

080314_dorkbot_CPH

Controlling Unity with a iPhone

Recipe

wifi-network

JailbreaKed iPhone (mine is running 1.1.2)

akaRemote

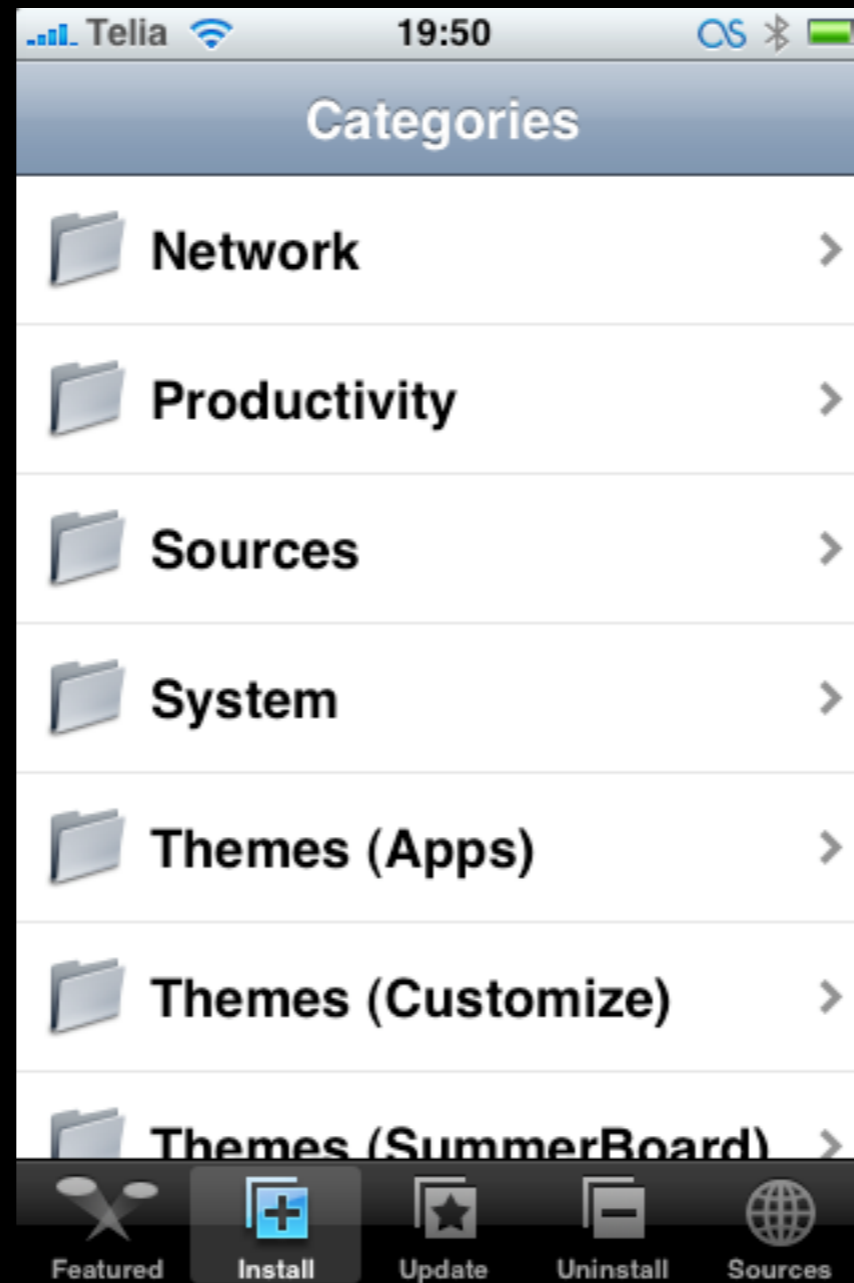
FLOSC

Unity

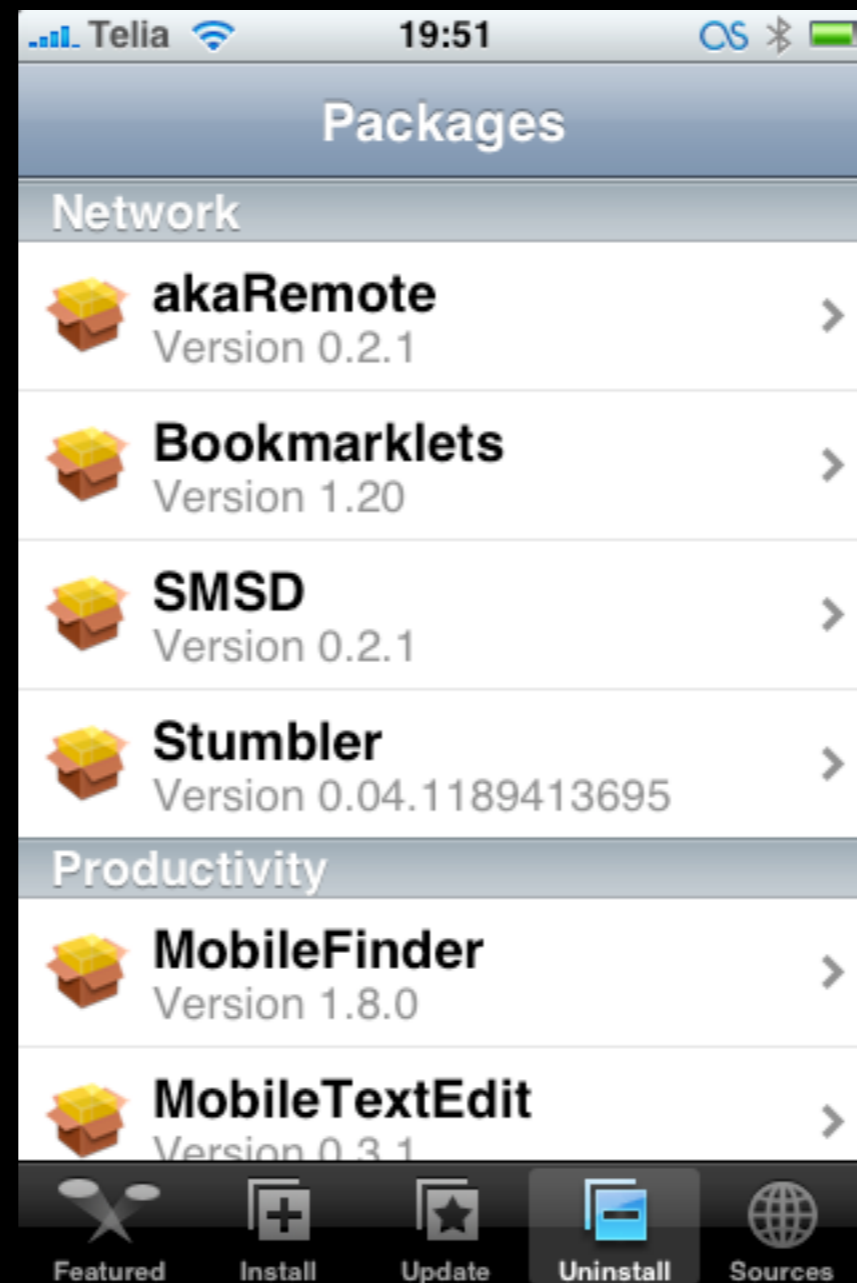
30 minutes

Part One

Setting up akaRemote on the iPhone



> Network



akaRemote

by Masayuki Akamatsu, <http://www.iamas.ac.jp/~aka/iphone/>
Professor at IAMAS, Institute of Advanced Media Arts and Sciences, Japan

