



Interactive Media Final Design Report

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# RYŪTAI

流体 [*Ryūtai*] is an interactive ‘fluid’ virtual instrumental game aimed to aid university students relax at stressful times such as assessment or exam period.

流体 means ‘fluid’ in Japanese, where we have drawn its culture and meditative practices to influence much of our design.

This project has been inspired by a range of interactive art projects, gesture controls, zen meditation practices and stress relief techniques.

## WORK COMPLETED

Our design is initially based off the practices of zen as well as fluid motion. We are aiming to create a game and instrument that will be controlled via Leap Motion. The interaction in the game will take place in a virtual space and will be simple and easy to use. We aim for the design to be placed with all the UTS buildings spaces, starting with Building 11.

After our initial brainstorming session, we came up with the idea of an interactive musical instrument which has game like elements to it.

Leap Motion was the best device to use to incorporate both the game and musical elements. As we wanted the game to be relaxing and calming for stressed students we decided to design the project based on the idea of fluid motion.

For the prototypes, one member of the team focused on the musical elements and to use Processing to incorporate that into a design using Leap Motion. This included incorporating zen and meditative music into the design and making the music change with any motion made by their hands using Leap Motion. Another member of the team focused on creating fluid motion using both Processing and Leap Motion. This group member focused on making the motions made by their hand being translated into fluid motion on the screen.

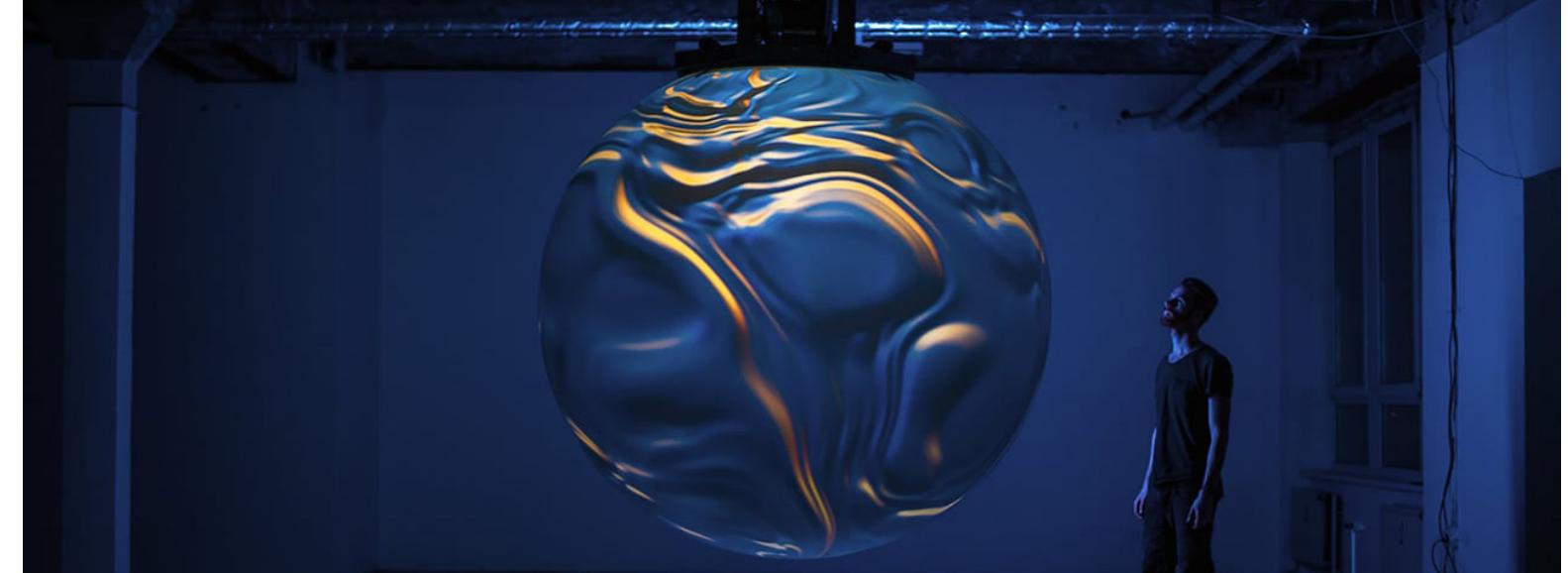
## BACKGROUND

*Created by UTS students to support their UTS peers. Incorporates a lot of UTS branding elements to emulate the spirit and design of the university.*



Therefore their main focus was making the best design by incorporating the idea of fluid motion. Lastly the final member worked on creating a game element incorporated into the design. This member focused on creating a game like environment using Processing and Leap Motion.

After all the prototype had been completed we combined them all into one big design, incorporating all three element of fluid motion, music and game elements. After looking over all the different prototypes we have decided that a game involving bubbles with gong sounds being heard when the bubbles are popped. Different elements have also been included which will be outlined below.



