

A PORTFOLIO OF SELECTED WORKS

2015-2017

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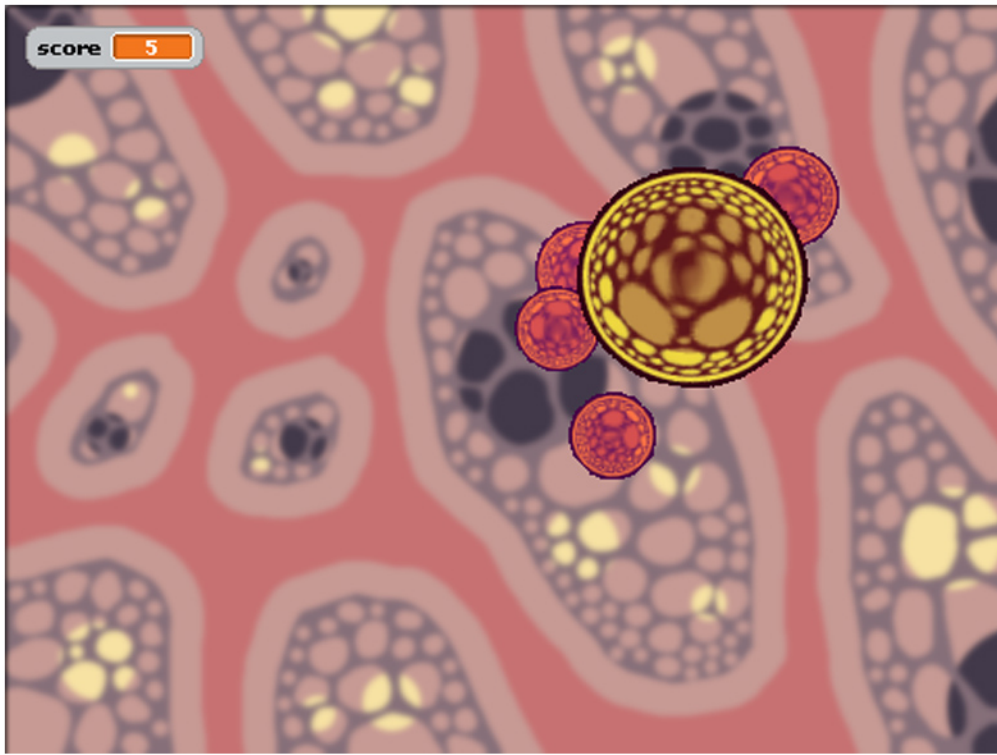
A third-person runner in Unreal Engine, employing creative use of physics.

voxsam

A first-person tower defense sandbox game, incorporating base-building.

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A musical application on Android using Bluetooth and several devices to form an orchestra.



badblood

Inspired by the pathogenesis of disease, *Bad Blood* is a 2D game made using *Snap* engine. The player must click on the bacterial cell to gain points, and each click causes the cell to implode and spawn in increasing amounts of decoy cells.

“Ultimately, *Bad Blood* is an exercise in Creativity —

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— making a game that is thematically coherent while restricted.”



Bad Blood attempts to create an infinitely-scaling difficulty system under two restrictions; utilising only one form of user input, and employing only one “antagonist”. A lot of the design process was dedicated to the feedback mechanisms for each action and the responses of the game elements in order to

present the scaling difficulty succinctly to the user. Additionally, the graphics were rendered so they could best utilise *Snap*’s sprite manipulation capabilities for animations and effects. Ultimately, *Bad Blood* is an exercise in creativity; making a game that is thematically and aesthetically coherent under strict restrictions.