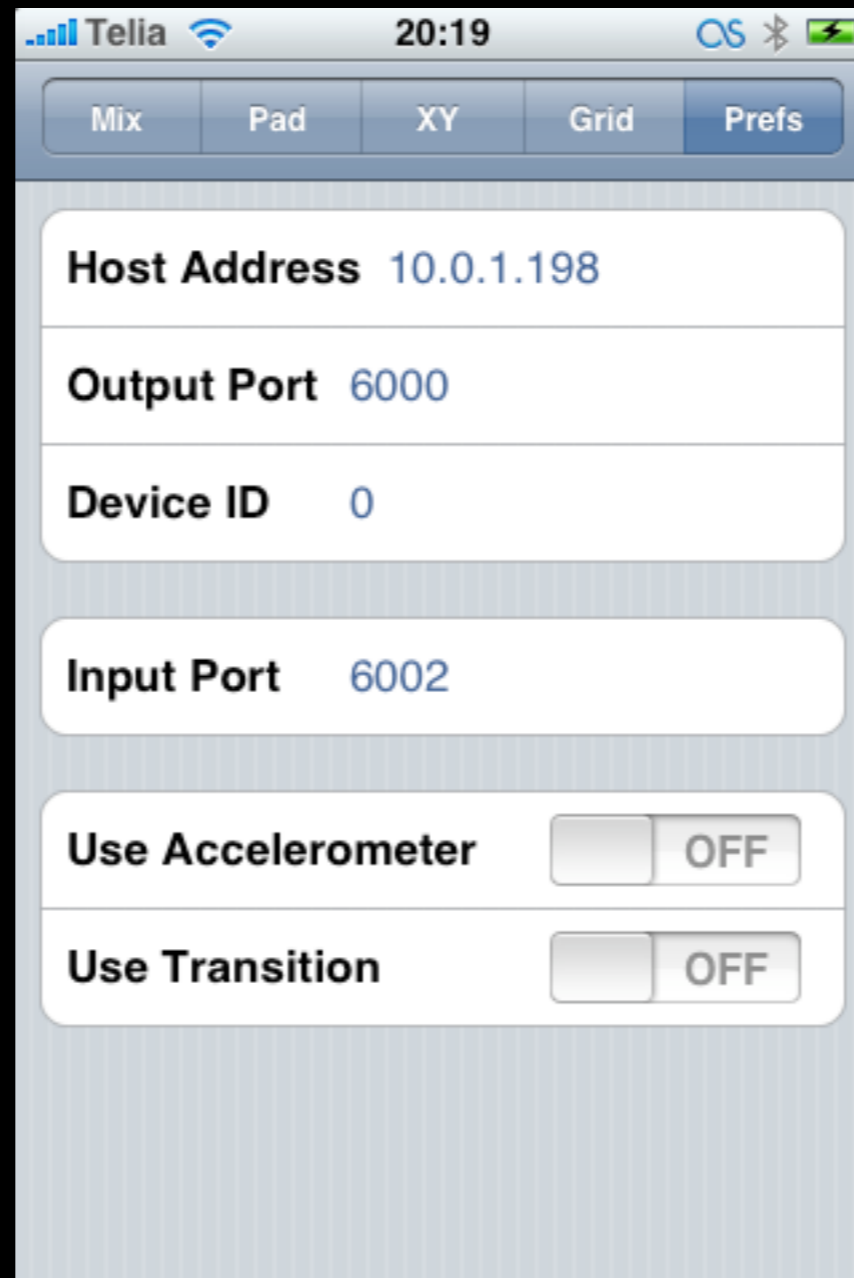


akaRemote: Sends OSC messages

OSC = Open Sound Control, network protocol, compat. with TCP/IP and UDP

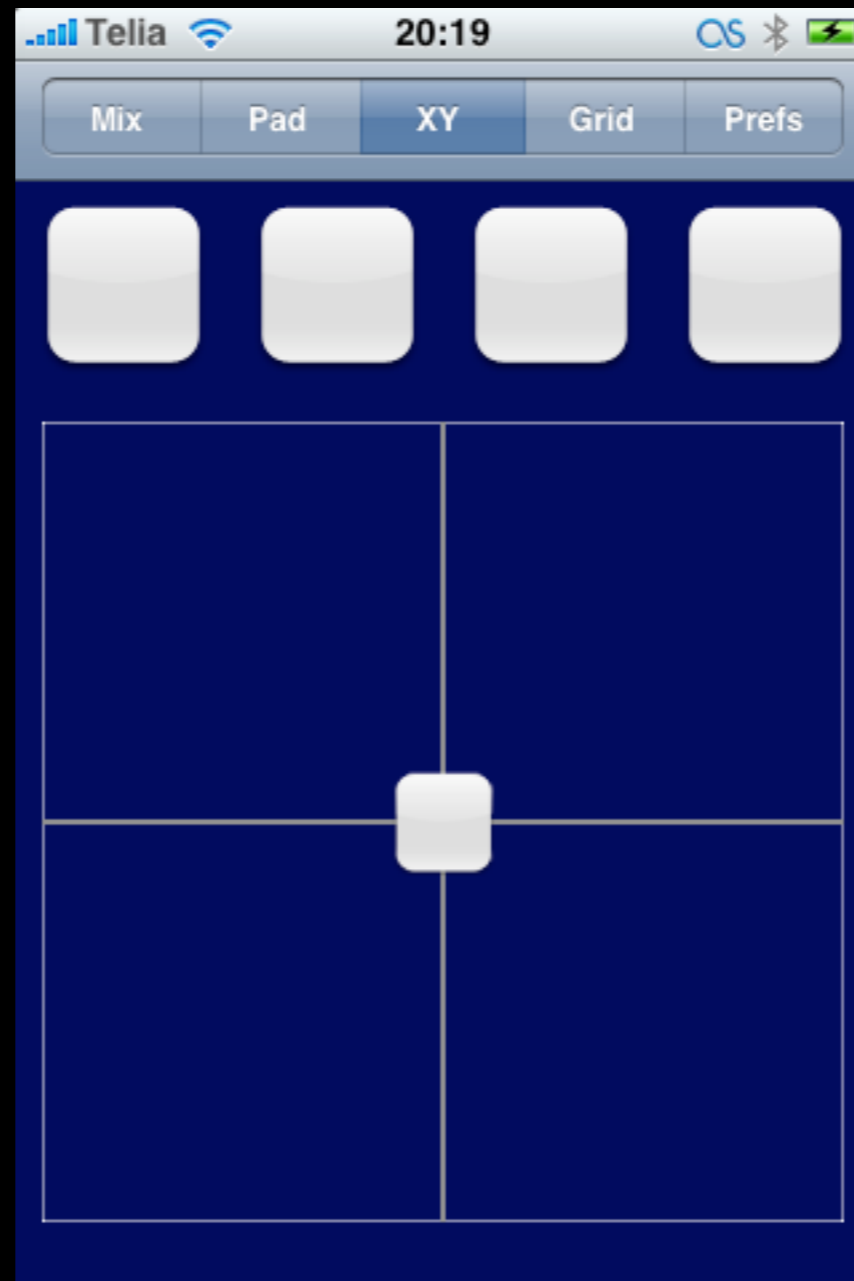


akaRemote on the Springboard



akaRemote: Configure

Enter the IP of the receiving machine + the portnumber we'll listen on



XY Controller

(other controllers is available)

