**Complex Game Systems**

**Project:** Gamified homewares, by Emma Cameron

**Overall Idea**

Multiplayer network of both devices and humans as clients connected to a server associated with real time game play.

**Underlying technology**

The video game will be developed in the Unity game engine.

Homewares to be embedded with Arduino processors and networked into the Unity platform as clients.

**Minimum viable product**

Establishing a multiplayer network of one device client and one player client to a server.

Client 1: Message packet: Player sends position to server, controller event triggered at certain location. Player’s character makes offering to a shrine.

Server: Message Packet: Server relays the Player’s Client 1 packet to Client 2: An IoT device.

Client 2: Message Packet: IoT device event sequence triggered. An LED turns on, corresponding with the activated game state of the player making offering to the shrine in-game.

Ultimate visions for this project are to turn it into a commercial viable solution in collaboration with an industrial lighting designer.

**Resources**

Milan Design week: [*https://www.salonemilano.it/en/*](https://www.salonemilano.it/en/)

Immersive Lighting Projection: [*http://www.archdaily.com/868496/zaha-hadid-architects-creates-immersive-digital-installation-for-samsung-at-milan-design-week*](http://www.archdaily.com/868496/zaha-hadid-architects-creates-immersive-digital-installation-for-samsung-at-milan-design-week)

Unity plugins for Arduino: [*http://www.alanzucconi.com/2015/10/07/how-to-integrate-arduino-with-unity/*](http://www.alanzucconi.com/2015/10/07/how-to-integrate-arduino-with-unity/)

Multiplayer Networking*:* [*https://unity3d.com/learn/tutorials/topics/multiplayer-networking/testing-multiplayer-movement?playlist=29690*](https://unity3d.com/learn/tutorials/topics/multiplayer-networking/testing-multiplayer-movement?playlist=29690)