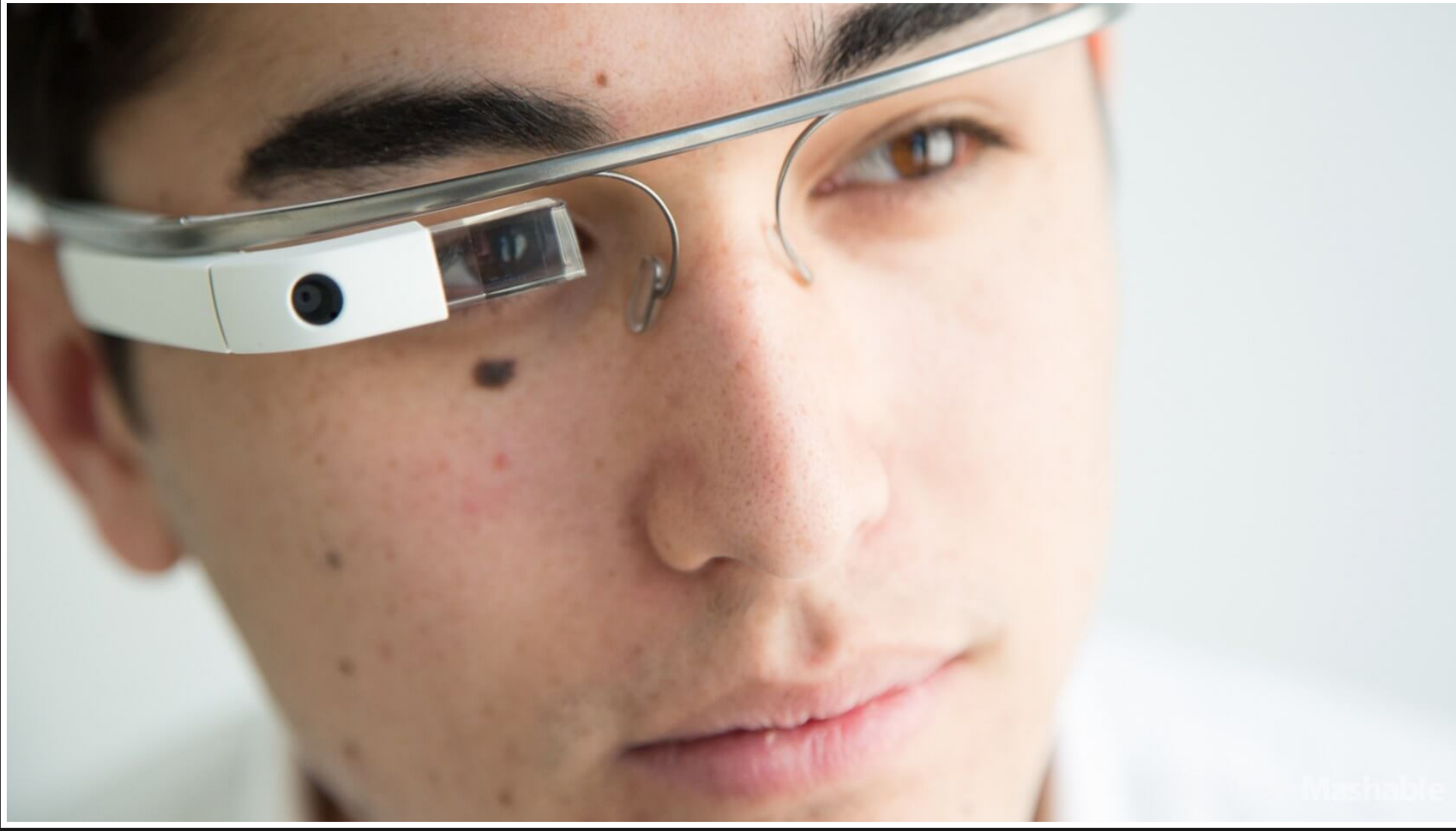
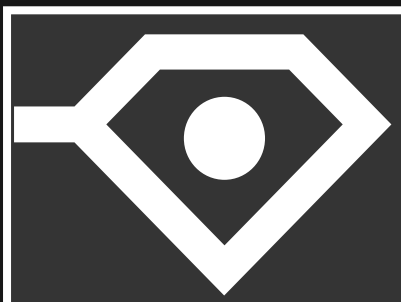
HOW TO BUILD JAVASCRIPT-POWERED SMARTGLASSES WITHOUT ANY SOLDERING

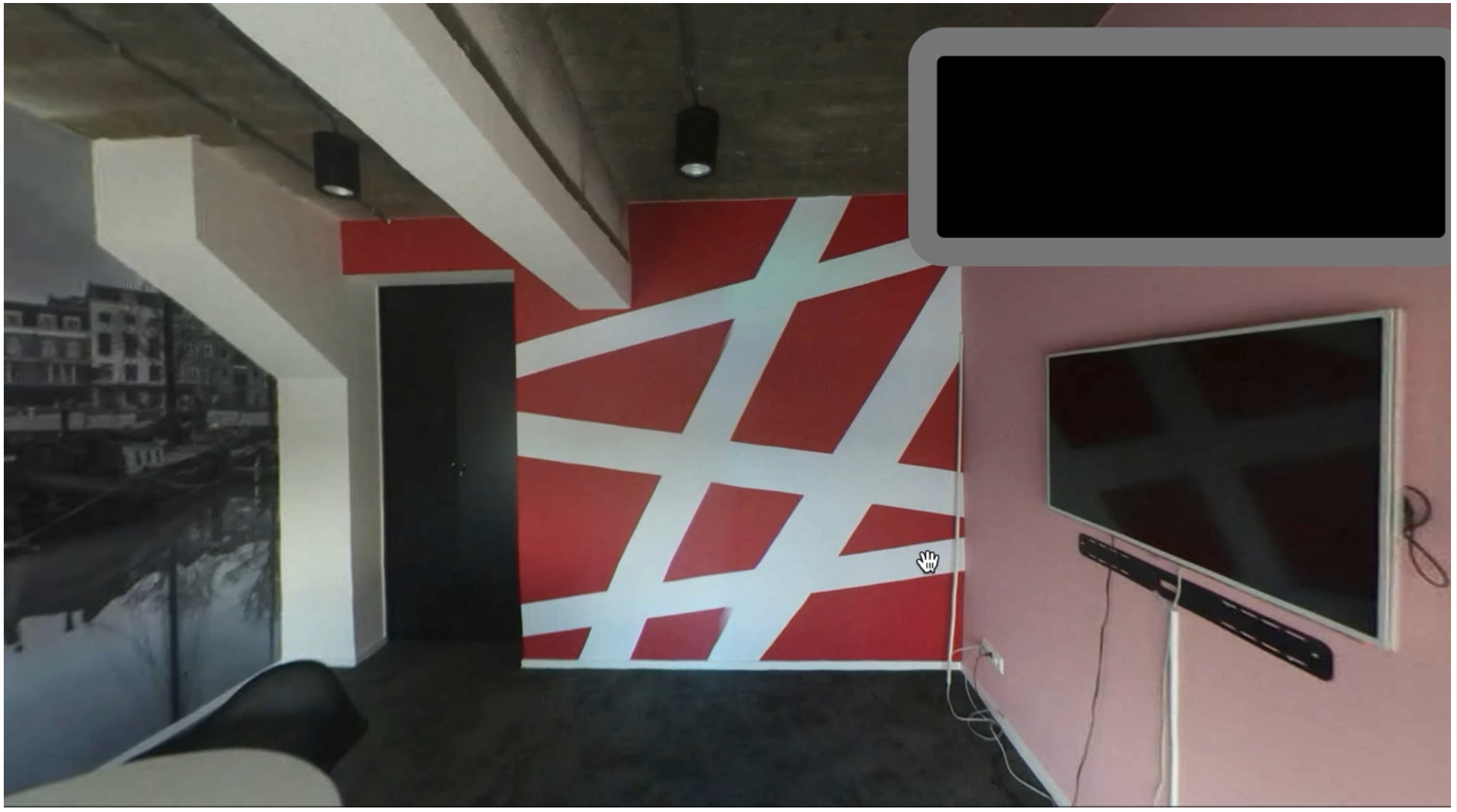
INTRODUCING: SMARTGLASSES!


