

MARS AR: A VENTURE TRULY OUT OF THIS WORLD

Layla Gordon

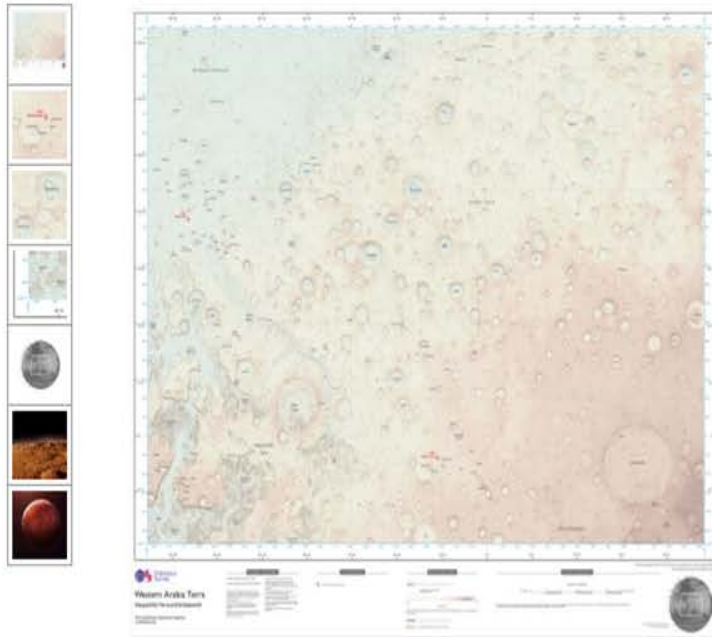
Tech Labs Engineer

MARS: WESTERN ARABIA TERRA MAP FACTS

- Topographic basemap created from Elevation data from Satellite Imagery (MOLA instrument on MGS) supplied by Nasa/JPL/GSF. Resolution approximately 463 meters per pixel
- Printed at a scale of 1 to 4 million (1:4 000 000) and measure 980 by 840 mm.
- Represents an area of Mars (3672 x 2721 km) similar to the size of United States of America (USA)
- Inspired by needs of upcoming European Space Agency (ESA) missions to Mars and OS recent venture overseas
- Exploring potentials of Augmented and virtual reality

Map of Mars - Western Arabia Terra (Limited edition)

Margaritifer Terra & Schiaparelli



£24.99

Mapping an extent of the surface of Mars in our famous detail, this limited edition 1:4,000,000 map of the Red Planet is our first foray into intragalactic mapping.

Quantity 1

Add to Basket



4/5 (1 customer review)

Augmented/Virtual Reality to hit \$150 billion disrupting mobile by 2020

April 2015



NEWS FEED

Digi-Capital's Reality Check – VR/AR CEOs, corporate divisional heads & VCs invited to exclusive forum (for free!)
<https://t.co/VbffcUeH6v>
8 hours ago.

eCommerce/mCommerce investment: Grabr grabs \$3.5M
<https://t.co/ezuTEgWMGN>
14 hours ago.

ARCHIVE

- 2016
- 2015
- 2014
- 2013
- 2012
- 2011
- 2010

(Note: A revised \$120 billion AR/VR forecast was published in January 2016 here)

SEVERAL FORMS

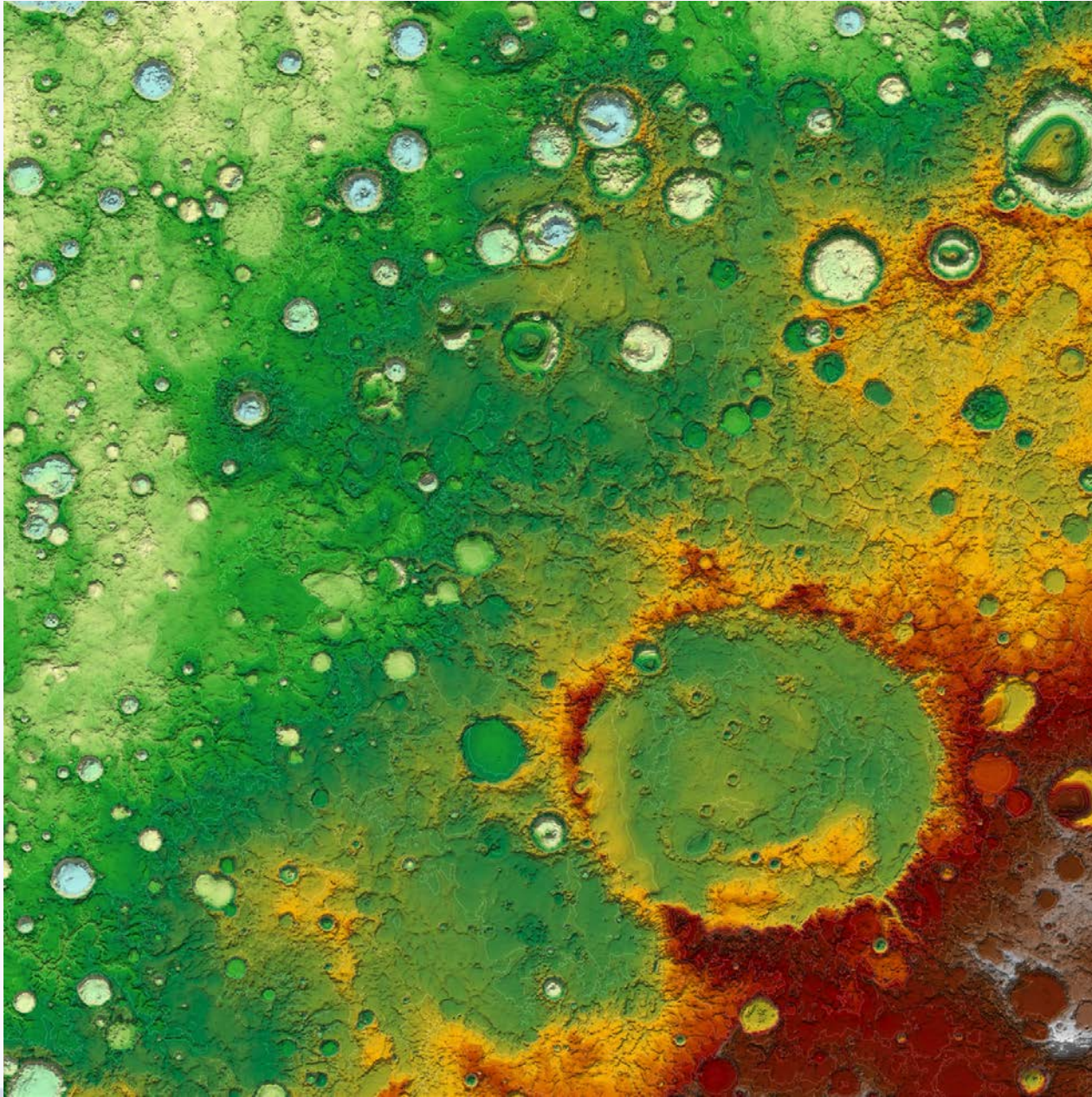
- Image targets
 - Location-based
 - 3D objects augmentation
 - Combination of all 3
-
- Pokemon AR IS JUST a Location-based game





