

AR Mural Project



Our Team



Pavan datta
Reddy



Arya
Shetty



Alexander
Clarke



Nicholas
Clarke



Ana
Obradovic

Advisors: Ivan Seskar and Jennifer Shane

This work was supported in part by the NSF REU
program and the donation from nVERSES CAPITAL

Table of contents

01

Abstract

02

Development

03

Result

04

Future Work



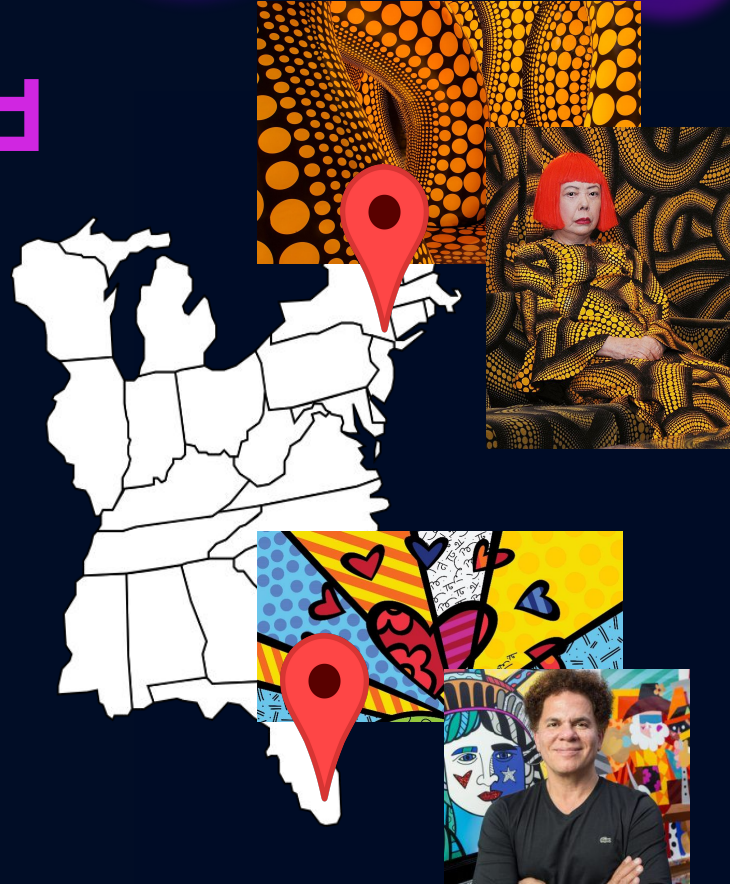


01

Abstract

Project Background

- Create a collaborative, augmented reality art app using unity
- Minimal latency while running app
- Customizable environment
- App to be deployed on Open AR cloud



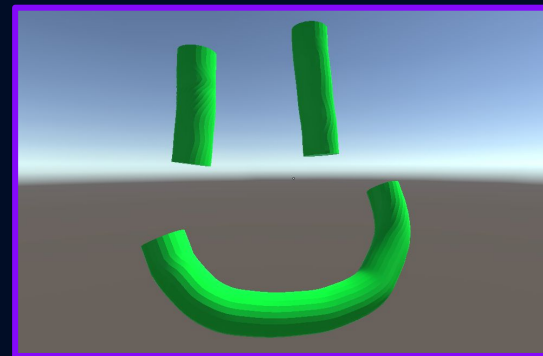
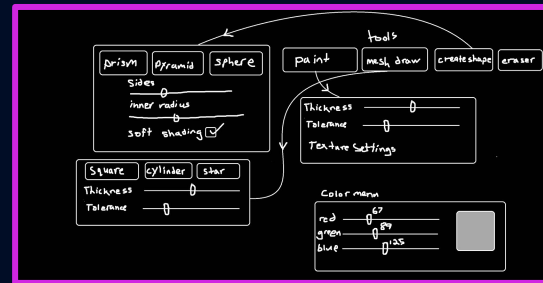
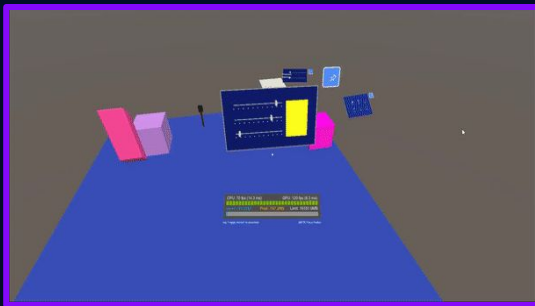
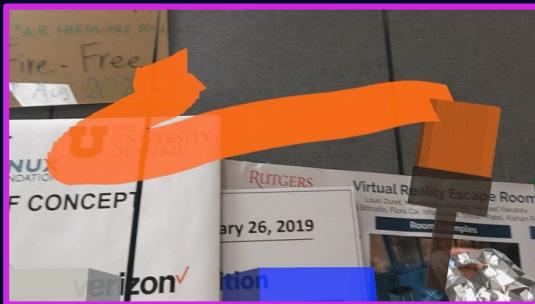