Mashable



Gemvision

Augmented reality solutions



VUZIX

UZIX

KEEP
CALM
AND
DO IT
YOURSELF

RECIPE FOR SMARTGLASSES

- Vufine

VUFINE

- Inexpensive wearable display
- Acts as a HDMI display
- For camera, mobile, PC

- Vufine

- Vufine
- Raspberry Pi

RASPBERRY PI

- Low cost PC
- Credit-Card-Sized
- Several available models

- Vufine
- Raspberry Pi

- Vufine
- Raspberry Pi
- Powerbank

POWERBANK

RUBEYE

WHAT IS RUBEYE?

WHAT IS RUBEYE?

- A narcissist name for a project

WHAT IS RUBEYE?

- A platform meant for wearables

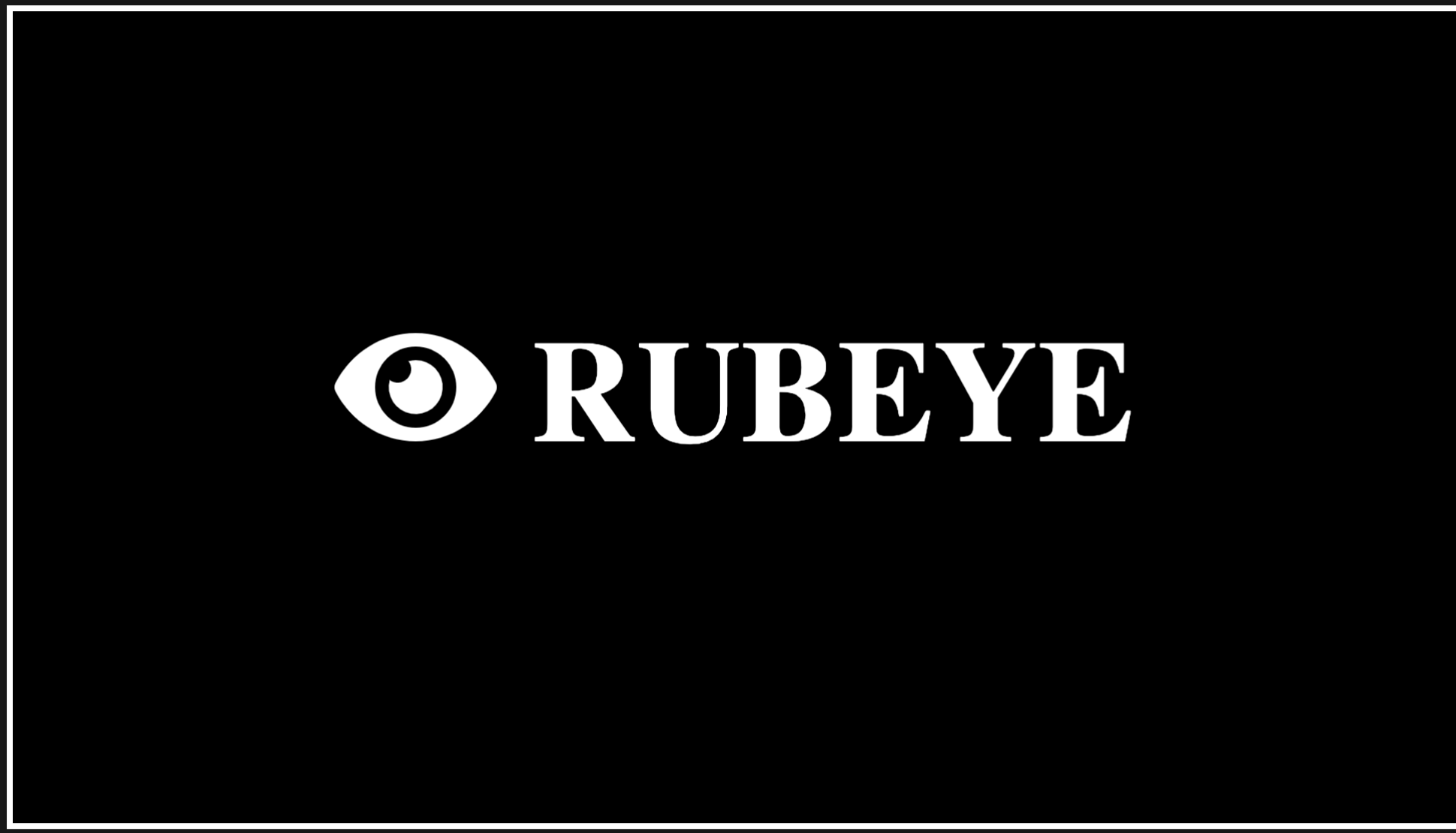
WHAT IS RUBEYE?

- A platform meant for wearables
- Focus for prototyping

WHAT IS RUBEYE?

- A platform meant for wearables
- Focus for prototyping
- Run entirely on web technology

DISPLAY APP



SINGLE-PAGE APPLICATION

```
#!/bin/bash

# Run this script in display 0 - the monitor
export DISPLAY=:0

# Hide the mouse from the display
unclutter &

# Run Chromium and open tabs
/usr/bin/chromium-browser --kiosk http://localhost:8080 &

# Start the kiosk loop. This keystroke changes the Chromium ta
# To have just anti-idle, use this line instead:
# xdotool keydown ctrl; xdotool keyup ctrl;
# Otherwise, the ctrl+Tab is designed to switch tabs in Chrome
```

