



NASA Models

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01

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Overview

Proposed project

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02

Tool

Software tools

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03

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Application

Our implementation

04

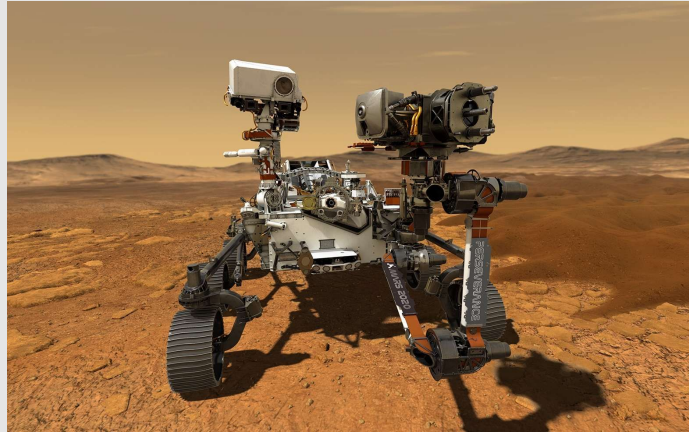
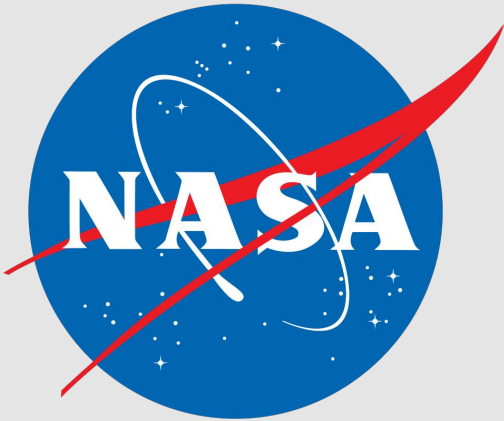
Demo

Our app demo

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★ The objective of the project:

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Developing educational application for
visualizing and controlling NASA rovers



Tools:



The background is a dark blue space-themed illustration. In the top left, there is a white line-art satellite with a central body and two rectangular solar panel arrays. To its right is a small white circle. Further right is a larger white circle containing two short horizontal lines. In the bottom left, there is a small white five-pointed star. In the bottom right, there is a small white four-pointed star. On the right side, a white comet with a long, curved tail is shown. Several other small white circles, some containing two short horizontal lines, are scattered across the background. A large, light gray, irregular blob shape is centered on the slide, serving as a backdrop for the text.

Application

NASA rover displays and controls
multiple rovers on a fixed plane space
using your phone

“.usdz” models (<https://mars.nasa.gov>)

Development Timeline:



1

Week 1

Prototype 1: plane
detection

2

Week 2

Prototype 2: plane
detection and noise

3

Week 3

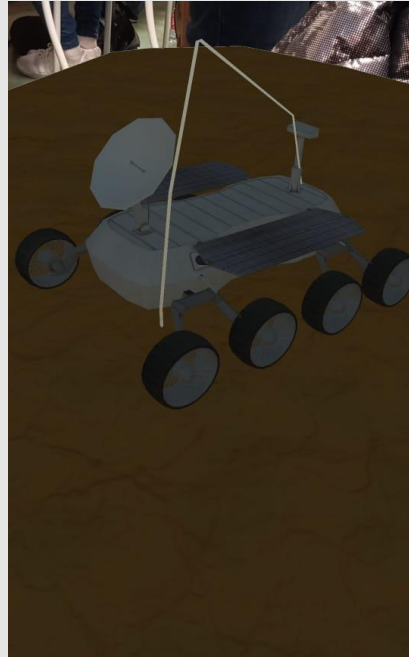
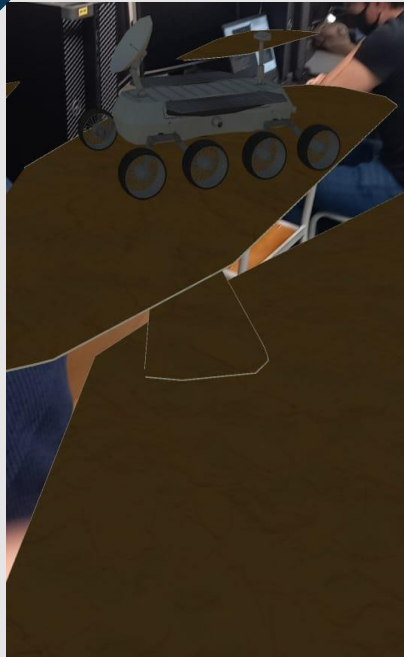
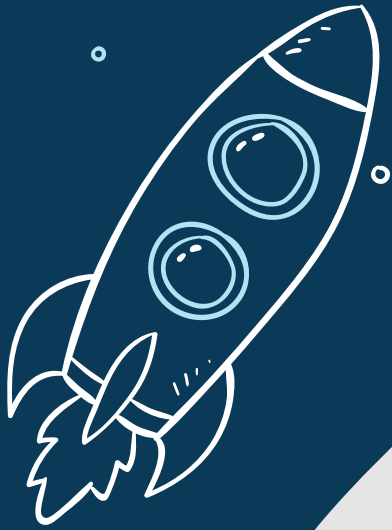
Prototype 3: Swift
implementation of
plane detection