Cookies & Clogs





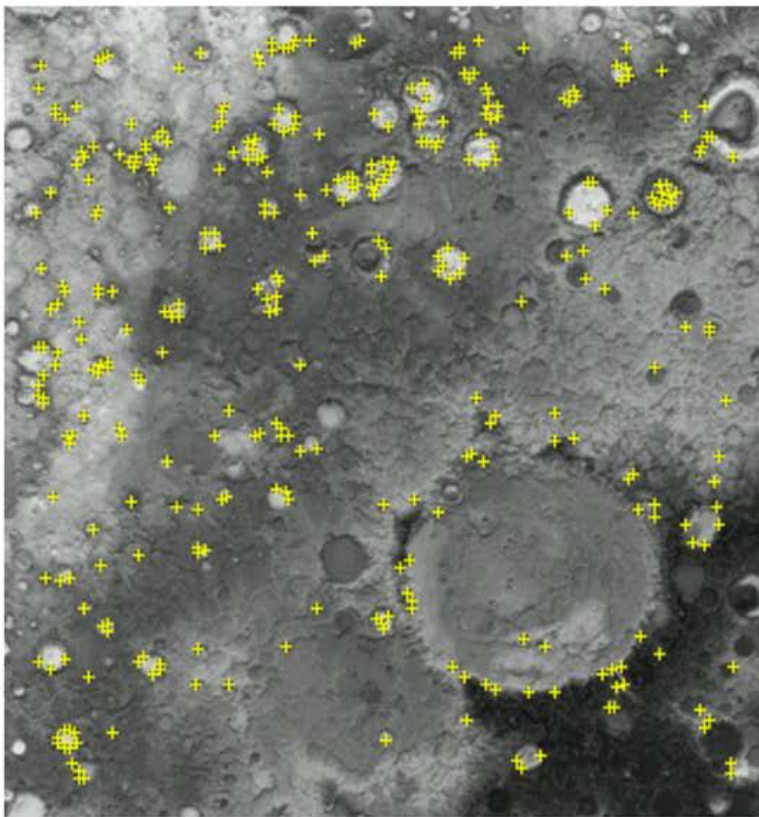
VUFORIA: AUGMENTED REALITY CREATION TOOL

- Image Targets: Flat images such as print media and packaging
- VuMarks: Customised markers that can encode a range of data formats. Include unique ID and tracking
- Frame Markers
- Text Recognition, a dictionary of ~100,000 English words
- 3D Object Recognition, scanning physical objects in the world

[Target Manager](#) > [MarsChrisW](#) > [AR-BaseMapping](#)

AR-BaseMapping

[Edit Name](#) [Remove](#)