01

eden

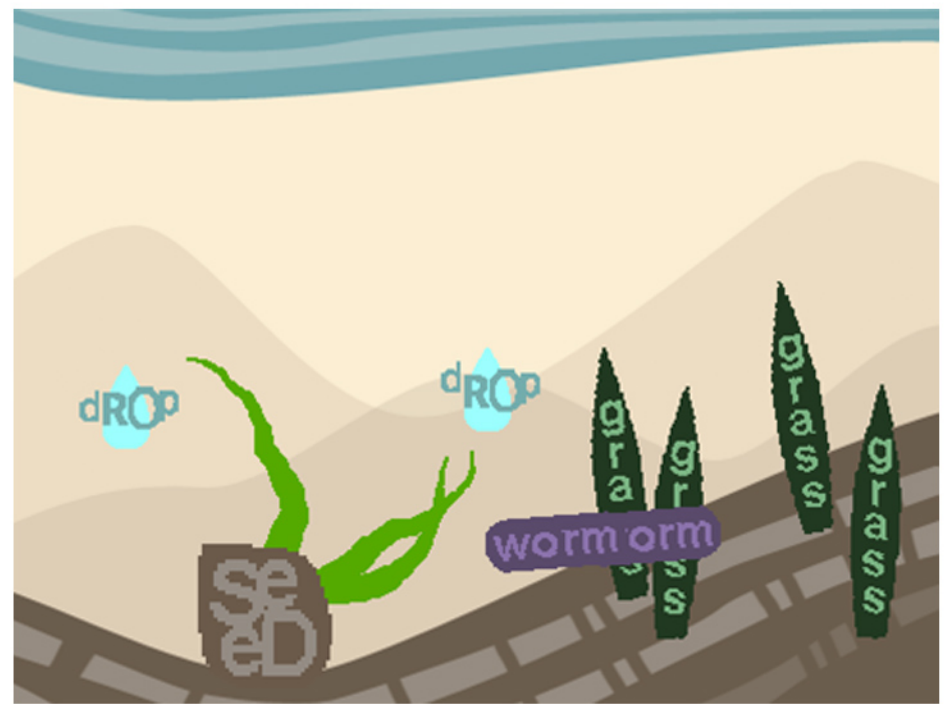
eden is a multi-modal, gesture-based piece that utilises the *Kinect* as a means of acquiring input for an interactive experience. The systems within eden are themselves autonomous and interact with one another without external input. However, the user is able to manipulate the

elements and their interactions, or directly interact with several. Many of the elements feature text as a prominent part of their design, and word-play is employed heavily in the interactions such that the text itself is integrated into the experience.

The systems within eden are themselves autonomous —



02



For example, the “drop” of rain explodes into a “plop” whenever it comes into contact with anything, be it an object within the system or the user’s gestures, or the “seed” that transforms into “greed” once its tendrils have come into contact with sufficient raindrops, pulsing violently and rapidly.

Users can intercept raindrops to prevent the seed from growing, or guide its tendrils towards the raindrops.

— with the Kinect as a means of gesture-based input. ”

03

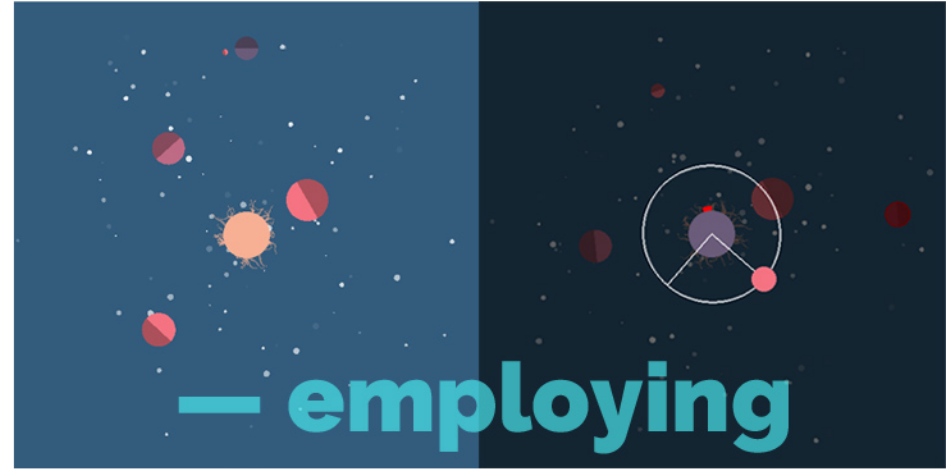


“Both make use of simple

handydandy

Using layered polygons in *OpenGL*, a pair of grasping hands are rendered, with each vertice placed **by hand**. The vector style employed by the illustration is specifically tailored to fit the medium. The tentacles **on the other hand**, are generated computationally, and animated through vertice manipulation.