4

Week 4

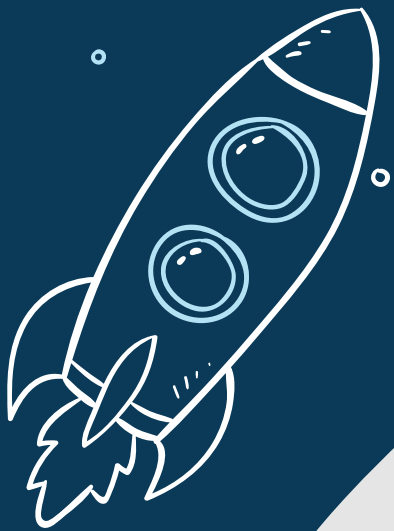
Prototype 3: Swift implementation
of plane detection and scrolling
menu with models

First Model





Second Model

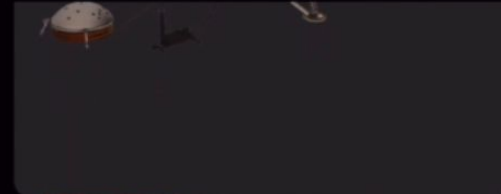


01.

Icon app



NASA Models



Lander

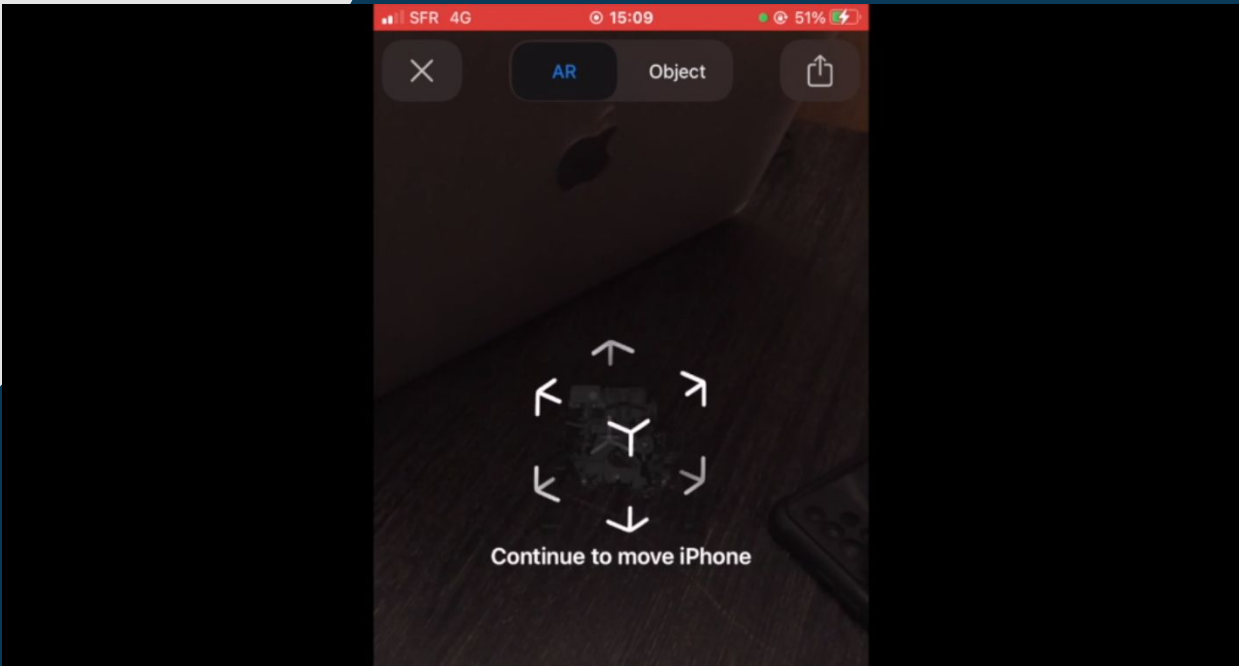


Models

App has variety of models to run and test

Rover



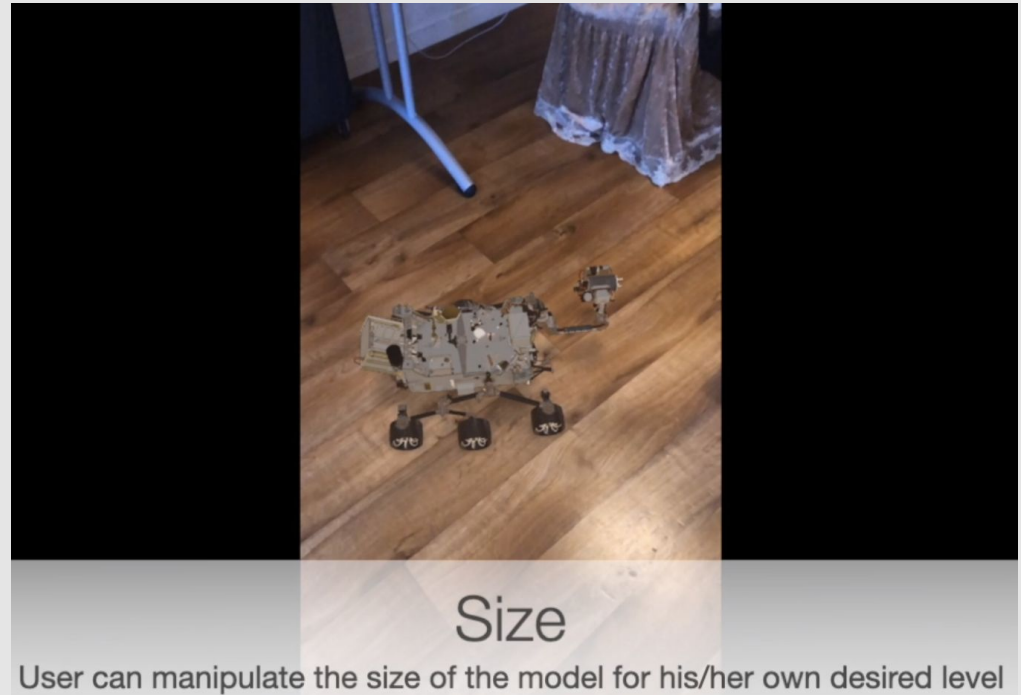


Calibration

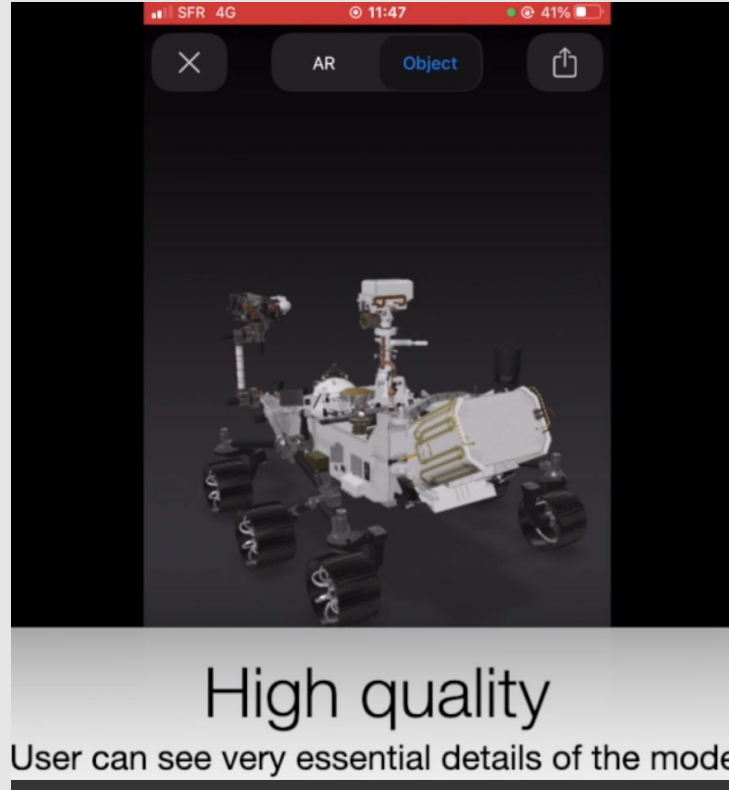
Phone requires different viewpoints to calibrate the camera and detect the depth

