/Image anchors
- Supports all interactions
- Asset manipulation via Xcode
- Audio

.USDZ

- Simple animations
- Interact only by moving the object
- Horizontal & vertical anchors
- No support for multiple objects
- No support for changing scene
- No support for audio
- No support for physics
- Cross platform/open source

.Reality

- Advanced animations
- Custom powerful interactions
- Hor, Ver, Image, Object & Face anchors
- As many other objects as you like
- Change scenes based on user interaction
- 3D Audio
- Full physics engine
- Apple only



STEP 4 - DEPLOYING

AR on the web

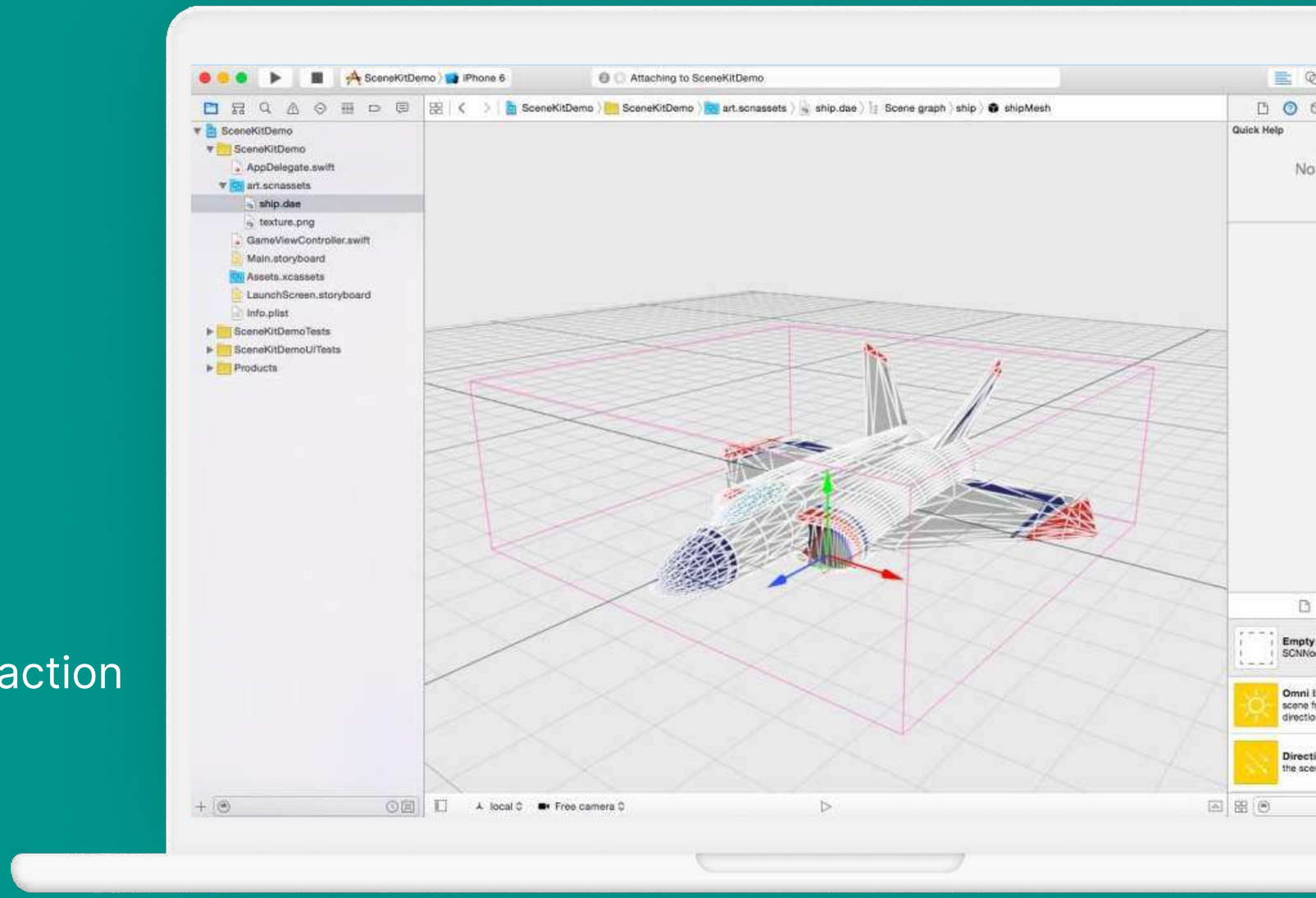
- Works with .USDZ and .reality files
- Opens in AR quick look
- Reality files are Apple proprietary
- As easy as embedding a link
- Safari adds an AR badge onto the image