## RESEARCH

From our case studies, researched in our proposal, we explored interactive art such as the Interactive LCD Art Wall at SECU. It found that using digital art was able to be sustainable and allow their visitors to interact with the display in a multitude of ways. It gave us the idea for the interactive nature of our design, using leap to control a fluid ball on the screen. (Materials and Methods, 2014)

Practice of zen was another source of inspiration for this project. Zen is defined as a Japanese school of Mahayana Buddhism, emphasising the value of meditation and intuition. 'Path' by Eric Jiang, which is a Zen Garden Soundscape was something we discovered in our research.



*An interactive zen garden responds to the simple repetitive raking task from its participants through an 'auralized landscape'.*

It was designed to be similar to a traditional zen garden, where the user could create soothing sounds as they rake, to mimic the zen garden experience. This provided a basis for our own project to focus on relaxation and figure out how to provide zen purpose to users.

Combining visuals and sounds to create a meditative environment for students was another key aspect of our project. ANIMA, the Luminescent Orb Sculpture by Nick Verstand is a mesmerising orb that communicates with surroundings.

using its visuals and sounds. It can identify users in the room and generate images and sounds to interact with them. The sound frequencies modulates depending on the surrounding environment and creates a harmonious dialogue. The orbs movement and sound was inspiration for our project and overall design. (Onformative, 2015)

For our design we wanted to use Leap Motion, so the user can interact directly with the project. Therefore in our research we

looked into instruments created using Leap Motion. Hoenig created a youtube video called 'Leap Motion Gesture Control Jam' which uses Leap Motion to create a musical instrument while demonstrating the device's ability to control the instrument through hand signals. This video gave us inspiration to both know that Leap Motion will have both the ability to follow hand gestures as well as, be used to create a musical instrument. (Uwe G. Hoenig 2014).

# OBJECTIVE

THE OBJECTIVE OF THIS PROJECT IS TO CREATE A MEDITATIVE DESIGN WHICH CAN HELP STUDENTS RELAX DURING STRESSFUL TIMES AT UNIVERSITY. WE WISHED TO MAKE SOMETHING THAT UTS COULD USE ON THEIR INTERACTIVE WALLS, SUCH AS THE ONE IN BUILDING 11. THE DESIGN IS AIMED AT INSPIRING AND RELAXING STUDENTS AS THE INTERACTIVE OR JUST WALK PASS IT.

BY HAVING THIS PROJECT IN ALL THE DIFFERENT BUILDINGS IT WILL REACH STUDENTS FROM ALL DIFFERENT FACULTIES AND INSPIRE TRANSDISCIPLINARY INTERACTION AND CREATIVE COLLABORATION AMONG STUDENTS. IDEALLY WE WOULD OUR DESIGN TO BE ABLE TO BE USED BY MULTIPLE PEOPLE AND INSPIRE RELAXATION. OVERALL THE OBJECTIVE OF OUR DESIGN IS TO ENCOURAGE RELAXATION AND MEDIATION IN STRESSED OUT UNIVERSITY STUDENTS AT UTS AS WELL AS CREATING A FUN GAMES FOR THEM TO PLAY AT THE SAME TIME.

# PERSONAS AND SCENARIOS



**PAUL JAN BROWN**

## BIO

Paul is 24 years old and a 5th year UTS student with a part time job. His key interests involved sketching and video games. Even though he is meticulously organised and plans everything ahead of time, this causes a lot of stress with juggling both uni and his part time job.

## SCENARIO

All of Paul's classes require 100% attendance, meaning he is continuously rushing around as his job also demands him to be working at certain times. One day he arrives minutes before class after rushing around and being stressed for most of the day, he passes the interactive screen with our design, deciding he needs a break he began to play. As soon as he starts playing our game he begins to relax as he hears the meditative sounds. He plays the game for 5 minutes and even though he is now late for class he finally relaxed and forgets to stress about his busy life.



**PAULINE GOMBLIESKI**

## BIO

Pauline is 18 years old and is just about to finish her first semester at UTS. She also works casually at McDonalds. She loves music, particularly piano, and busks from time to time. She also surfs to relax. As this is her first semester her assignments are piling up and she is becoming increasingly stressed.

## SCENARIO

Pauline has just received 3 assignments to complete within two weeks. She knows she can be extremely unorganised and is already beginning to stress. On her way out of uni she spots the interactive wall in building 11. Seeing that it's an interactive game she decides to play. After 5 minutes of playing with ball and seeing how many bubbles she can pop she becomes more and more relaxed. The soothing sound emanating from the game also helps her relax as she is imagining playing her piano. After walking away she is more relaxed and is no longer stressing about her assignments.



