LudoTune.com

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ABSTRACT

LudoTune is a browser-based musical toy that allows users to create music in a 3D environment by building cube-based structures. Users' creations can range from simple loops, to strange musical sculptures, to entire songs involving hundreds of cubes.

1. LINK TO WORK

LudoTune is accessible at https://ludotune.com

2. DESCRIPTION

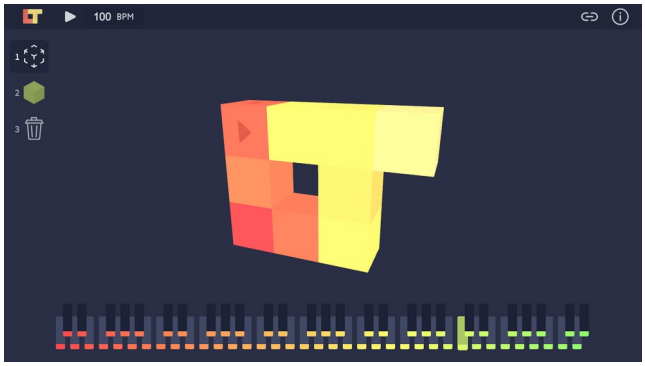

Figure 1. Screenshot showing the default LudoTune creation

2.1 Demonstrations

The concept and mechanics of LudoTune are best explained with video demonstrations. A few short videos including a one-minute tutorial covering the basic features can be found here: https://vimeo.com/dylanturner

There are also several user-submitted creations featured on the home page of ludotune.com which can be helpful for understanding how the mechanics interact and what can be created.

2.2 Description of Core-Mechanics

Each cube has an assigned musical note and users can create musical sequences by placing these cubes adjacent to each other. Upon pressing the play button, a signal is transmitted through the sequence and each cube emits its musical note when the signal reaches it.

The user can designate which cube (or cubes) the signal should start at. The signal's position is updated on a steady timer, at a rate determined by the tempo as set by the user. The signal will pass from an activated cube to all adjacent cubes unless they are already activated or were activated on the previous 'step' of the timer. This allows the signal to split from one source into many paths. A user may prevent this behaviour by designating a single direction to a cube, ensuring that the cube can only pass the signal in that one direction. This feature can be used for creating endless loops.

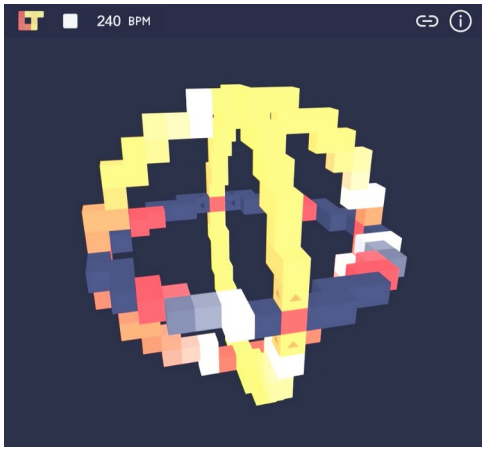

Figure 2. Screenshot showing a creation during playback, with multiple signals and interconnecting paths

The user can also assign the instrument and playback volume of each cube to further control the sound and dynamics of their creation. Crucially, cubes can be muted so that they silently transmit the signal, enabling the user to create more interesting rhythms.

3. TECHNOLOGIES USED

LudoTune is primarily a client-side web application. Tone.js, a framework built on top of the Web Audio API, is used for all sound production, including scheduling, sample manipulation and playback. The JavaScript 3D library Three.js is used for 3D rendering.

4. ABOUT THE AUTHOR

Dylan Turner is a software developer and composer from Australia, currently residing in Québec, Canada. With a background in game development, it was his work on videogame soundtracks that first incited his enthusiasm for adaptive, generative and interactive music and sound.

The web is currently Dylan's preferred platform for developing various musical experiments, tools, games, or other experiences which can be seen at https://dylanturner.dev