emory.co.nz/coffee

STEP 4 - DEPLOYING

Reality files in your app

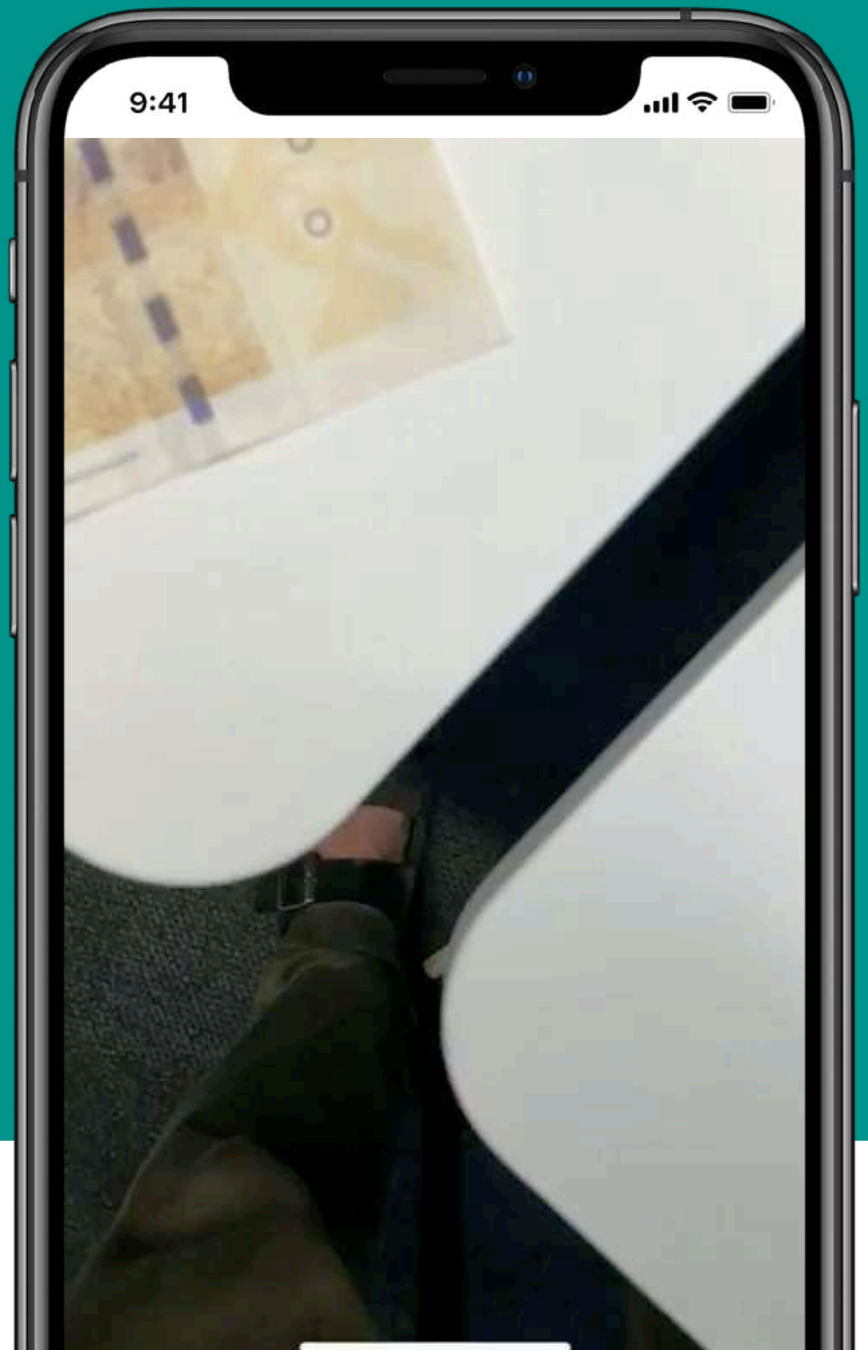
- Drag .rcproject file into Xcode
- Xcode imports objects for you
- Move objects with code
- Send/receive triggers for interaction