**BEM LE PEPOU**

## BIO

Bem is 21 years old and an international student studying a double degree. She is in her 3rd year at UTS and is also the founder of Recyclable Waste Solutions, her start-up. Her interests include the ocean and scientific research. Studying a double degree as well as running her own business makes her continuously stressed.

## SCENARIO

She has just started Recyclable Waste Solutions. Whilst working on the business with her team, she remembers that she needs to get something for one of her classes after the meeting. While walking out of Building 11, stressed and frazzled, she notices the interactive screen with the moving bubbles. She feels instantly relaxed hearing the calming music coming out of the screen and decides to try it out for herself. She finds herself enjoying playing around with the bubbles and trying to pop them. All her worries disappear as she finishes playing the game and travels on her way to class.



## DESIGN CRITERIA

IN ORDER TO MEET THE KEY GOALS AND ASPIRATIONS OF WHAT WE NEEDED TO ACHIEVE WITH 'RYŪTAI', WE OUTLINED 6 CLEAR DESIGN CRITERIA POINTS.

THESE WERE BASED AROUND THE EFFECTIVENESS OF THE USER'S INTERACTION WITH THE INTERFACE.

AS WELL AS THIS, WAS THE CONSIDERATION OF HOW OUR CASE STUDIES AND USER RESEARCH WERE ABLE TO INFLUENCE ITS AESTHETICS AND FUNCTION, TO GIVE US THE BEST PROJECT OUTCOME POSSIBLE.

# USER FREEDOM

The User Experience was ultimately at the heart of everything we did throughout this project. We wanted to ensure that the design was simplistic so they were able to figure out how to use it easily. As well as this, we believe that fluidity would symbolise a sense of freedom within the student. By using Leap Motion, and the ease of function from utilising hand gestures, students can be free to interact and be in control of the interactive art how they like.

## PURPOSEFUL FUNCTION

Ultimately, the function was to relieve stress from UTS students especially during assessment and exam periods. This has been done through the wholesome nature of the game with the combination of elements from its interaction, visuals and music. Above all we identified that zen and meditative practices require the user to feel a sense of purpose, which we believe we have achieved through its gamification. The user has the purpose of capturing the bubbles through the game using the magnetic suspended ball, that responds by showing the motions through the rainbow fluid.

## AESTHETIC & MINIMALISTIC DESIGN

Using UTS branding gave us a good headstart of how we wanted to layout the design. As the new features of it had key colours of red, blue and white we were able to use this and incorporate it easily into our design. We felt that the fluidity of rainbow colours in coherence with these UTS shades would engage students as it is eye-catching and aesthetically appealing. By reducing the elements in our game to circular shapes and flowing motions, it reflects a sense of minimalistic design.

## HIGH PERFORMANCE

This is in consideration in terms of how well the game can perform across a range of computational devices. Through rigorous testing on multiple laptops, we have ensured that in the coding of our project that it has multi-platform compatibility on a range of operating systems. This is so we can use this in various UTS buildings around the campus and can be implemented easily. As well as this, using Leap Motion has been able to make this criteria point successful as it is one of the best devices to use to provide hand gesture control easily and efficiently.