Type: Single Image

Status: Active

Target ID: 2a94b048c62c48dfbaa769d9c9b30355

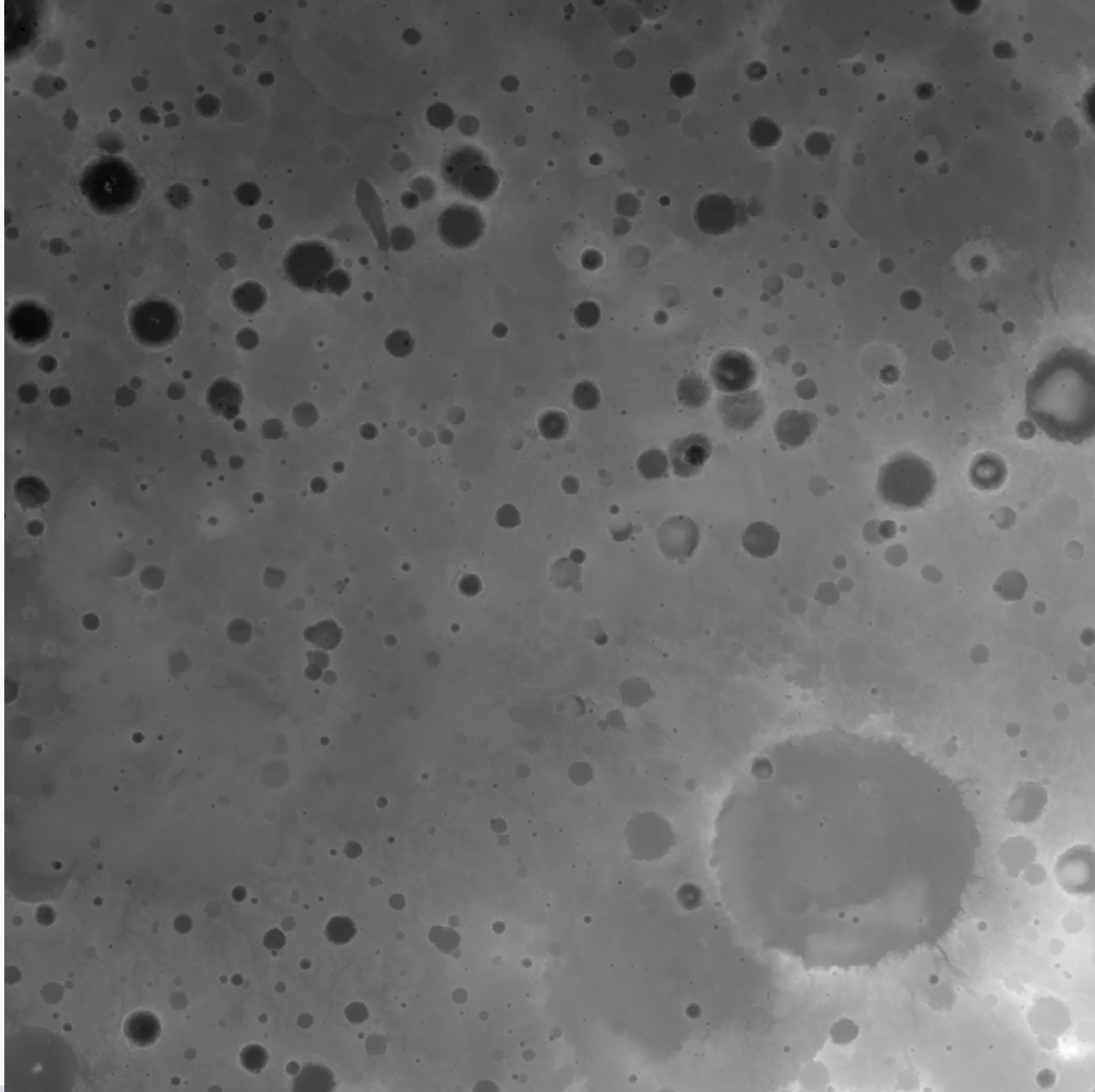
Augmentable: ★★★★★

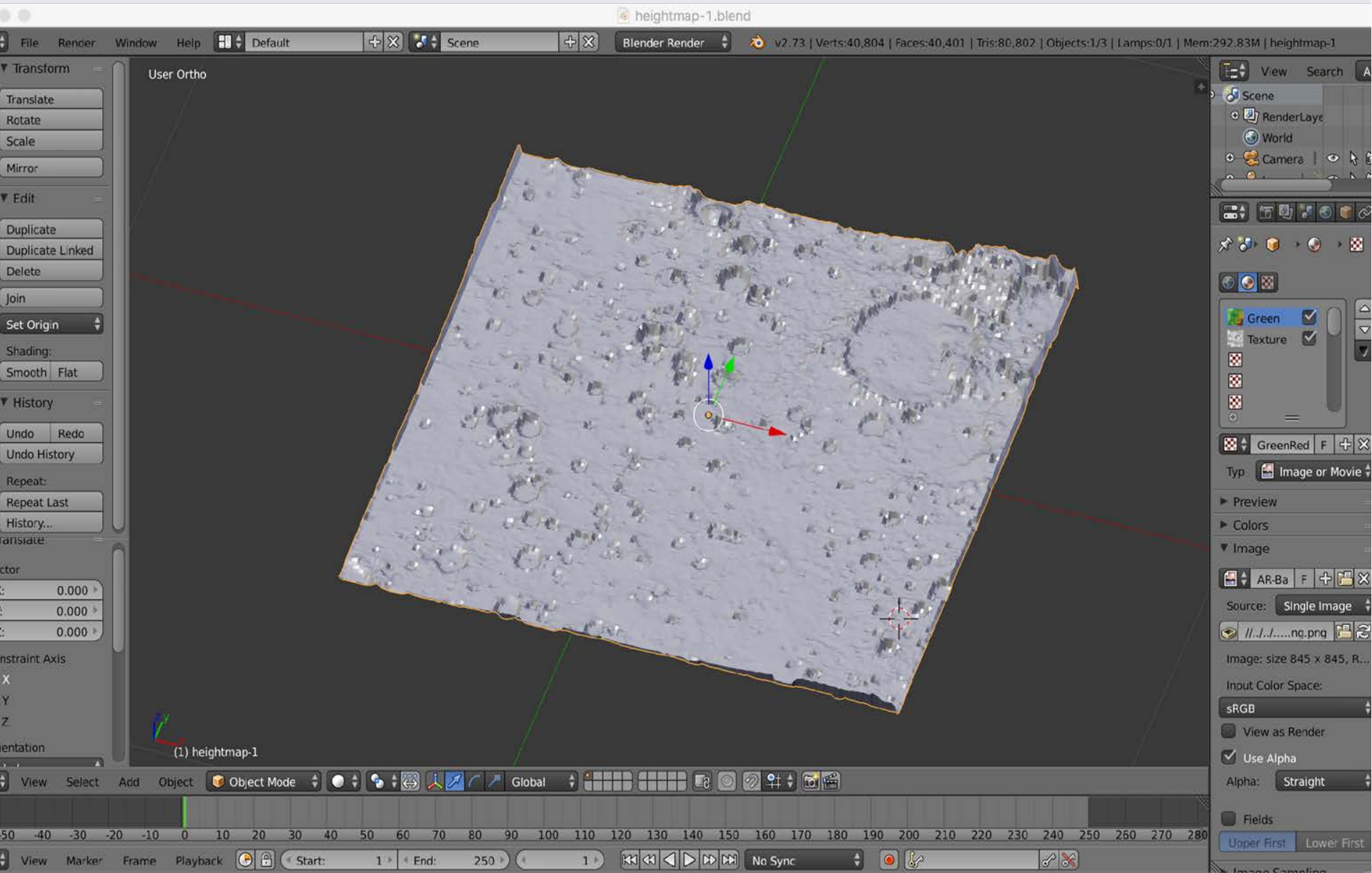
Added: Jul 25, 2016 14:31

Modified: Jul 25, 2016 14:31

MARS AR (NATIVE IOS SDK)