How is this relevant to me and my app?

The most magical experiences from technology come from when the technology is invisible.

Can AR make your app more magical?



Real world objects

Providing more information about surroundings

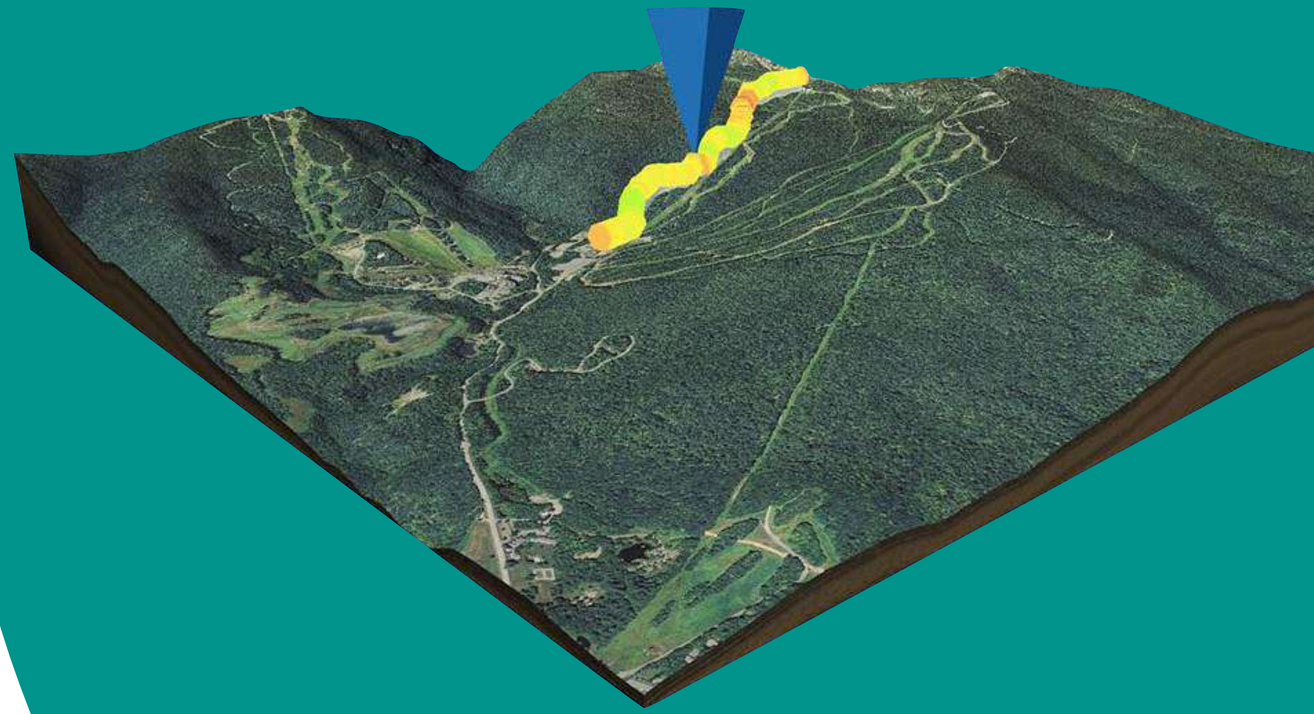
- Point at book – reviews
- Point at currency – convert
- Point at newspaper – video