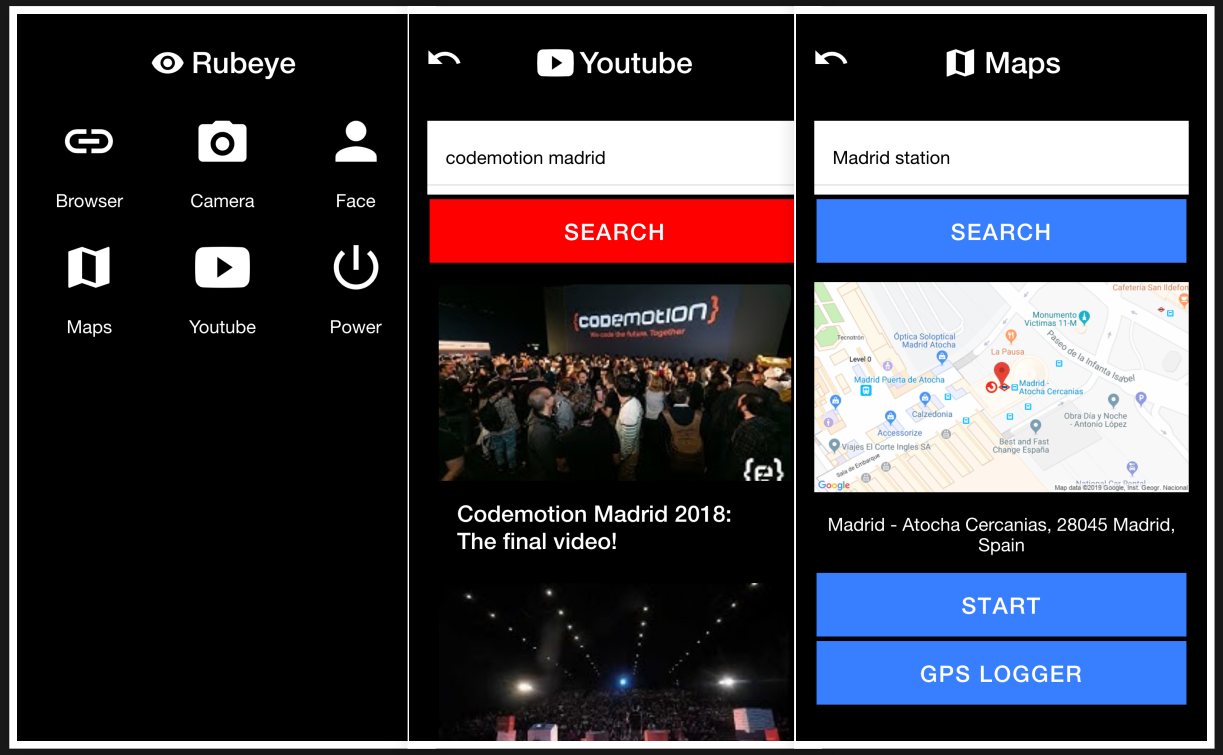
CHROME IN KIOSK MODE

```
<script>
    // %2F
  export default {
    name: 'CameraApp',
    props: {
      src: String,
    },
    mounted: function () {
      navigator.mediaDevices.getUserMedia({video: true})
          .then((stream) => {
            this.$refs.video.srcObject = stream;
            this.stream = stream;
          })
          .catch((error) => {
            console.log("Something went wrong!", error);
```

APPS

- Vufine
- Raspberry Pi
- Powerbank

- Vufine
- Raspberry Pi
- Powerbank
- Input?