- Modified the native Vuforia iOS app
- Used cloud recognition mode for image targets
 - Needs internet connection
- Requires OpenGL programming within Objective C
- Hard to make changes to the 3D augmentation





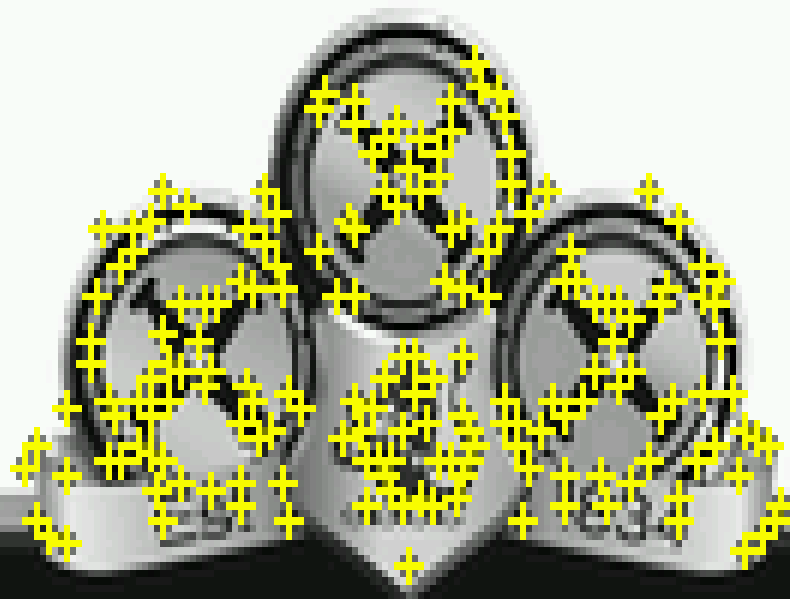
MARS AR (UNITY VUFORIA PACKAGE)

- Works offline now
- No menus
- Easy to add rovers and other 3d objects
- No blender stage, more optimisation on mesh rendering (less polygons)
- Creating terrains within unity to control lighting, textures and size in comparison to the image target

The screenshot displays the Unity game engine interface. The central viewport shows a 3D scene of a rocky, cratered terrain under a blue sky. A small green character is visible on the terrain. The interface includes several panels:

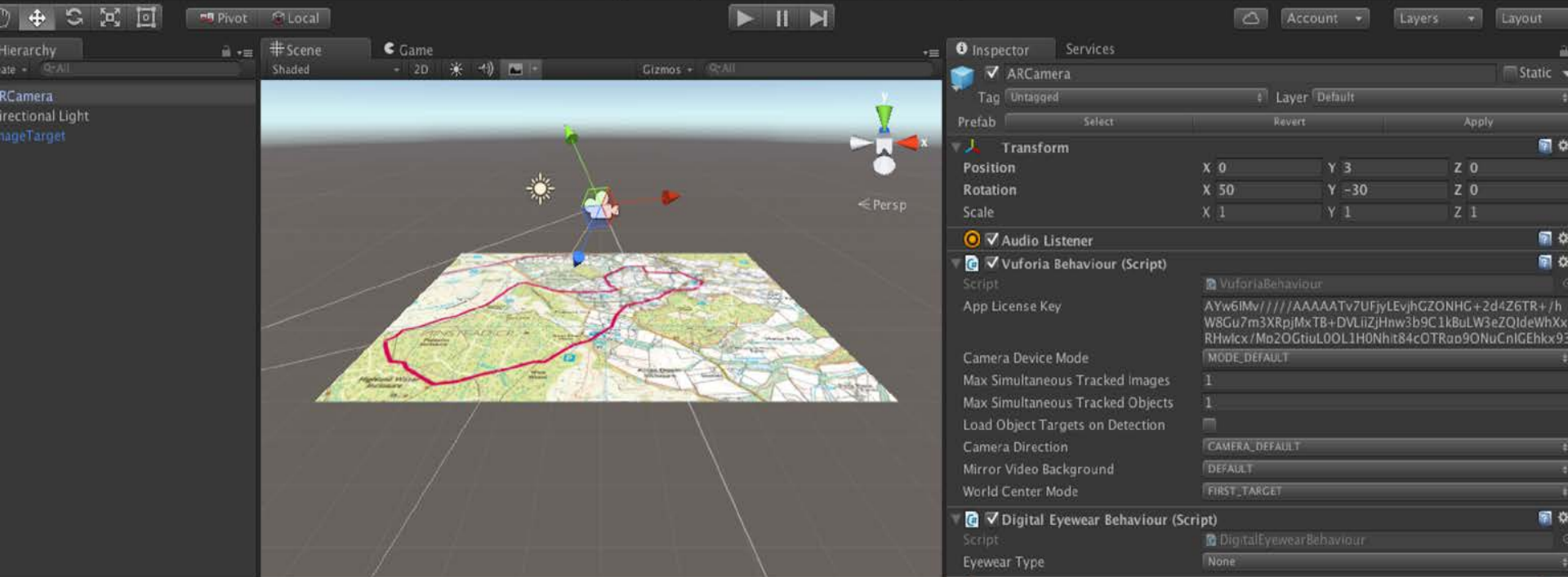
- Hierarchy Panel (top left):** Lists objects in the scene, including 'playing*', 'Main Camera', 'Directional Light', 'ARCamera', 'ImageTarget', 'Terrain', and 'lunar lander no foil_carbajal'.
- Inspector Panel (top right):** Shows the 'Transform' component for the selected object with Position (X: -0.498, Y: 0, Z: -0.501) and Scale (X: 0.000459756, Y: 0, Z: 0). Below it are 'Terrain' settings.
- Terrain Settings Panel (middle right):**
 - Base Terrain:** Draw (checked), Pixel Error (1), Base Map Dist. (131), Cast Shadows (unchecked), Material (Built In Standard), Reflection Probes (Render Probes), Thickness (1).
 - Tree & Detail Objects:** Draw (checked), Bake Light Probes For Trees (checked), Detail Distance (25), Collect Detail Patches (checked), Detail Density (1), Tree Distance (2000), Billboard Start (50), Fade Length (5), Max Mesh Trees (50).
 - Wind Settings for Grass:** Speed (0.5), Size (0.5), Bending (0.5), Grass Tint (red color bar).
 - Resolution:** Terrain Width (1200), Terrain Length (1200), Terrain Height (150), Heightmap Resolution (2049), Detail Resolution (3968), Detail Resolution Per Patch (128), Control Texture Resolution (2048).
- Assets Panel (bottom left):** Shows a folder structure with 'Assets' containing 'Editor', 'Images', 'Materials', 'Plugins', 'StreamingAssets', and 'Vuforia'. A specific asset 'AR-DrapeMa...' is visible in the 'Images' folder.
- Console (bottom):** Displays a red error message: 'TerrainData is missing splat texture 0.'