@mortenjust

Data visualisation

AR is great for showing things at scale or in context

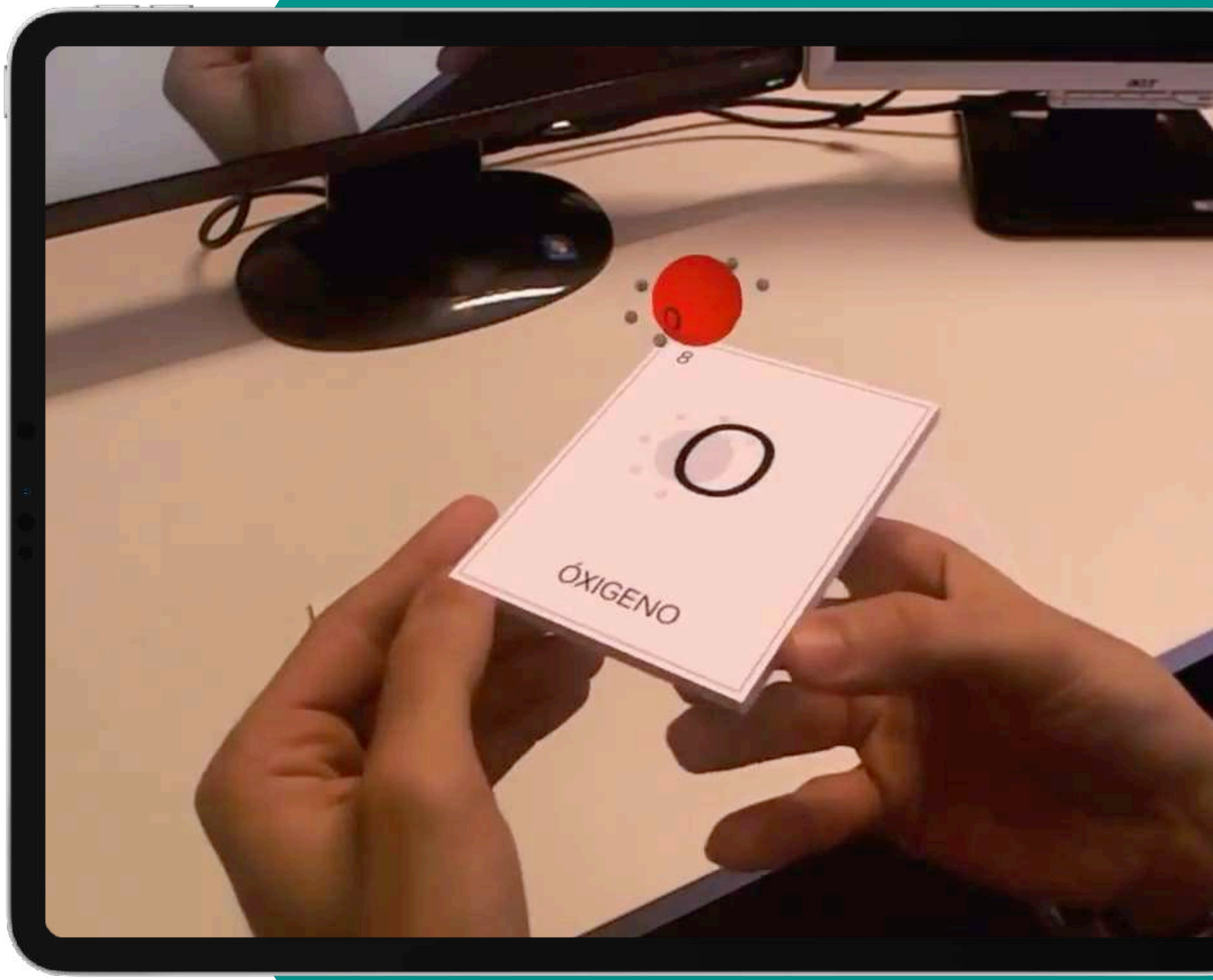
- Provide more context – show how big something digital is
- Represent data/show comparisons