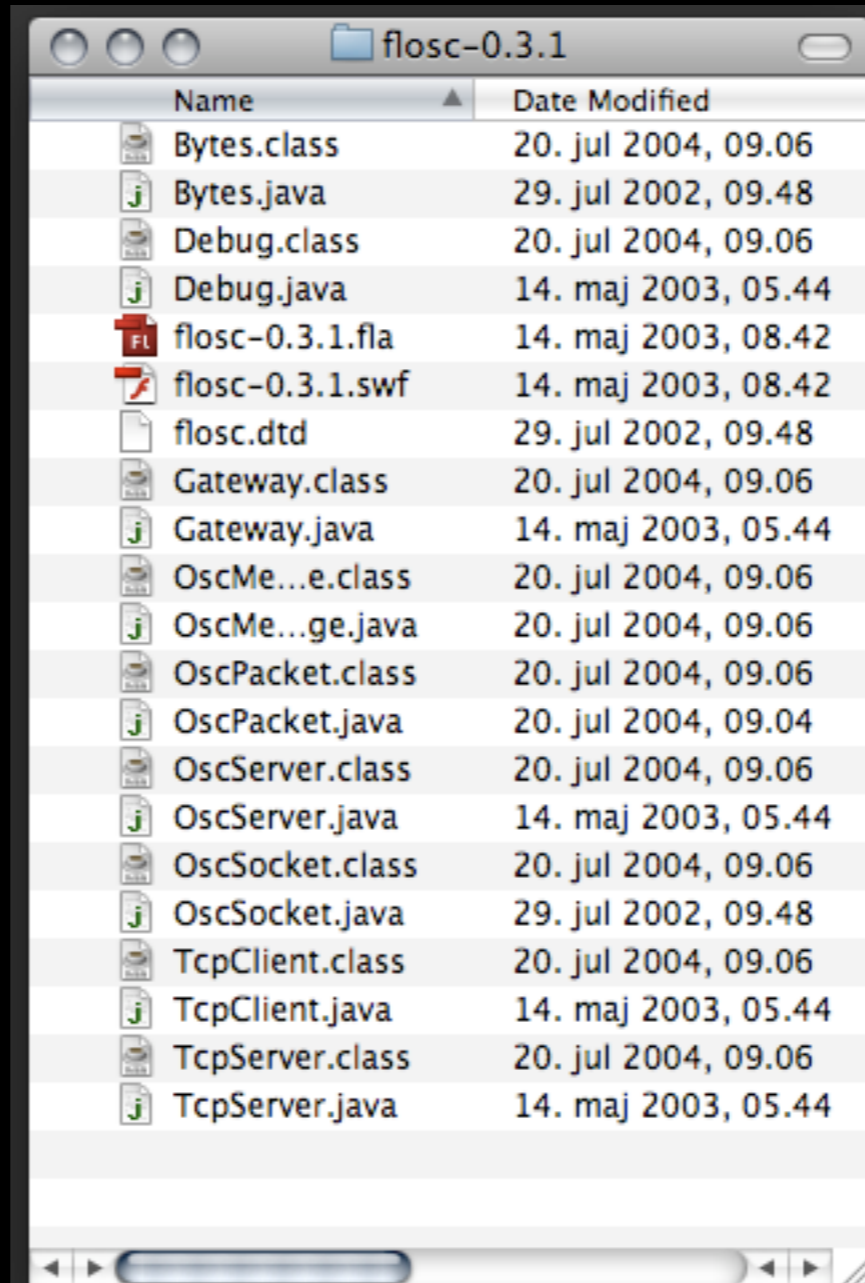
Part Two

Setting up FLOSC on a Mac



FLOSC (Flash OSC)

by Ben Chun, <http://benchun.net/flosc/>
opensource, Java, translates binary OSC/UDP Packets to XML/TCP



FLOSC 0.3.1

newest version is from 2004...

```
$ cd flosc-0.3.1/
```

```
$ java Gateway 6000 6001
```

```
Attempting to start OSC / Flash Gateway server
```

```
OscServer created...
```

```
TcpServer created...
```