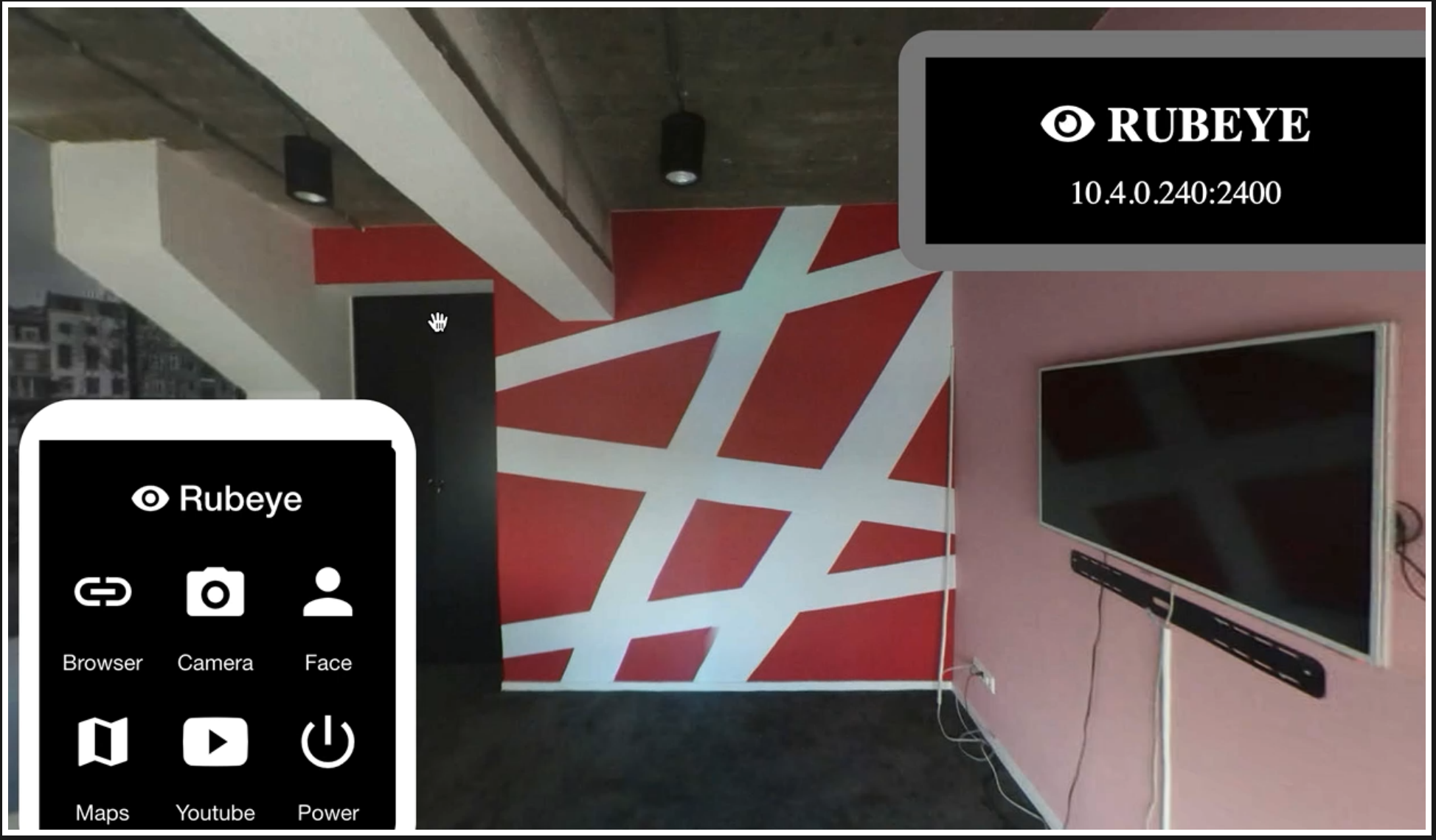


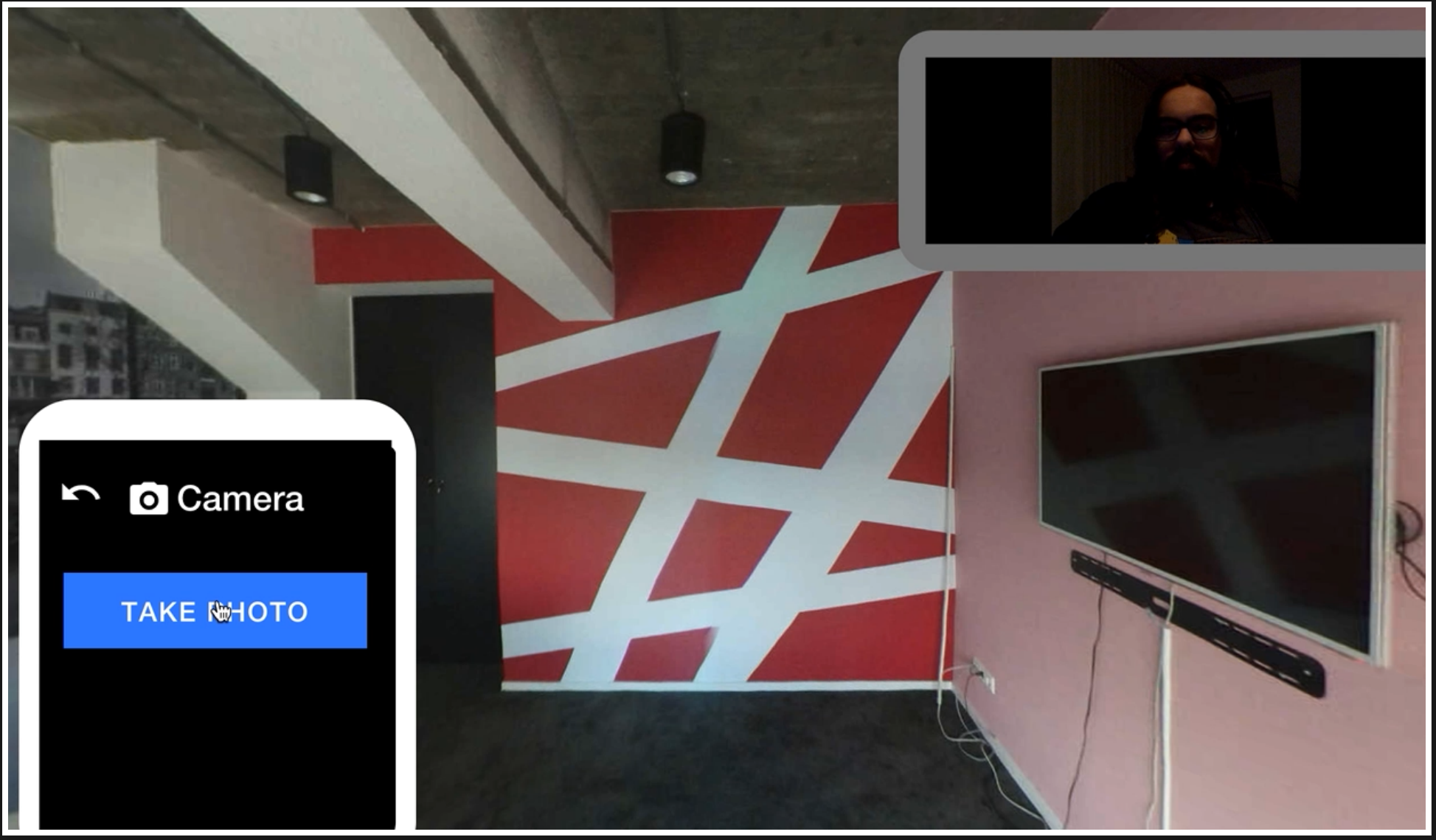
REMOTE WEBAPP

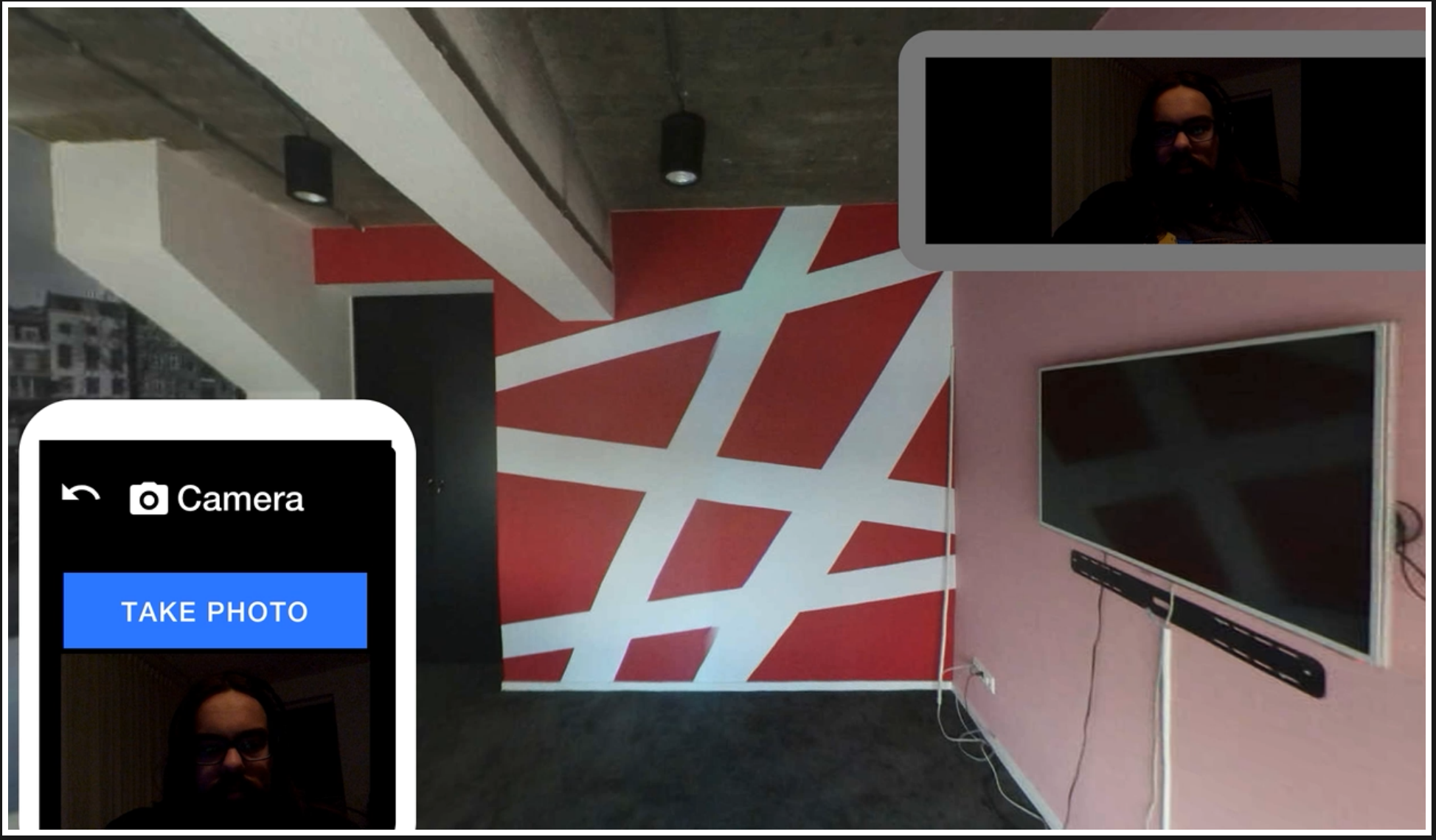
COMMUNICATES VIA SOCKET.IO