getslopes.com

Education

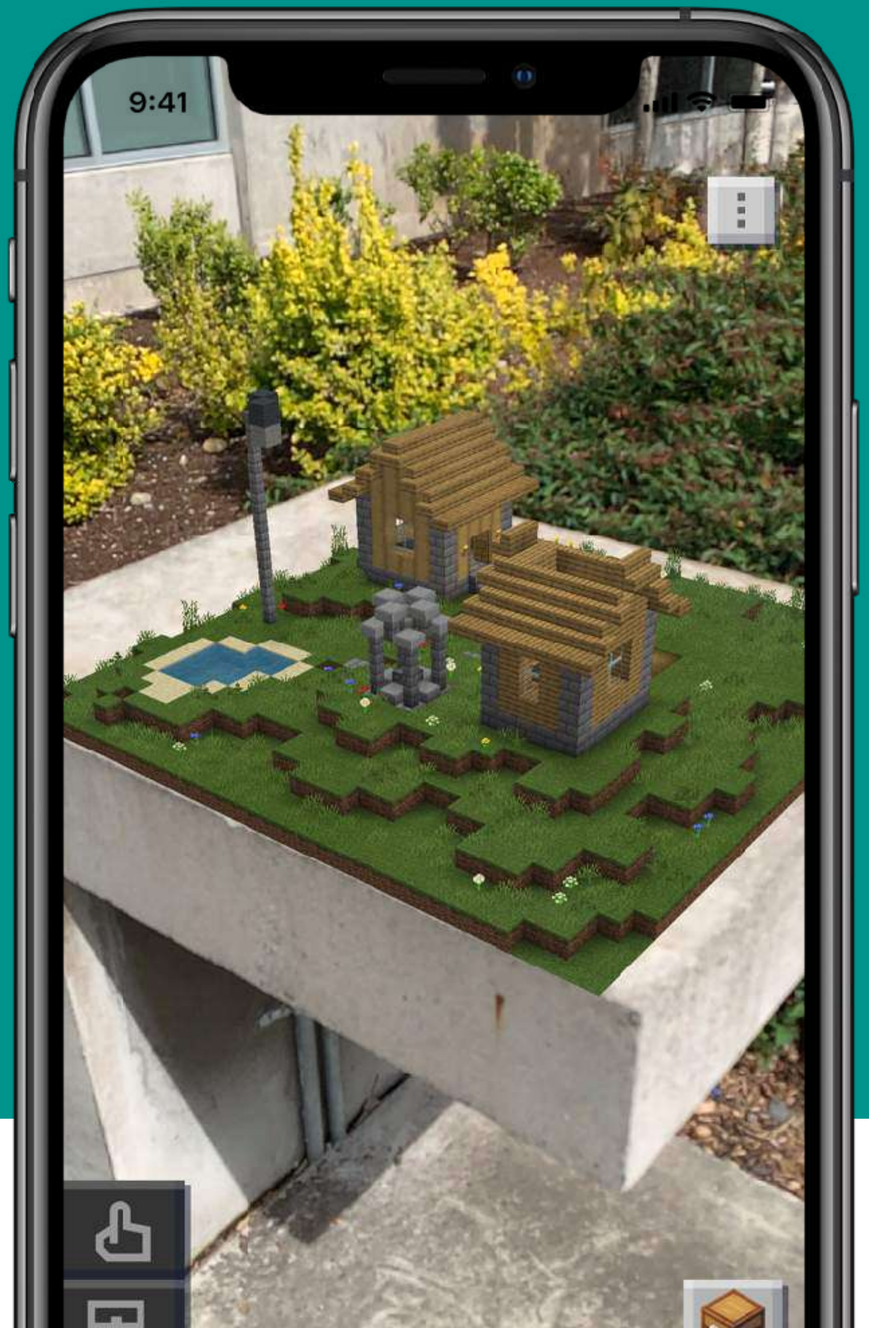
From playing with chemistry to viewing a scale model solar system, there’s some pretty compelling use cases for AR in education



