Queen’s University Belfast

Computer Science Challenges Learning Diary

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# Weekly Learning Log

## The Challenge

To develop a Smart Contextual Application using Augmented Reality, for example, like a head-up display that provides people user-customisable relevant information as they work and live.

## Week 1 - Research

* Current and in-production products such as the Focals and the Vuzix Blade
* Not many things learnt as I spent the week brainstorming ideas

## Week 2 – Research

* Volumetric Images
  + Trapping a particle and projecting light onto the particle from different angles to produce a holographic image
* Same as last week, not much entered here as I was researching ideas and brainstorming

## Week 3

* Directed research towards what the big tech companies would possibly be making by using their SDKs to see what I could produce so that if they did bring out an AR device I would have a product compatible.
  + Apple’s Swift could only be used with iOS computers, and I am on Windows so this was a no go
  + Android had ARCore and the Android SDK which I installed and product a simple AR app that could be run off their built in emulator
  + Learnt the basics of ARCore using Java

## Week 4 & 5

* Aim of this week was to produce a how-to guide, therefore I needed to learn the basics of HTML and CSS
* As I was using Dreamweaver, this was easier than from scratch as they had their live previews so I could see what was being changed as I altered the code.
* Also had many tutorials I used to get started.
* After the how-to was finished, continued expanding on the basic ARCore app

## Week 6

* How to use to github.io (GitHub pages)
  + I feel this will be very useful for future projects as I can use github.io for a free dedicated web server, making it very easy to test my programs on devices other than the one I’m working on
* Basics of Blender
  + This will be very useful in future when dealing with 3D objects again
* The basics of AR.js
* How to use WebXR.io and its playground
  + This could provide as for some inspiration

### Week 7

* More advanced features of AR.js e.g. how to implement custom markers

### Week 8

* Not much done this week due to illness

### Week 9

* Basics of Markdown

### Week 10-14

* Much of the work involved in these weeks were not used to learn things as I already knew how to use AR.js and HTML
* I did however learn to use JavaScript by having to convert my Java files into JavaScript