DEMO-TIME

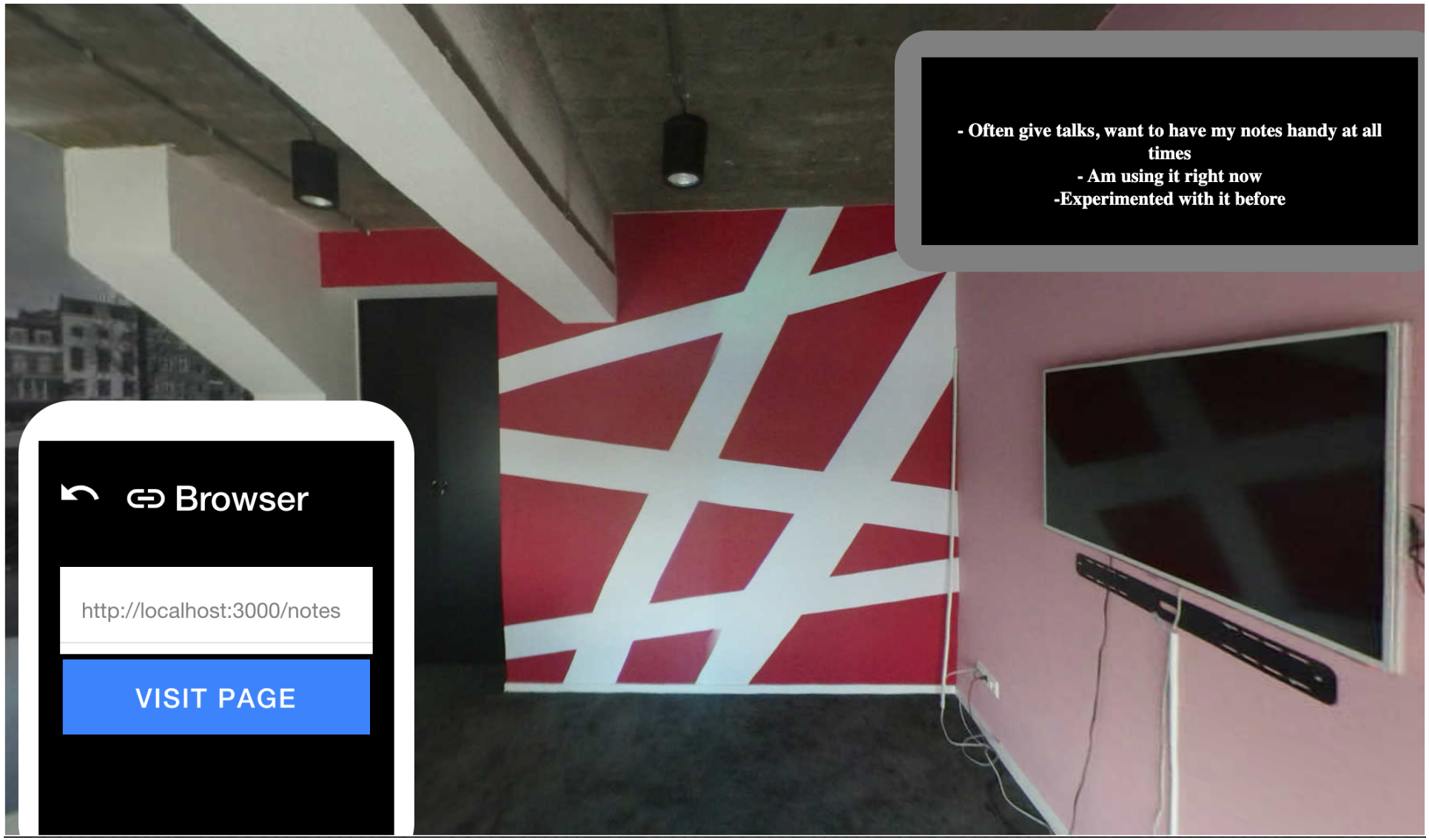
CAMERA APP


RUBEYE
10.4.0.240:2400
Rubeye
Browser
Camera
Face
Maps
Youtube
Power


Camera
TAKE PHOTO