Start FLOSC

using Terminal.app

```
<OSCPACKET ADDRESS="192.168.0.5" PORT="49170" TIME="0"><MESSAGE NAME="/event"><ARGUMENT TYPE="i" VALUE="0" /
><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="i" VALUE="-1" /><ARGUMENT TYPE="i" VALUE="-1" /><ARGUMENT TYPE="i"
VALUE="-1" /></MESSAGE></OSCPACKET><OSCPACKET ADDRESS="192.168.0.5" PORT="49170" TIME="0"><MESSAGE NAME="/
event"><ARGUMENT TYPE="i" VALUE="0" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="i" VALUE="10" /><ARGUMENT
TYPE="i" VALUE="3" /><ARGUMENT TYPE="i" VALUE="1" /><ARGUMENT TYPE="f" VALUE="0.61538464" /><ARGUMENT TYPE="f"
VALUE="0.58461535" /></MESSAGE></OSCPACKET><OSCPACKET ADDRESS="192.168.0.5" PORT="49170" TIME="0"><MESSAGE
NAME="/event"><ARGUMENT TYPE="i" VALUE="0" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="i" VALUE="10" /
><ARGUMENT TYPE="i" VALUE="3" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="f" VALUE="0.58076924" /><ARGUMENT
TYPE="f" VALUE="0.58461535" /></MESSAGE></OSCPACKET><OSCPACKET ADDRESS="192.168.0.5" PORT="49170"
TIME="0"><MESSAGE NAME="/event"><ARGUMENT TYPE="i" VALUE="0" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="i"
VALUE="10" /><ARGUMENT TYPE="i" VALUE="3" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="f" VALUE="0.5346154" /
><ARGUMENT TYPE="f" VALUE="0.5884615" /></MESSAGE></OSCPACKET><OSCPACKET ADDRESS="192.168.0.5" PORT="49170"
TIME="0"><MESSAGE NAME="/event"><ARGUMENT TYPE="i" VALUE="0" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="i"
VALUE="10" /><ARGUMENT TYPE="i" VALUE="3" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="f" VALUE="0.50769234" /
><ARGUMENT TYPE="f" VALUE="0.5884615" /></MESSAGE></OSCPACKET><OSCPACKET ADDRESS="192.168.0.5" PORT="49170"
TIME="0"><MESSAGE NAME="/event"><ARGUMENT TYPE="i" VALUE="0" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="i"
VALUE="10" /><ARGUMENT TYPE="i" VALUE="3" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="f" VALUE="0.4653846" /
><ARGUMENT TYPE="f" VALUE="0.5884615" /></MESSAGE></OSCPACKET><OSCPACKET ADDRESS="192.168.0.5" PORT="49170"
TIME="0"><MESSAGE NAME="/event"><ARGUMENT TYPE="i" VALUE="0" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="i"
VALUE="10" /><ARGUMENT TYPE="i" VALUE="3" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="f" VALUE="0.43076923" /
><ARGUMENT TYPE="f" VALUE="0.5769231" /></MESSAGE></OSCPACKET><OSCPACKET ADDRESS="192.168.0.5" PORT="49170"
TIME="0"><MESSAGE NAME="/event"><ARGUMENT TYPE="i" VALUE="0" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="i"
VALUE="10" /><ARGUMENT TYPE="i" VALUE="3" /><ARGUMENT TYPE="i" VALUE="2" /><ARGUMENT TYPE="f" VALUE="0.4076923" /
><ARGUMENT TYPE="f" VALUE="0.56153846" /></MESSAGE></OSCPACKET></OSCPACKET ADDRESS="192.168.0.5" PORT="49170"
```

telnet localhost 6001

using Terminal.app

Part Three

Connecting Unity to the socket



Unity

3D GameEngine


```
mySocket = new Socket (AddressFamily.InterNetwork, SocketType.Stream, ProtocolType.Tcp );  
System.Net.IPAddress    remoteIPAddress = System.Net.IPAddress.Parse("127.0.0.1");  
System.Net.IPEndPoint    remoteEndPoint = System.Net.IPEndPoint(remoteIPAddress, 6001);  
mySocket.Connect(remoteEndPoint);
```

segment of simple C# socket client

This lets Unity listen in on the traffic on port 6001

```
void Parse( string str ){
    float[] res = new float[8];
    string[] split = Regex.Split(str, "VALUE=");
    int i = 0;
    foreach (string s in split) {
        if( !s.StartsWith("<") ){
            char[] c = Regex.Split(s, " /")[0].ToCharArray();
            float v = System.Convert.ToSingle( new String(c, 1, c.Length-2) );
            res[i] = v;
            i++;
        }
    }
    ControllerStates = res;
}
```

