WebGL and Three.js Fundamentals
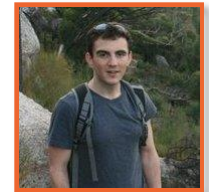
Introduction

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simpleIsBest.co.uk

pluralsight
hardcore dev and IT training
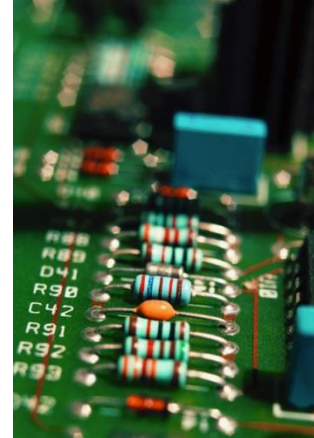
Why Learn Three.JS/WebGL?

Choice!

Reasons to Learn WebGL

- Perform tasks not possible with other technologies

- No Plugins & supported in all modern browsers

- Mobile support

- Shaders!

- DOM integration

- Very open standard

- Driving other browser performance advances

Steep Learning Curve

Multiple Disciplines

Security?

History of WebGL

JavaScript

WebGL

OpenGL ES 2.0

Vladimir Vukićević, Mozilla

http://en.wikipedia.org/wiki/Vladimir_Vuki%C4%87evi%C4%87

Pure WebGL

```
<canvas id='ce'></canvas>

<script>

var canvasElement = document.getElementById('ce');

var ctx = canvasElement.getContext('webgl');

ctx.clearColor(1,0,0,1);

 ctx.clear(ctx.COLOR_BUFFER_BIT);

</script>
```

WebGL Libraries

- **Three.JS (github.com/mrdoob/three.js#readme)**

- Babylon.JS (www.babylonjs.com)

- PhiloGL (www.senchalabs.org/philogl)

- 03D (code.google.com/p/o3d)

- GLGE (www.glge.org)

- J3D (github.com/drojdjou/J3D#readme)

Three.JS Functionality

- **Graphical primitives**

- **Loaders for many popular modelling formats**

- **Useful math & helper functions**

- **Limited effects e.g. fog, particle engine, sprites**

- **Ability to work with shaders**

- **Basic collision detection – Box3 & Raycasting**

- **Large set of examples to refer to**

- **Big community**

Ricardo Cabello (mrdoob)

https://twitter.com/mrdoob
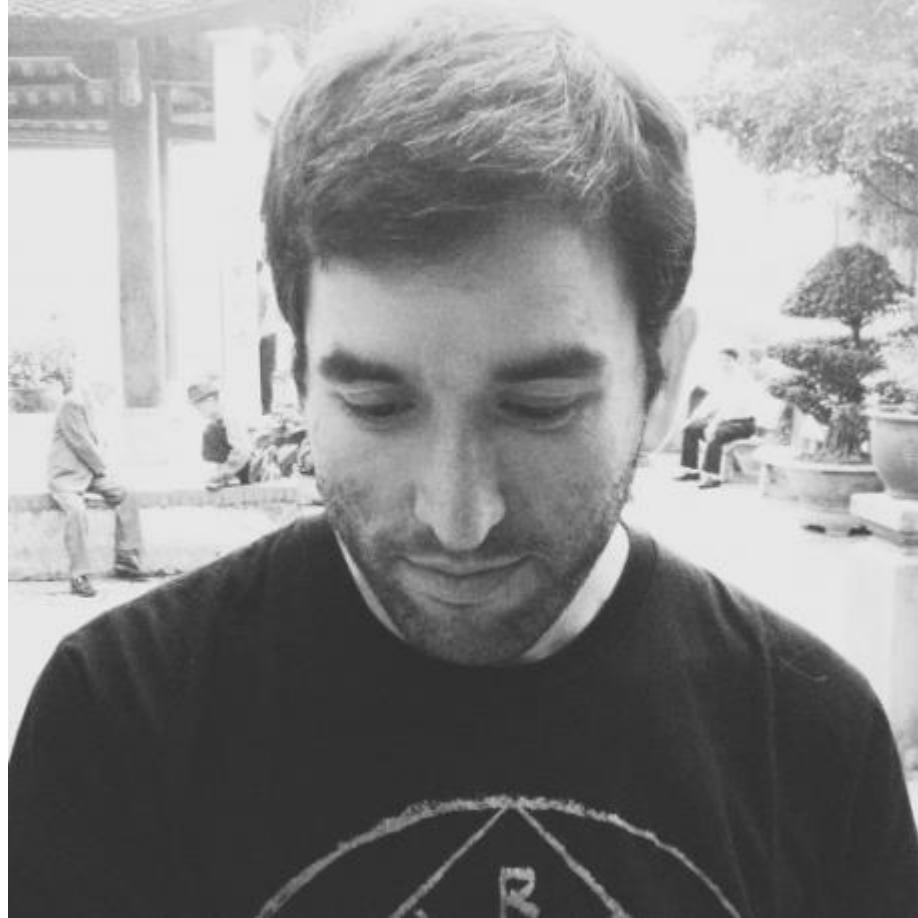
What We Will Cover

- **Introduction to Three.JS**

- **Provide all the basic tools to create applications and games**

- **No maths knowledge assumed**

- **Need knowledge of JavaScript**

- **Examples kept as simple as possible**

What Do You Need to Get Started?

- **Web Browser – Chrome, Firefox or IE11+**

- **Some kind of webserver**

- **A text editor (I like Sublime)**

Useful Links

- **3D Programming for kids book:**
  http://pragprog.com/book/csjava/3d-game-programming-for-kids

- **Learning Three.JS book & examples**
  http://www.smartjava.org/content/all-109-examples-my-book-threejs-threejs-version-r63

- **Great set of examples:**
  http://stemkoski.github.io/Three.js/

Let's Get Started!