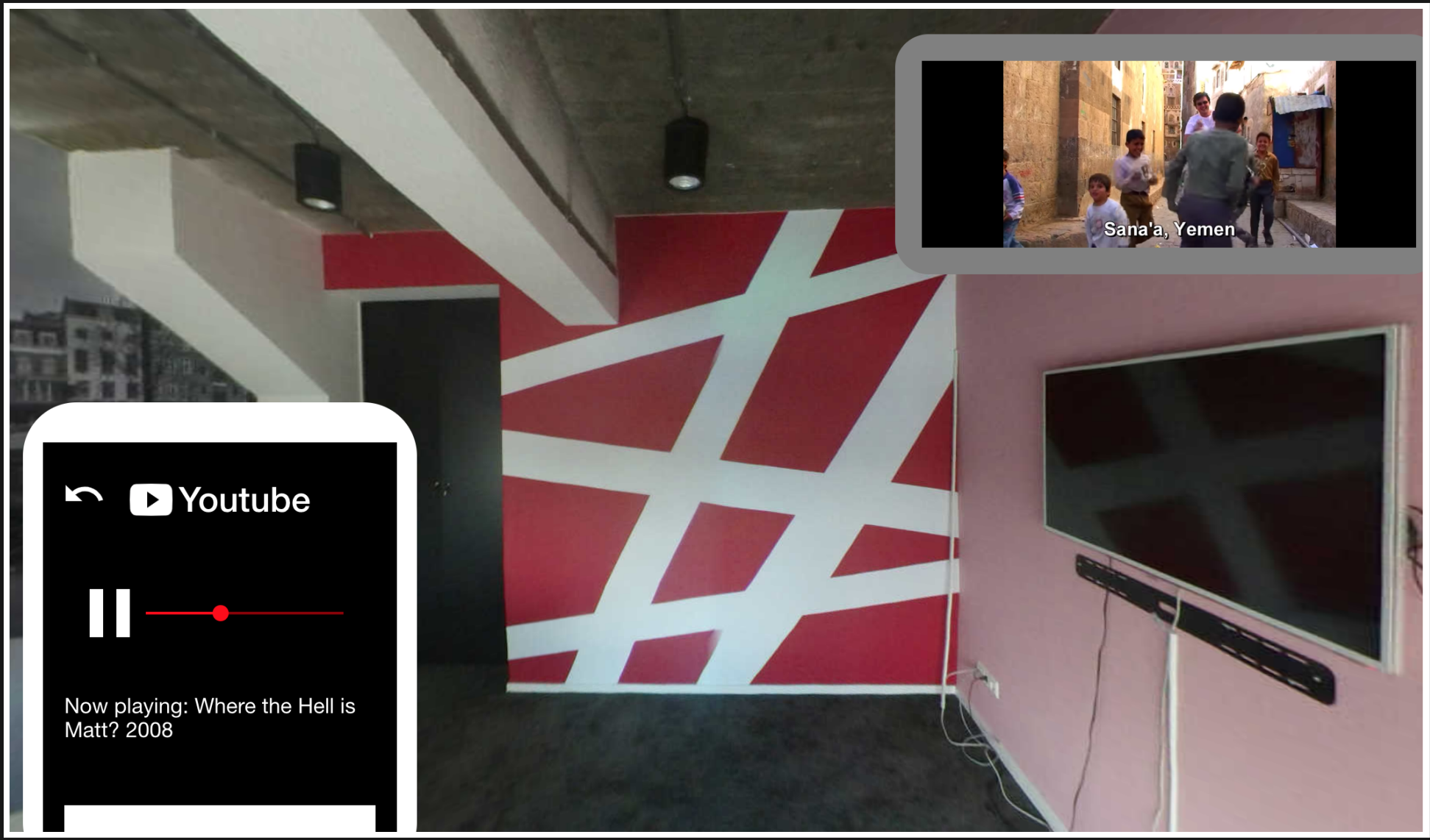

Camera
TAKE PHOTO

OTHER APPS

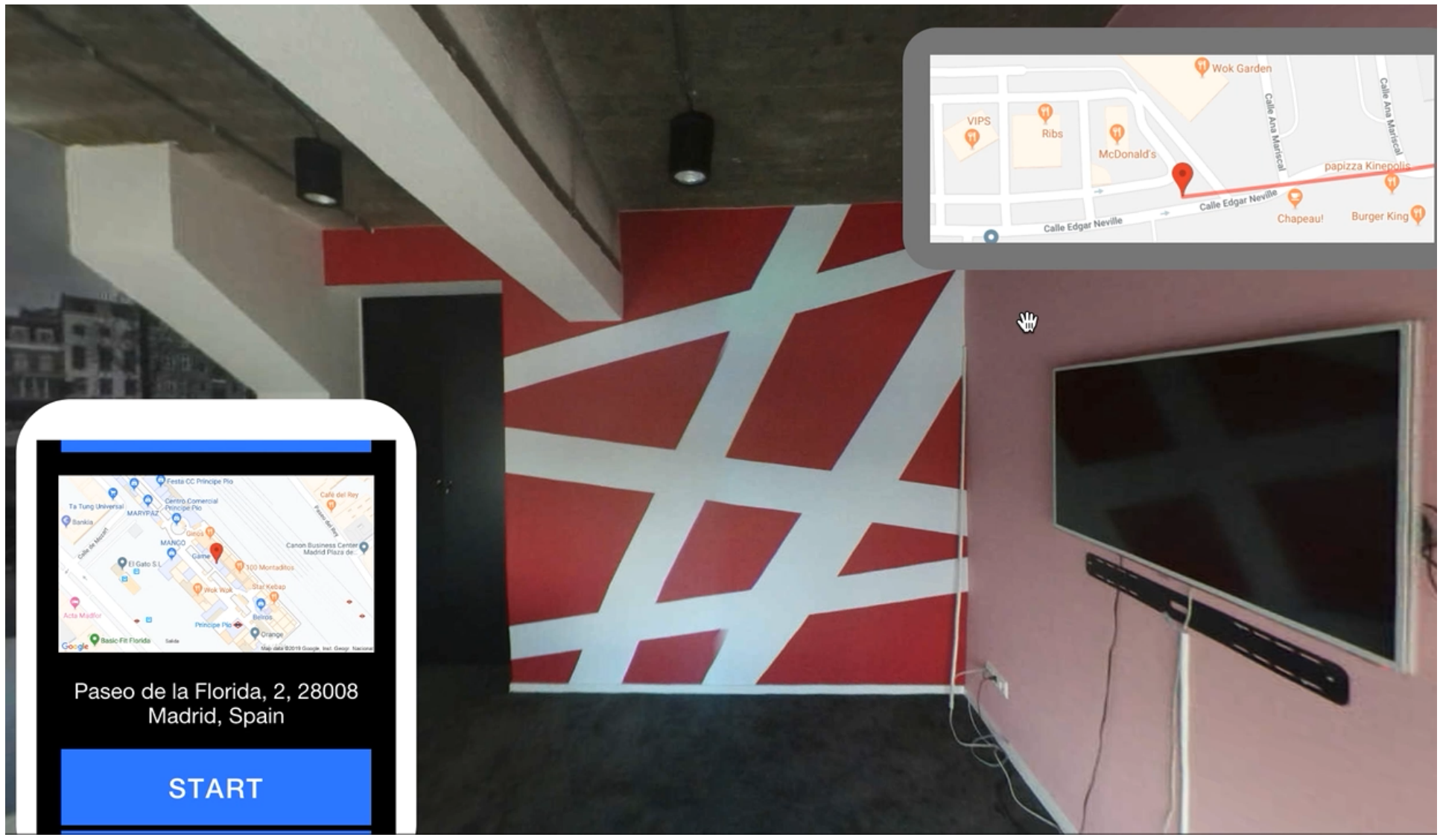


BROWSER
(To serve presentation notes)