MARSTON'S

TRADING AND TAVERNING



Inspector Services

ARCamera

Tag Untagged Layer Default

Prefab Select Revert Apply

Transform

Position X 0 Y 3 Z 0

Rotation X 50 Y -30 Z 0

Scale X 1 Y 1 Z 1

Audio Listener

Vuforia Behaviour (Script)

Script VuforiaBehaviour

App License Key AYw6IMv/////AAAAATv7UFjyLEvjhGZONHG+2d4Z6TR+/hW8Gu7m3XRpiMxTB+DVLiZjHnw3b9C1kBuLW3eZQIdeWhXxRHwCw/Ip2OGtiuL00L1H0Nhit84cOTRap90NuCnIGEhkx93

Camera Device Mode MODE_DEFAULT

Max Simultaneous Tracked Images 1

Max Simultaneous Tracked Objects 1

Load Object Targets on Detection

Camera Direction CAMERA_DEFAULT

Mirror Video Background DEFAULT

World Center Mode FIRST_TARGET

Digital Eyewear Behaviour (Script)

Script DigitalEyewearBehaviour

Eyewear Type None

Default Initialization Error Handler (Script)

Script DefaultInitializationErrorHandler

Database Load Behaviour (Script)

Script DatabaseLoadBehaviour

Load Marstons Database

Activate

Video Background Manager (Script)

Enable video background

Overflow geometry STENCIL

Matte Shader ClippingMask

Smart Terrain Tracker Behaviour (Script)

Start Automatically

Device Tracker Behaviour (Script)

Asset Labels

AssetBundle None None

Project Console

Assets > Vuforia > Scripts >

BackgroundP... CloudRecoB... CylinderTarg... DatabaseLoa... DefaultInitial... DefaultSmart...

DefaultTrack... DeviceTracke... DigitalEyw... GLErrorHand... HideExcessA... ImageTarget...

Assets

- Editor
- Plugins
- StreamingAssets
- Vuforia
 - Editor
 - Fonts
 - Materials
 - Prefabs
 - Resources
 - Scripts
 - Shaders
 - Textures

