

# RICH PLASTOW

Launched at Brighton Digital Festival, **Looptopia** combines a range of new technologies including **WebGL**, **WebSockets** and **Web Audio** to deliver otherworldly musical experiences.

CASE STUDY **Looptopia**

CLIENT **Loop.Coop**

DATE **September 2014**

SKILLS

PROJECT MANAGEMENT GRAPHIC DESIGN VISUAL IDENTITY UX DESIGN SOUND DESIGN  
WEB APP DEVELOPMENT FULL STACK JAVASCRIPT RESPONSIVE LAYOUT GITHUB MONGO  
NODE METEOR FOUNDATION HANDLEBARS HTML LESS CSS JAVASCRIPT  
JQUERY X3D WebGL WEBSOCKETS WEB AUDIO

**Looptopia** is a strange and beautiful web app where you can sculpt music visually, jam in real time with other users, and immerse yourself in a vast 3D soundscape.

This project provided a unique opportunity to explore **cutting edge web technologies** on the server and in the browser. The **Meteor** framework allows thousands of users to collaborate on a shared collection of documents, with **live push-updates** to clientside HTML when data changes. **X3D** uses an HTML-like syntax to represent a 3D scene. By hooking X3D up to Meteor, I was able to create a **reactive multi user environment** which can scale without losing performance.



## App architecture

- SERVER** The backend is written in **JavaScript**, running on a **Node server**
- DATABASE** Data is stored as **JSON objects** in **Mongo**, a high-performance **NoSQL** database
- METEOR** Much code actually runs on server *and* client, with communication via **WebSockets**
- PACKAGES** Looptopia uses **Iron Router**, **X3DOM**, **Moment**, and many more **NPM packages**
- X3DOM** A JavaScript implementation of **X3D**, the W3C's successor to VRML

## Special features

- INTERACTIVE** Elements in the 3D scene react to user activity by animating and playing music
- COLLABORATE** Users can modify the 3D world, and modifications are **immediately seen by all users**
- GENERATIVE** The 3D landscape evolves according to a **semi-random algorithm**
- ARCHIVED** All modifications are **permanently recorded**, for 'undo' history and audit trail

## Find out more...

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