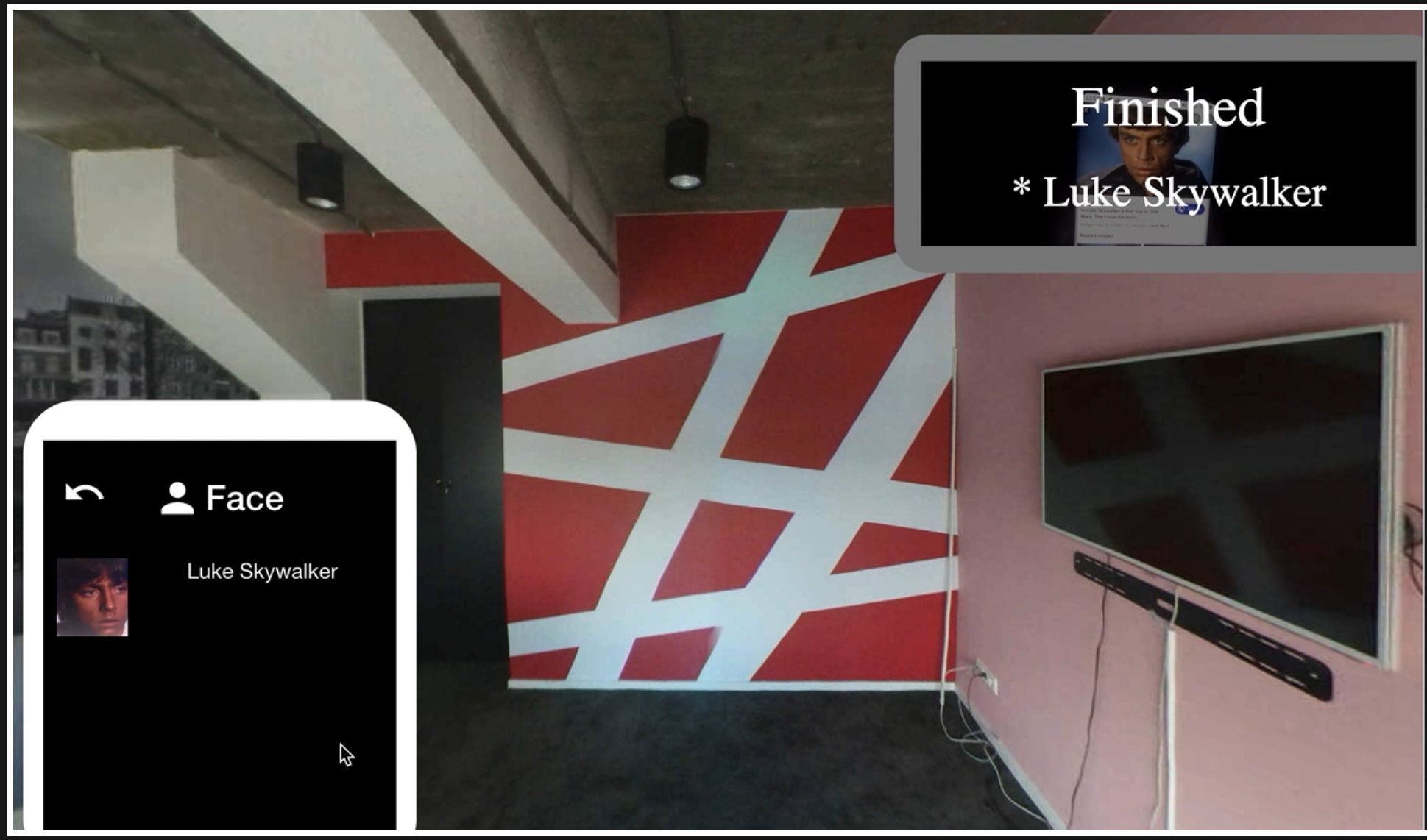
fronteers
UNIX



YOUTUBE


Wok Garden
VIPS
Ribs
McDonald's
Calle Ana Mariscal
Calle Ana Mariscal
papizza Kinepolis
Calle Edgar Neville
Calle Edgar Neville
Chapeau!
Burger King
Paseo de la Florida, 2, 28008
Madrid, Spain
START

GOOGLE MAPS



FACE RECOGNITION
(using face-api.js)

FROM PROTOTYPE TO PLATFORM

RUBEYE V2

RUBEYE V2

- Low-barrier approach to wearables

RUBEYE V2

- Low-barrier approach to wearables
- Ready for production?

RUBEYE V2

- Low-barrier approach to wearables
- Ready for production?
- Web-based and Framework agnostic

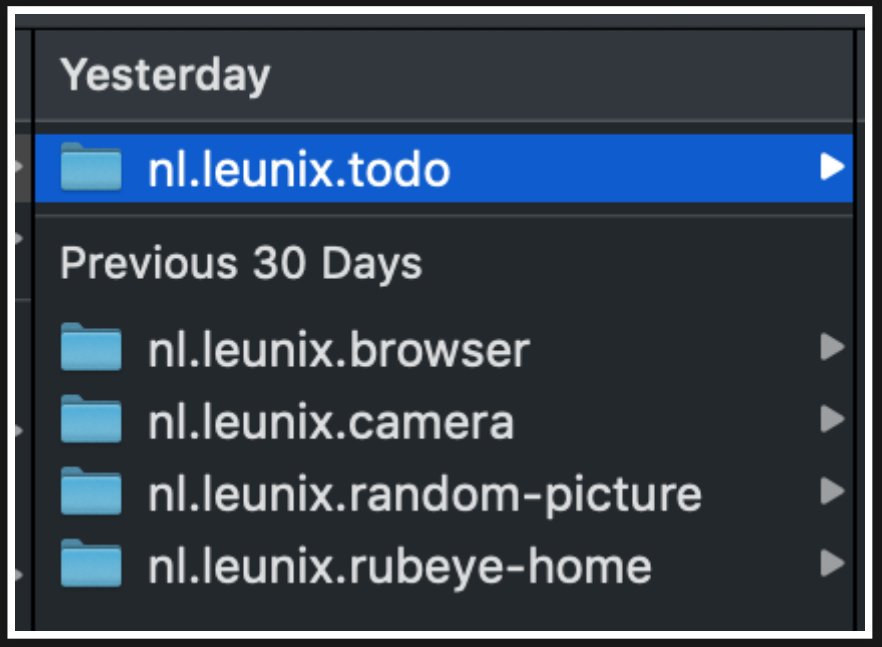
RUBEYE V2

- Low-barrier approach to wearables
- Ready for production?
- Web-based and Framework agnostic
- Streamlined remote controls

HOW TO BUILD A RUBEYE APP

EXAMPLE: TODO LIST

- Show items
- Add item
- Remove item



CREATE A DIRECTORY

```
module.exports = {
    ionicon: 'list',
    name: 'To-Do',
};
```

ADD A CONFIG FILE

Beautifully crafted open source icons

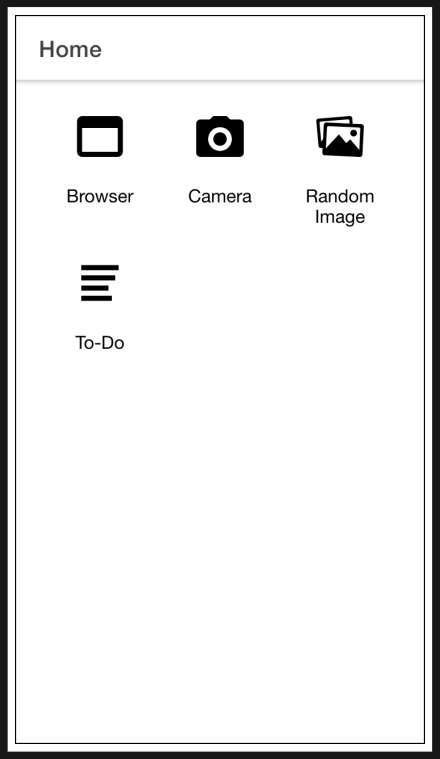
Premium designed icons for use in web, iOS, Android, and desktop apps. Support for SVG and web font. Completely open source, MIT licensed and built by the Ionic Framework team.

Search icons...

App icons

Material style iOS style

IONICON



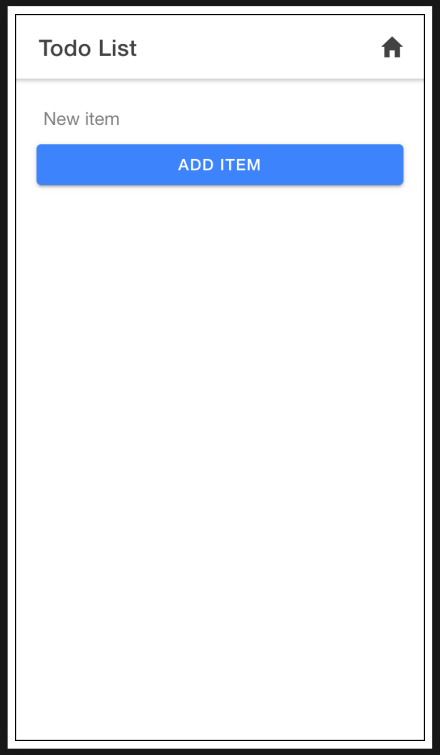
NAME

```html
<!DOCTYPE html>
<html>
<head>
    <style>
        body {
            background-color: darkred;
            color: white;
            font-size: 42px;
            text-align: center;
        }

        li {
            list-style: none;
        }
    </style>
</head>
<body></body>
<script type="text/javascript" src="/rubeye-helper.js"></script>
<script type="text/javascript" src="./script.js"></script>
</html>
```