What can the user do with the app?

Here you could give a brief example what you can do: manipulate the size of the model and control its position on an on-set plane, previously detected with the help of ARkit



High quality models★



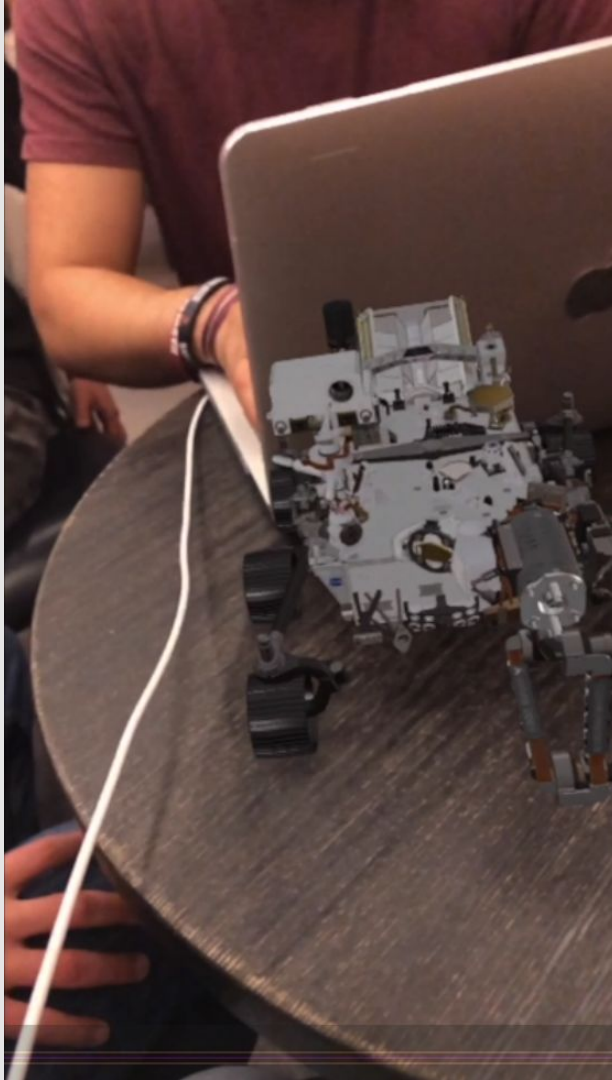
Depth detection



Different surfaces

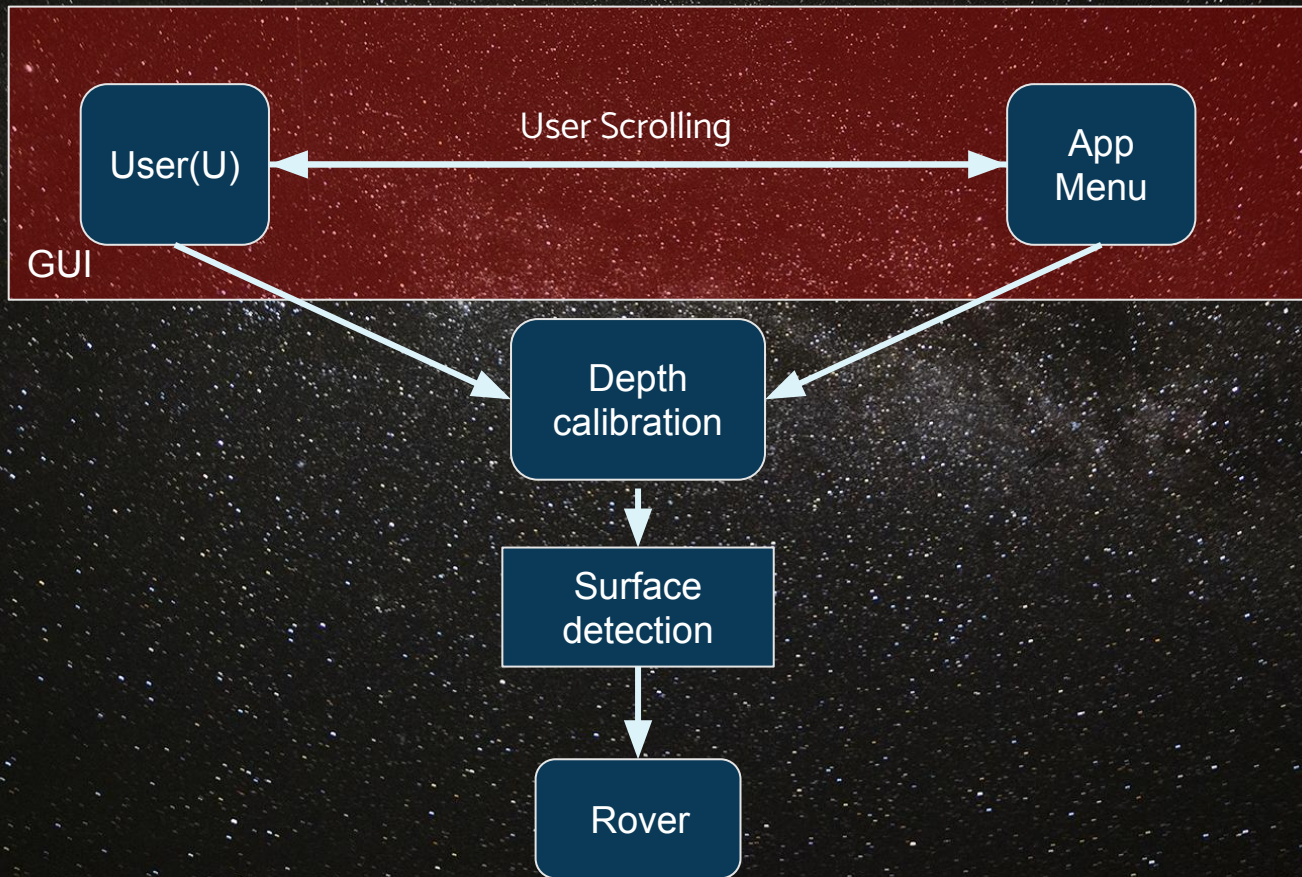
Object moves only on detected surfaces. They can be different according to the environment