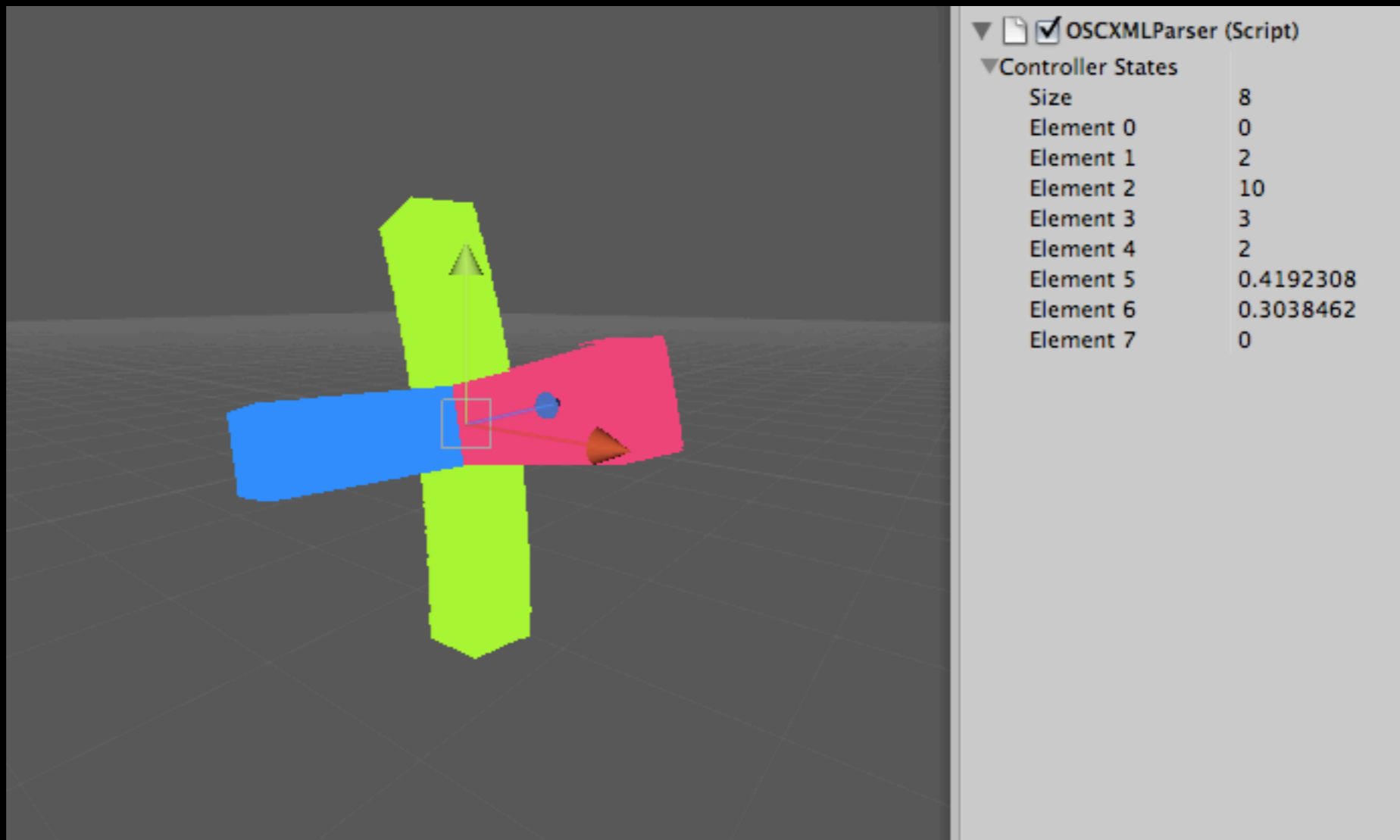
brutal string parser in C#

Translates the XML data back into floats we can use

```
function Update () {  
    cross.Rotate(Vector3.up * ControllerStates[5]);  
    cross.Rotate(Vector3.forward * ControllerStates[6]);  
}
```

animation code in JavaScript

using the values from the XY Controller on the iPhone to Rotate the model in 3D space



XY Control data available in Unity's inspector

Done.

Jørgen Skogmo / shiftcontrol 08