Gaming

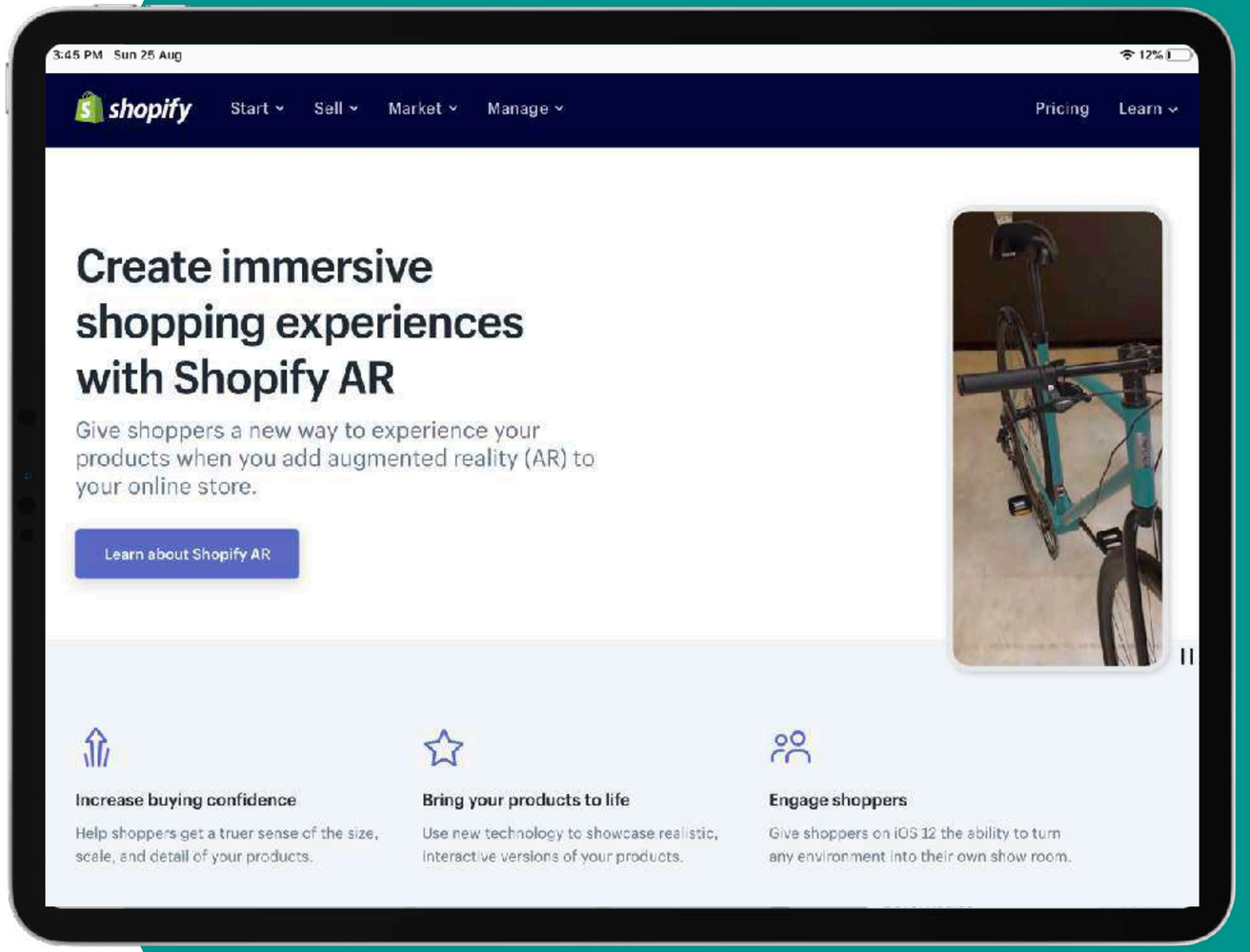
One of the most obvious use cases, but which surprisingly hasn't had much adoption yet, despite demonstrating some pretty amazing experiences

