UEMCON 2022

Aspects of VR
Three.JS

Phillip G. Bradford

University of Connecticut

Outline

Motivation

Getting started

Motivation

Perhaps the most popular JavaScript graphics library

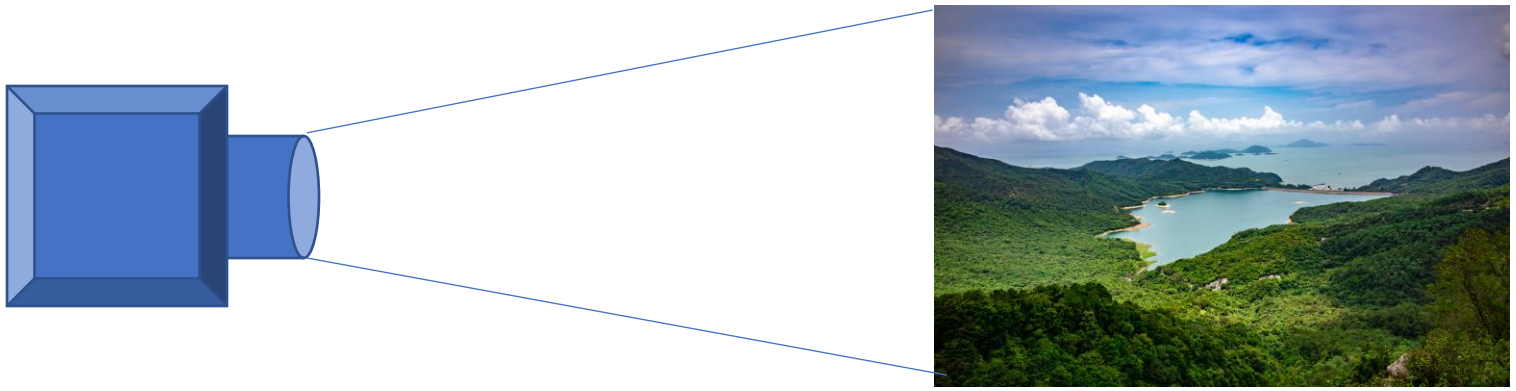
- Based on WebGL
- Leverages graphics cards

Getting started

Scene

Camera

Renderer



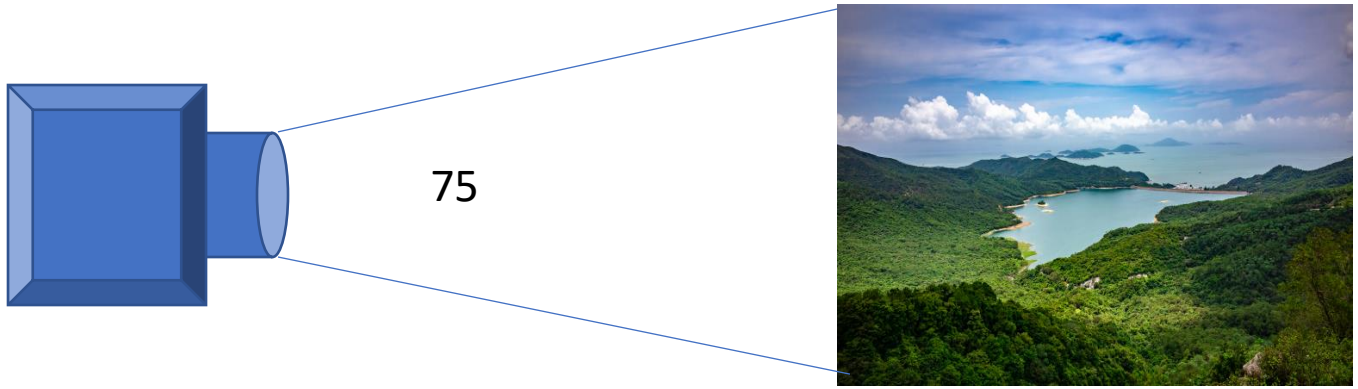
PerspectiveCamera

```
const camera = new THREE.PerspectiveCamera( 75,
                    window.innerWidth / window.innerHeight, 0.1, 1000 );
```

Field of view: 75 degrees

Aspect ratio: width/height

0.1, 1000: Near, far clipping



Set up

Make a directory: js

Download https://threejs.org/build/three.js

Into js

Windows <right-click> save as...

Set up

```
<!DOCTYPE html>
    <html>
      <head> <meta charset="utf-8">
       <title>My first three.js app</title>
           <style> body { margin: 0; } </style>
       </head>
     <body> <script src="js/three.js"></script>
 <script> // Our Javascript will go here. </script>
</body>
</html>
```

WebGLRenderer – uses canvas tag

```
const renderer = new THREE.WebGLRenderer();
renderer.setSize( window.innerWidth, window.innerHeight );
document.body.appendChild( renderer.domElement );
```

Running the renderer

```
function animate() {
        requestAnimationFrame( animate );
        renderer.render( scene, camera );
}

animate();
```

Object3D

https://github.com/mrdoob/three.js

https://threejs.org/docs/#api/en/core/Object3D

THREE.Line

THREE.CircleGeometry

NPM and three

What is node? Npm?

Installing npm, node,…

https://nodejs.org/en/download/

Windows> npx create-react-app test

Example node Three.js system

https://github.com/edwinwebb/three-seed.git

Blender – example from Ubuntu