Failed to connect to player ip: 172.16.4.72, port: 55000

Paths



Contours



Surface Geology



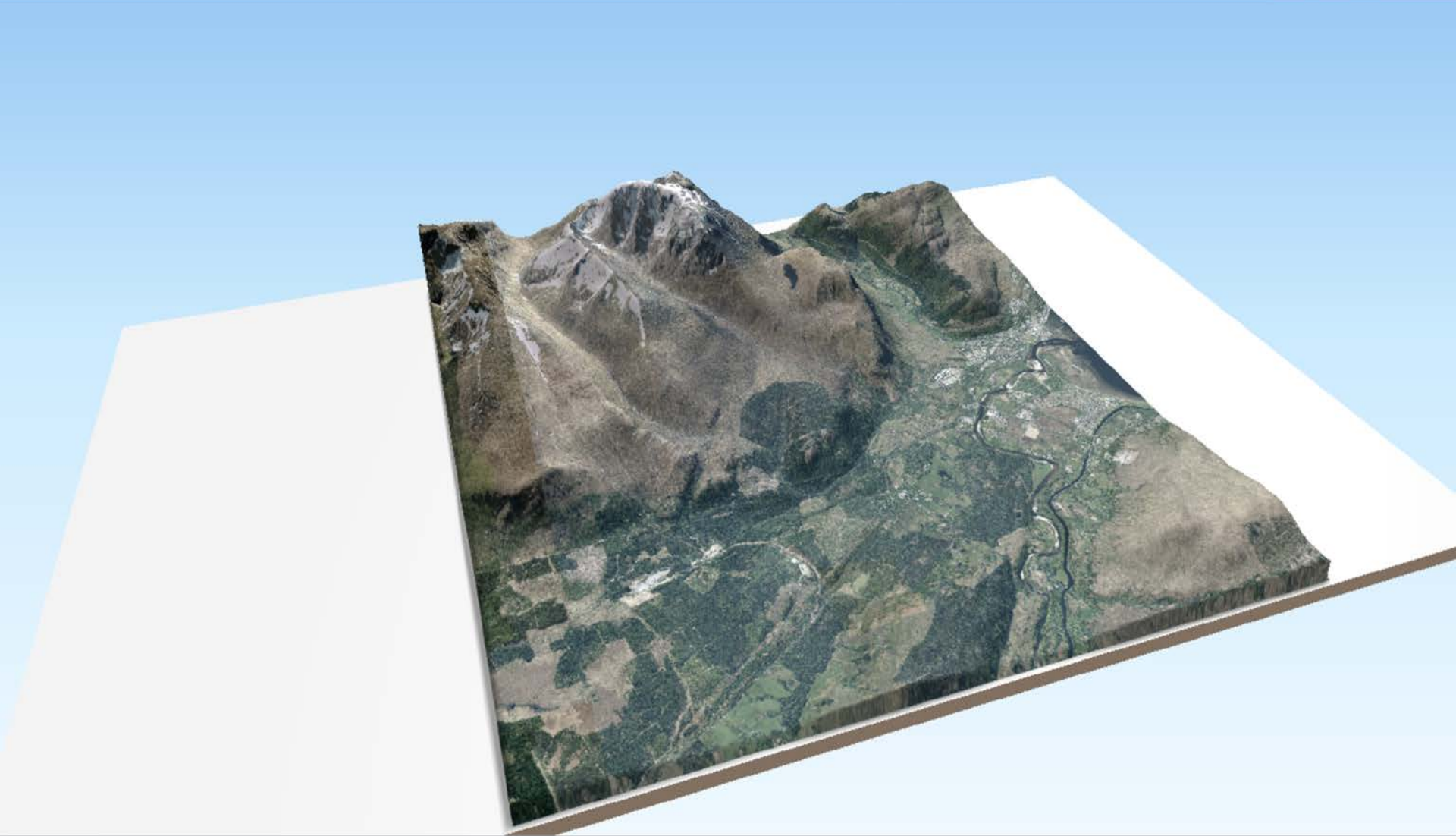
NDVI



TRACKING (OFF)



TRACKING (OFF)