- Minecraft Earth
- Pokemon Go
-



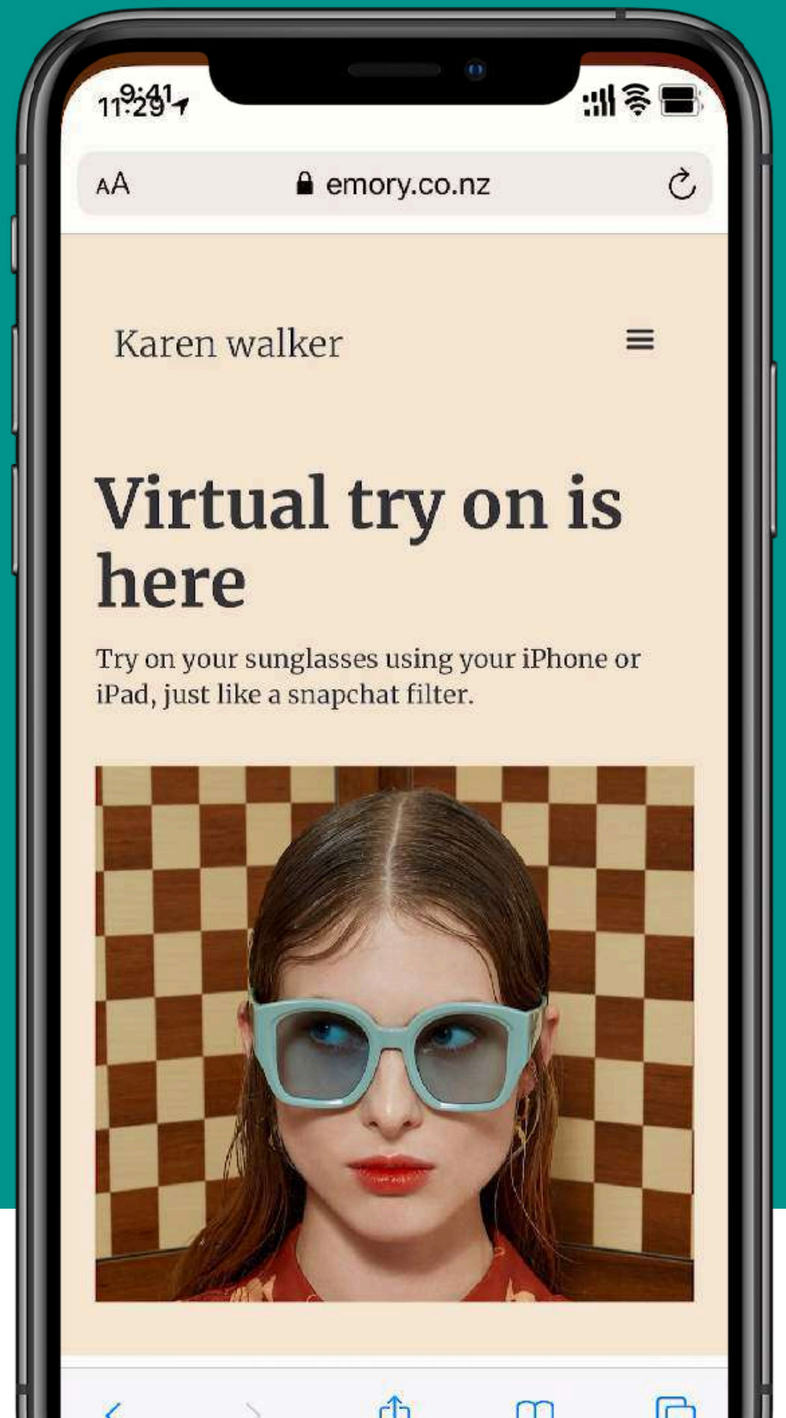
E-commerce

AR products for online shopping just makes sense. It helps consumers make a more educated decision and helps businesses not lose money to returns & refunds.



Try on makeup

Youtube is showing virtual try on makeup ads alongside makeup videos so you can follow along with what the vlogger is doing in their video and see how the products work on you



Try on sunglasses

Not possible before reality composer – face filters make the experience possible

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What is Reality Composer good for?

1

Unlocks a whole new range of possibilities for E-commerce

2

It's the best AR prototyping tool.