04



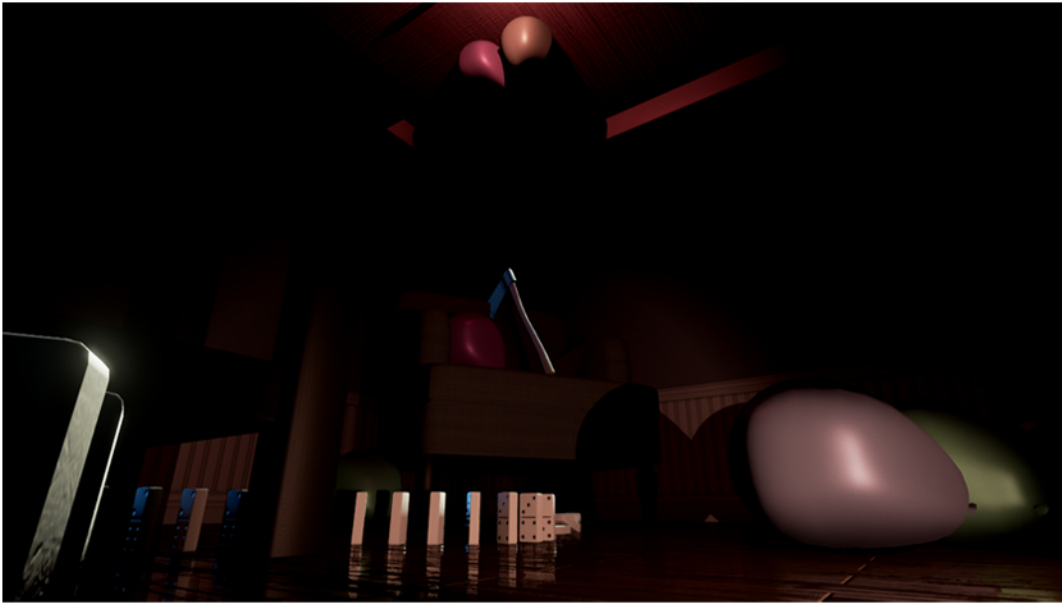
— employing clever use of mathematics

spaceclockwork

A clock made out of planetary bodies, the planets mirror the hands of the clock and represent the hour, minute, and second. The user is able to add in satellite bodies, controlling different parameters such as the shape of the orbit, from ellipsoid to spherical, to the speed and size of the

satellites. Satellites can be made to orbit any of the celestial bodies, including other satellites. Both handydandy and spaceclockwork attempt to make use of simple polygons in *OpenGL* in order to create visually captivating designs, employing clever use of mathematics to manipulate vertices and vectors.

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couchsurfing

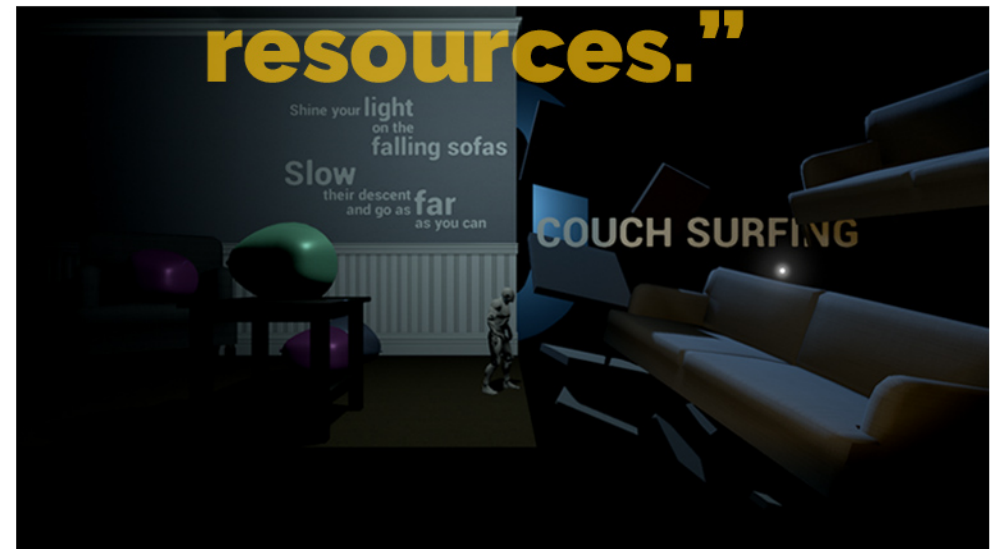
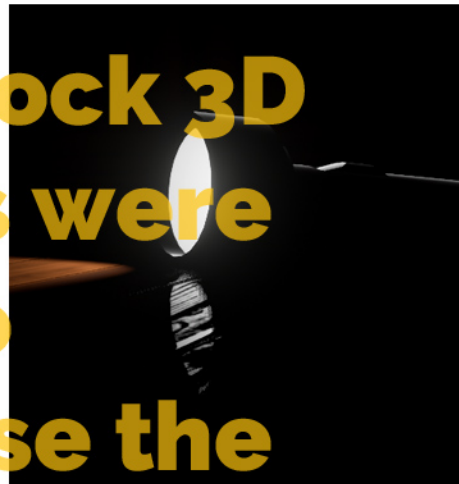
Using *Unreal Engine* and *Oculus VR*, *couchsurfing* explores a less conventional 3rd person view for VR, and utilises manipulation of the physics engine to create a quirky platform runner game. Players wield a magical flashlight that slows the descent of objects immensely, allowing them to create

platforms for their avatar to jump onto. The suspended sofas are still susceptible to pushing and shoving, allowing the player to exploit the warped physics and prepare for the next leap. Only stock 3D objects were used to compose the scene to foster creativity while working with limited

resources.”