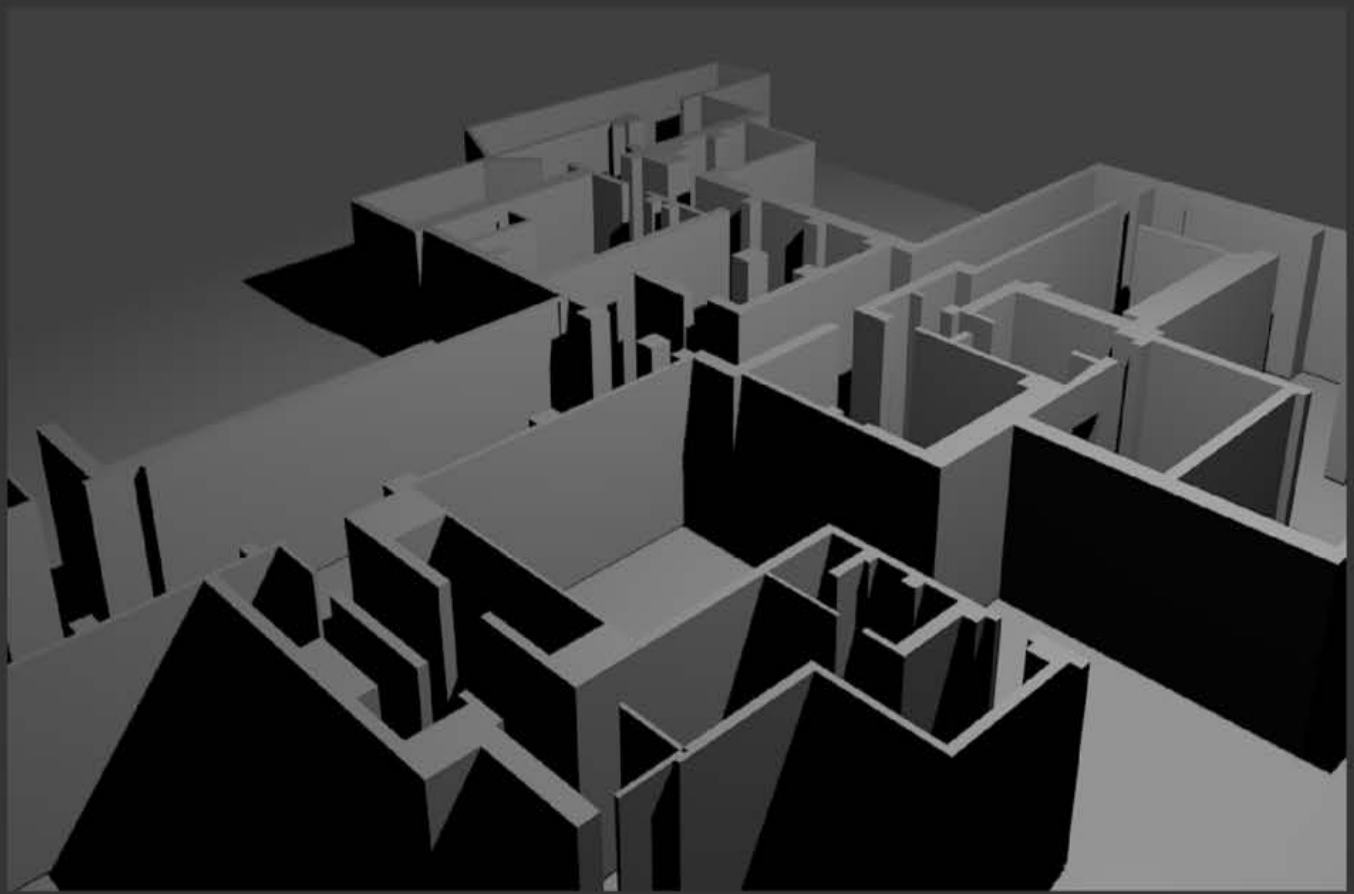


SHOREDITCH
TOWN HALL
OLD STREET, LONDON, EC1

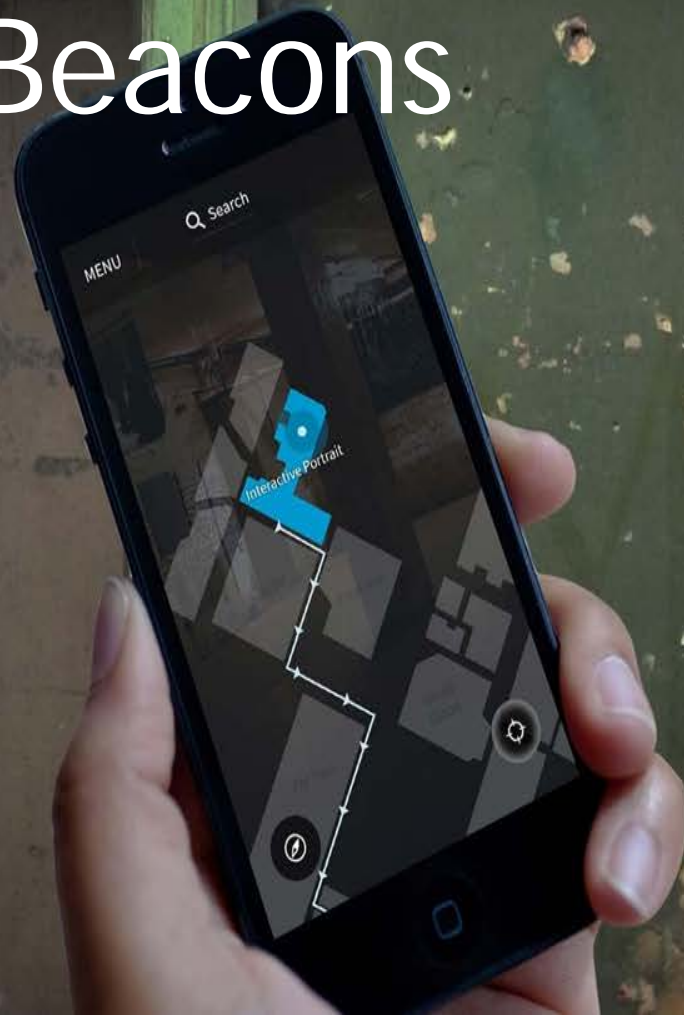
BASEMENT

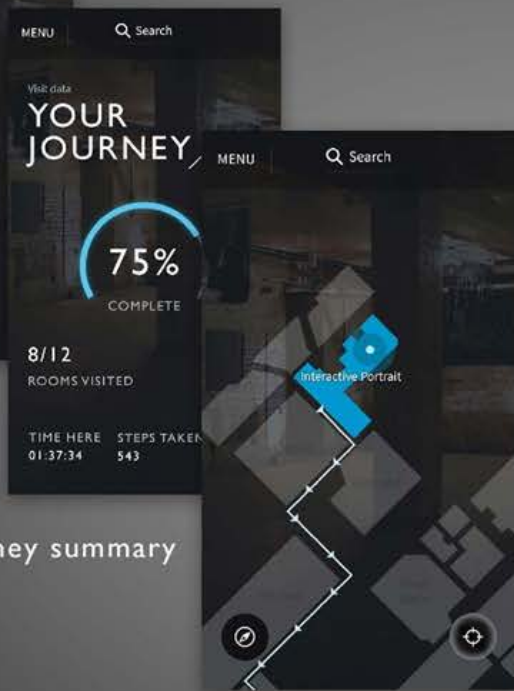






Our first foray into navigation in virtual space using iBeacons





Journey summary

Route from current location to an exhibit



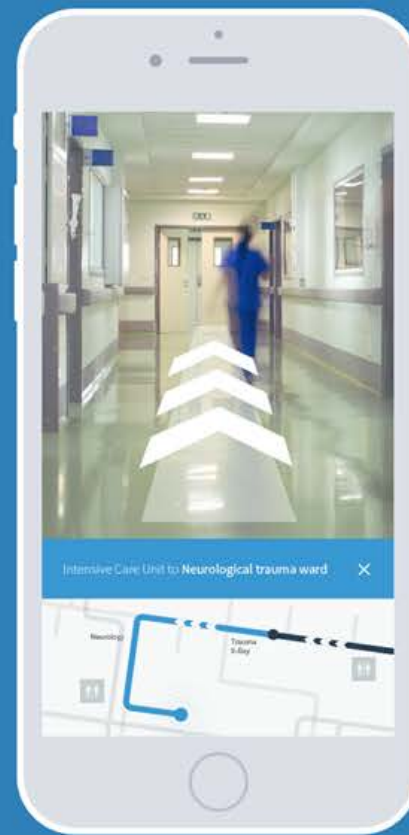
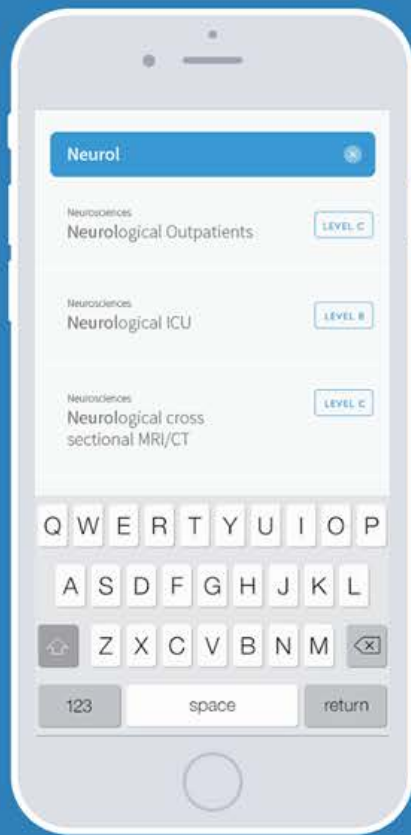
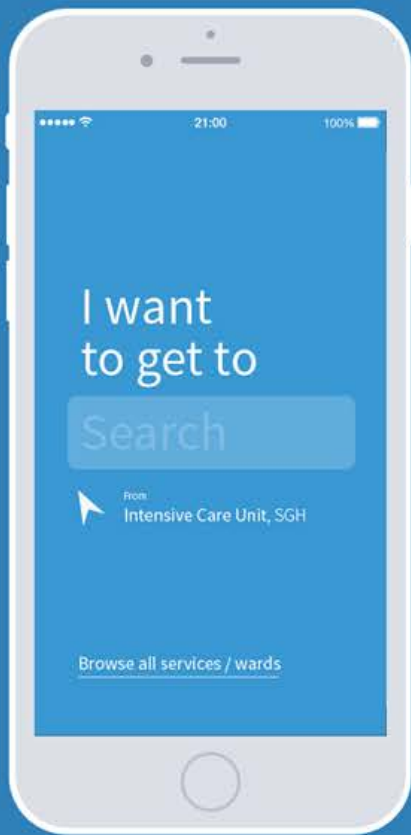
Default isometric map