Surface Detecting★

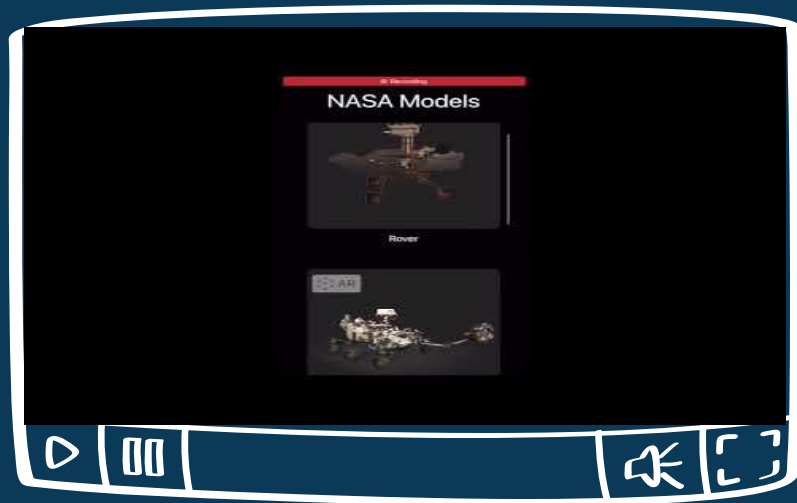


Venus

★Summary★



Application Demo:



References:

- [Mars.nasa.gov](https://mars.nasa.gov)
- stfalconcom.medium.com/augmented-reality-with-swift-5-how-to-start-19118c77dffe
- medium.com/twinkl-educational-publishers/create-your-first-ar-app-with-realitykit-and-swiftui-7c5d1388b5

Thank you for
Your
attention!