happybirthday

A scene made to implicitly direct the player's attention using the *Oculus Rift VR* headset, *happybirthday* depicts a rather suspicious party, with the player in the shoes of a tiny animal lost in the fanfare. A flashlight is the first thing seen, and directs the player to turn and view the scene, as one of the sole light sources.



06

07



“Players are given the tools to create their entire environment.”

VOXSAM

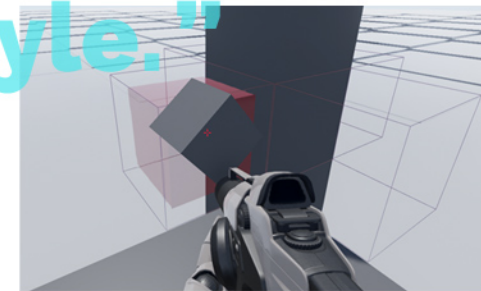
Mixing sandbox and tower defense elements, *voxsam* is first-person a base-building resource-management game where the player collects blocks from slain enemies to expand their tiny island with towers and structures, placed a la *Minecraft*, to brave progressively tougher waves of enemies.

08



— allowing each player to come up with their own strategies and play style.”

Mechanics for the game were coded from scratch using *Unreal*'s scripting system, with a minimalist style that makes extensive use of primitives. *voxsam* explores player-generated content within non-sandbox genres by giving tools to create entire environments while requiring strategy and planning.

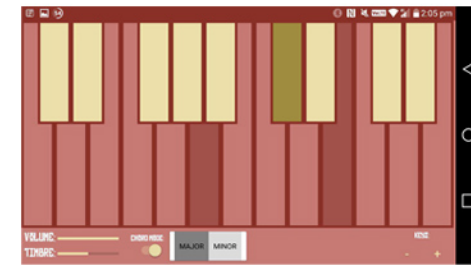
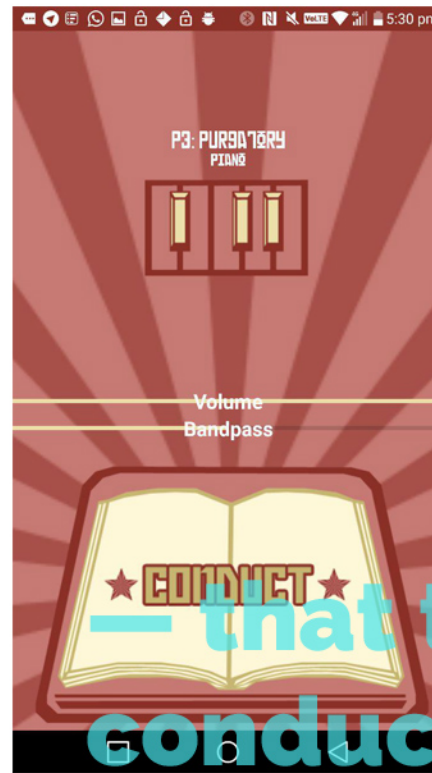


09



commductor

COMMDUCTOR is a music application built for Android, simulating a tiny orchestra of players complete with a conductor that is able to wirelessly modulate the sounds synthesised by the other instrumentalists through gesture-based interactions. Each instrument responds to the conductor in a unique way based on their method of synthesis.



Each device becomes a medium for players to contribute to a collective sound —

— that the conductor may modulate per instrument.

Real-time additive synthesis is used to create all the notes of the piano instrument, and through specific values transferred by Bluetooth from the conductor device, the timbre of the sound can be manipulated in real-time to produce sounds ranging from vaguely woodwind to a more conventional piano sound.

Each device becomes a medium for players to contribute to a collective sound that the conductor may modulate on a per instrument basis, just by pairing each of the instrument devices to the conductor device. The aesthetics follow a light-hearted adaptation of propaganda graphics such as the raised fist.