02

Development

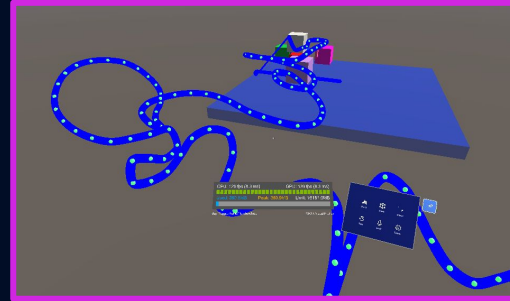
Art Features

- Drawing feature
- Color picker and tool settings
- Mesh generation and object manipulation



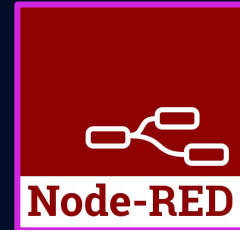
Networking

- JSON
Serialization
- Pub-Sub
Architecture
(MQTT Broker)
- File Server



```
Connected to broker on 10.61.2.31
Test message published.
Received: Test message
Test message published.
Received: Test message
```

Broker Address	<input type="checkbox"/> Encrypted	Port	
10.61.2.31		1884	
<input type="button" value="Connect"/>	<input type="button" value="Disconnect"/>	<input type="button" value="Test Publish"/>	<input type="button" value="Clear"/>

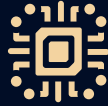


Software challenges



Hololens

Configuring the headset
for unity



Unity c#

Learning unity UI and
programming in c#



Merging

Problems with gitlab and
creating prototype app

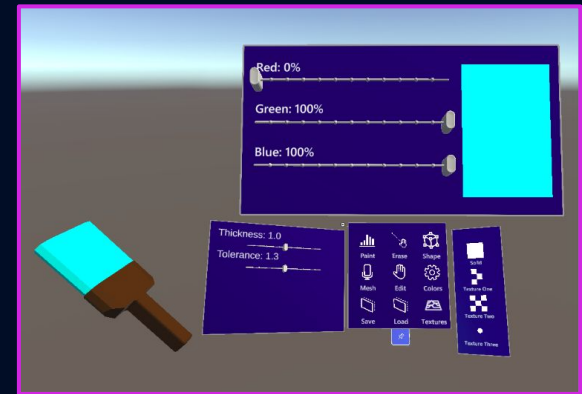
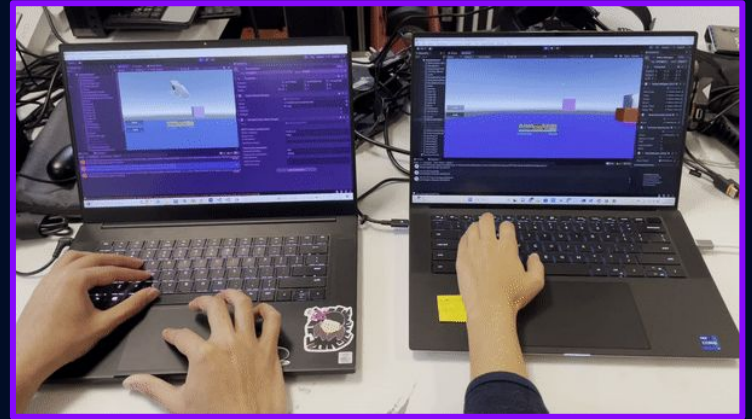


03

Results

Prototype

- Fundamental tools to draw in 3D space
- Collaborative environment that allows users to create together
- Import/Export structure for GLB files





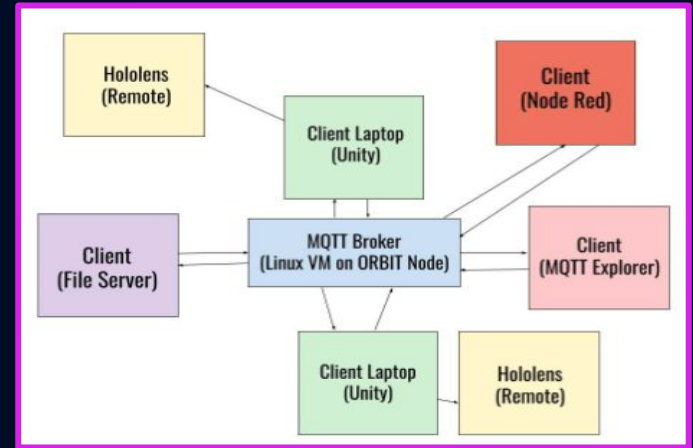


04

Future Work

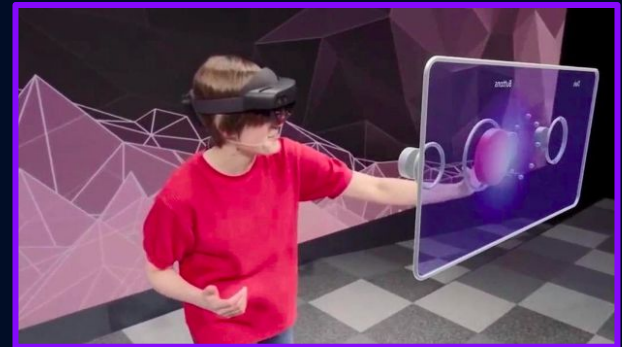
Future Features

- Implement AR Cloud utility
 - Allow users to render their art in different locations.
- Optimize JSON data usage to lower latency
- Create undo button for easier deletion



Practical Application

- Program deploys on PC
- Future mobile implementation
 - AR Cloud will allow anyone to view artwork in real world
 - On-the-go



Demo Testing