If you've been meaning to try out an idea in AR but found it too difficult or time consuming – you have no excuses anymore

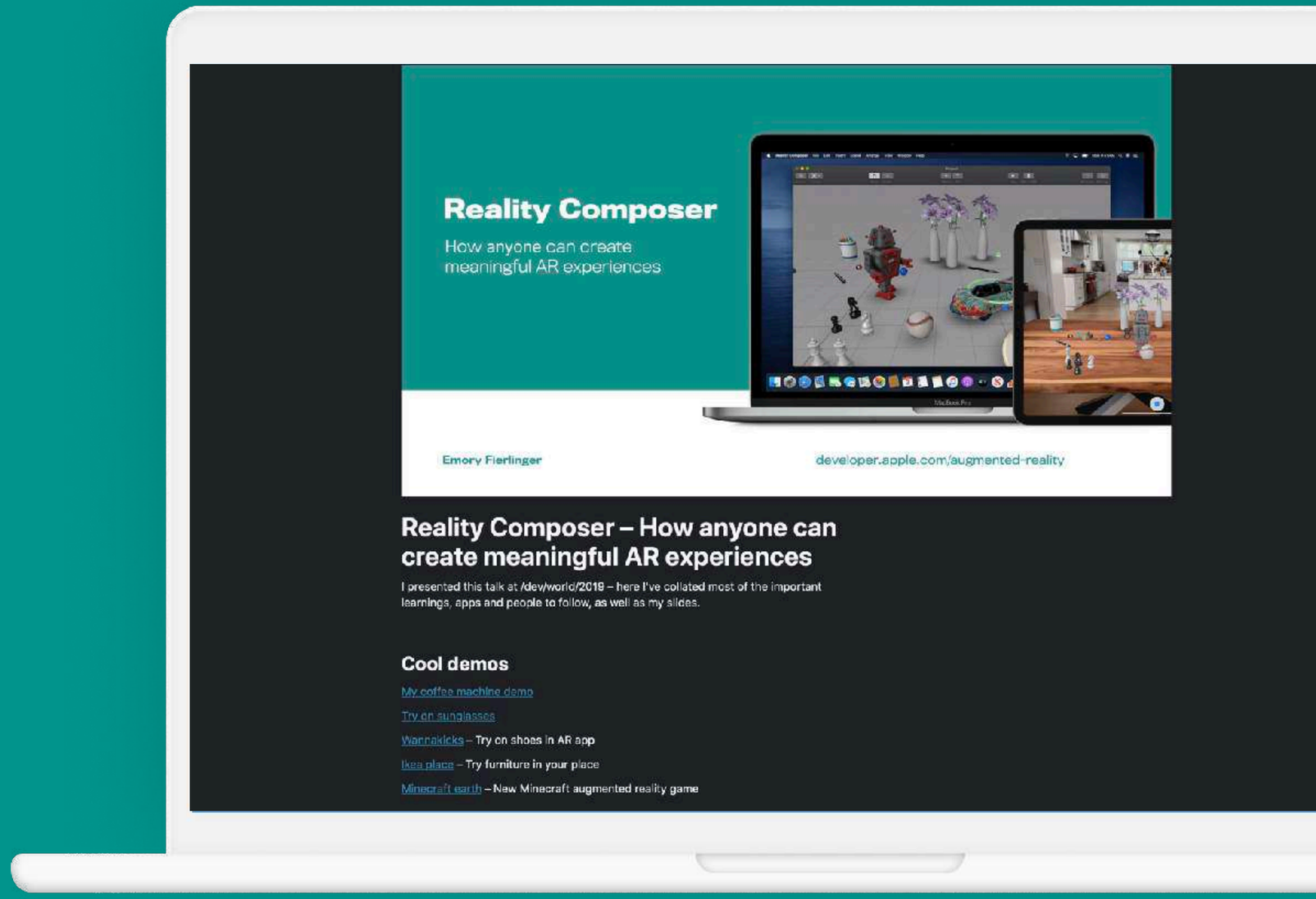
What does your app look like in a world after the iPhone? 😎

Reality Composer is the best way to start answering that question

Thanks for having me!

Have fun prototyping with AR

@emoryzanef



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