Exhibit information

How long a visitor has been in each room

D I G
I T A
L S H
O R E
D I T
C H

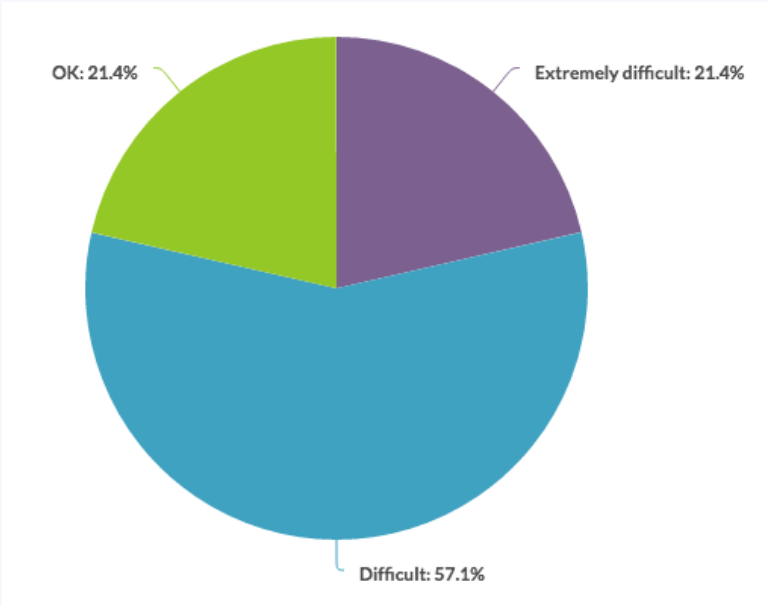




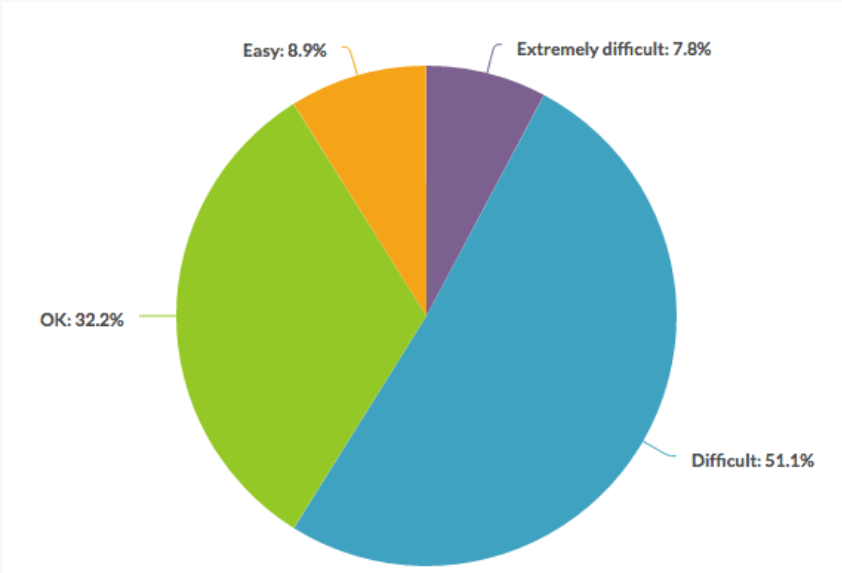
How difficult?



AMOUNT OF DIFFICULTY NAVIGATING HOSPITALS



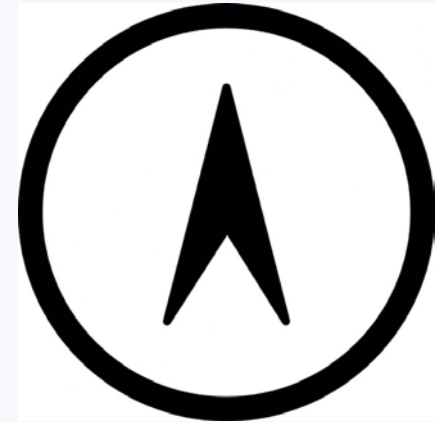
Public



Medical staff

ENHANCING THE SIGNS AUGMENTED REALITY.. SMART SIGNS..

- Smart Signs Placed around the hospital as waypoints during navigation similar to volunteers or info kiosks
- Smart Signs to reveal personalised instructions/map to the patient/staff tied to their calendar events for hospital visits (indoor Waze)
- Smart Signs to be augmented with real time clinic info./delays



 Fiction



Real
Stories 





Thank You

View-Master