CREATE AN INDEX.HTML FILE

```
const controls =
  [{
    type: 'input-text',
    id: 'newItem',
    placeholder: 'New item'
  },
  {
    type: 'button',
    text: 'Add item',
    click: form => addItem(form)
  }];

const helper = new RubeyeHelper();
helper.setRemoteControls(controls);
```

SETUP CONTROLS


Todo List
New item
ADD ITEM

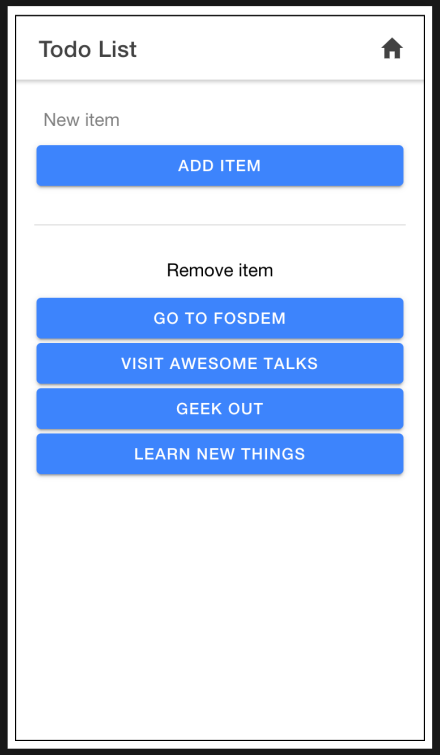
```
// {
//   type: 'input-text',
//   id: 'newItem',
// },
// {
//  type: 'button',
//  click: form => addItem(form)
// }

function addItem(form) {
  const item = form.newItem;
  items.push(item);
  setupControls();
}
```

ADDING ITEM

```
if (items.length > 0) {
  controls.push({ type: 'divider' });
  controls.push({ type: 'title', text: 'Remove item' });

  items.forEach(item => {
    controls.push({
      type: 'button',
      text: item,
      click: () => removeItem(item)
    });
  });
}
```

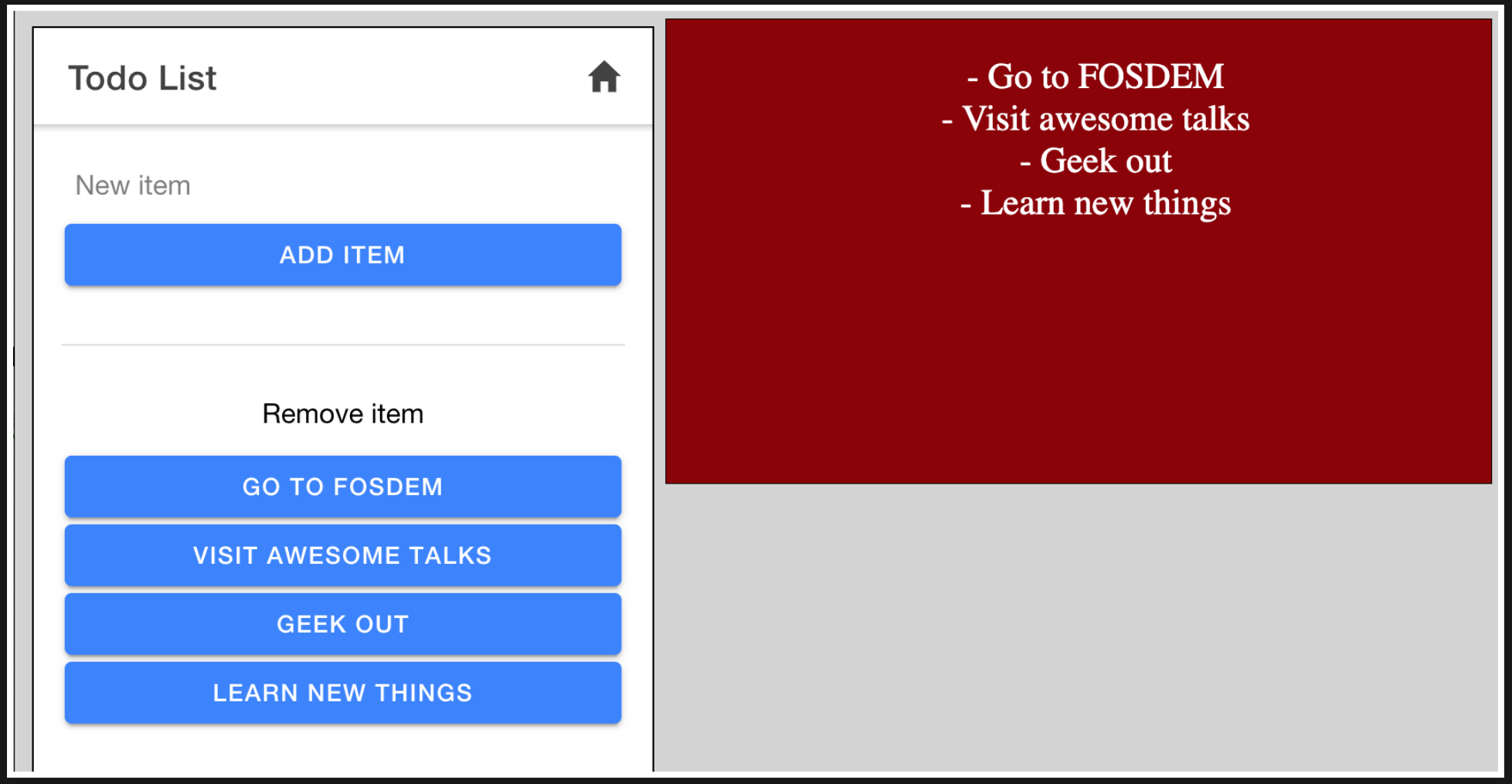
UPDATING CONTROLS

```
[
  {
    "type": "input-text",
    "id": "newItem",
    "placeholder": "New item"
  },
  {
    "type": "button",
    "text": "Add item"
  },
  {
    "type": "divider"
  },
  {
    "type": "title",
```


Todo List
New item
ADD ITEM
Remove item
GO TO FOSDEM
VISIT AWESOME TALKS
GEEK OUT
LEARN NEW THINGS

```
/*
controls.push({
  type: 'button',
  text: item,
  click: () => removeItem(item)
});
*/

function removeItem(item) {
  items = items.filter((search) => search !== item);
  setupControls();
}
```

REMOVING ITEMS


Todo List
New item
ADD ITEM
Remove item
GO TO FOSDEM
VISIT AWESOME TALKS
GEEK OUT
LEARN NEW THINGS
- Go to FOSDEM
- Visit awesome talks
- Geek out
- Learn new things

IN CLOSING...

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- Github: rvdleun
- LinkedIn: rvdleun

Contact me if you'd like access to the repository