## MEDITATIVE FORM

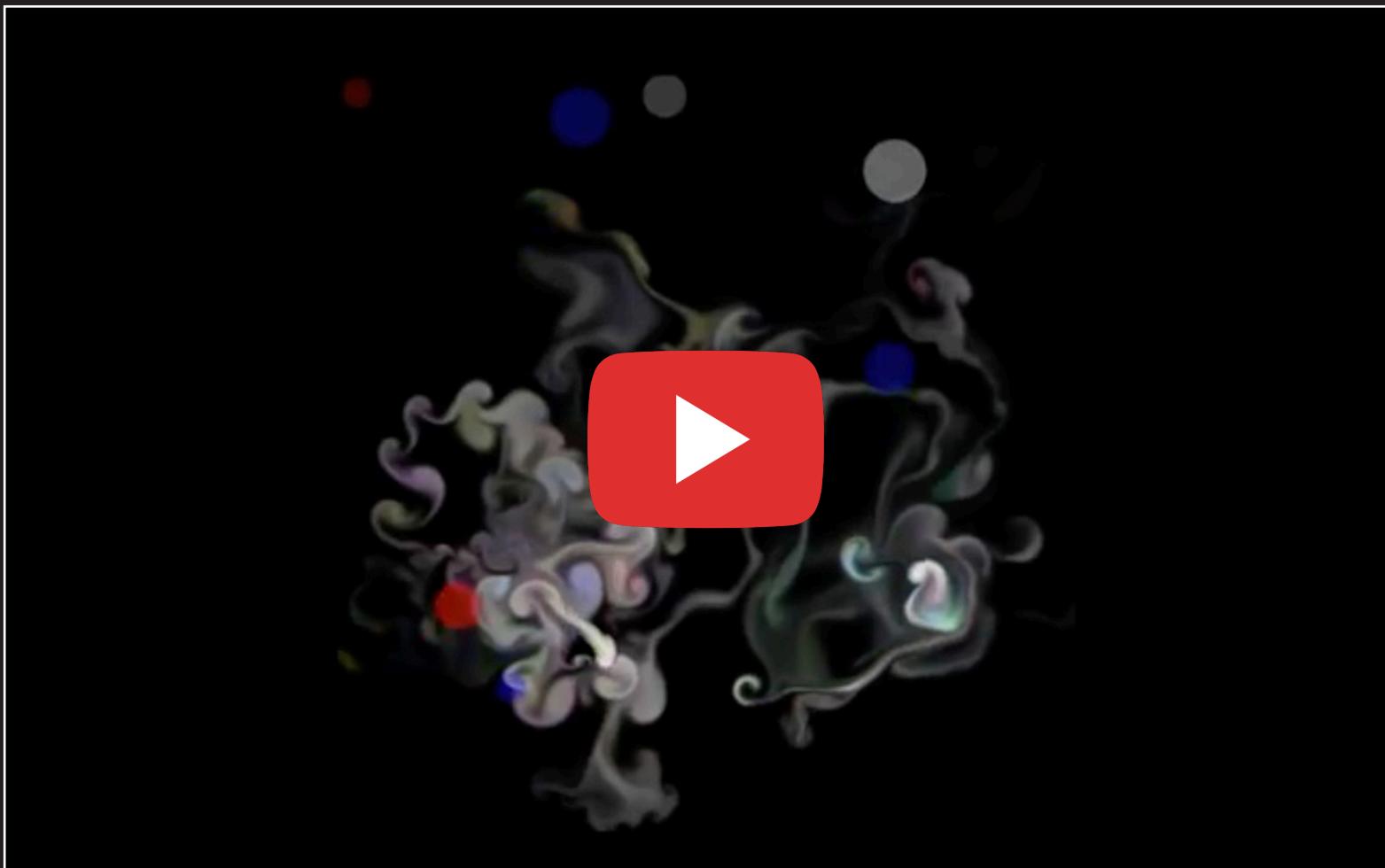
From our research and initial design concept, we knew that the form of the project had to be meditative and illuminate this theme throughout the user's interaction. With inspiration from ferrofluid, the magnetic suspension that allows the liquid to move provides an ease of movement and rhythm. The bubbles floating up are an addition to this to provide the user with other elements in the game to interact with. The music drawn from gong notes, adds an extra meditative layer as well.

## ZEN MUSICALITY

As one of the key features we wanted to explore in our project, musicality was one of the most important aspects we needed to implement in our design. To add to the simplicity of the visuals and gamification, we didn't want to complicate the music, thus we decided to use 'gong' sounds. These 'gong' sounds were inspired by the meditative practice of using gongs to soothe the soul. When a user starts playing the game, the music begins, and as they start interacting with the bubbles, a higher pitched gong sound plays as a form of feedback to the user that they are catching

# FINAL DESIGN VIDEO

BELOW IS A LINK TO OUR DESIGN VIDEO. THIS VIDEO OUTLINES THE MAJOR DESIGN FEATURES OF OUR GAME. THIS INCLUDES THE MUSIC ELEMENTS, FLUID MOTION AND THE OVERALL GAME DESIGN.



# CRITICAL REFLECTION

OVERALL, WE ARE QUITE SATISFIED WITH THE QUALITY OF OUR PROJECT AND THE AMOUNT OF WORK WE HAVE PUT INTO IT THROUGHOUT THIS JOURNEY. WE BELIEVE THAT THE CONCEPT OF HELPING OUR UTS PEERS WITH MEDITATIVE PRACTICES AND A FUN INTERACTIVE FLUID INSTRUMENT IS A GENUINE NEED THAT WE HAVE BEEN ABLE TO SOLVE AS A HIGH FUNCTIONING TEAM.

GIVEN THE OPPORTUNITY TO DO THIS PROJECT AGAIN, THERE ARE SOME KEY CRITICAL POINTS TO TOUCH ON THAT WE COULD PERHAPS IMPROVE ON FOR NEXT TIME. TIME MANAGEMENT WAS SOMETHING THAT WE HAD TROUBLE ADJUSTING TO, WE WERE ABLE TO ASSIGN TASKS BUT OFTEN FOUND OURSELVES FINISHING MUCH OF OUR WORK LAST MINUTE. HOWEVER, WE WERE ABLE TO ORGANISE QUITE A FEW COOPERATIVE GROUP MEETINGS AND UTILISE OUR CLASS TIME WELL. WITH DESIGNING THE PROJECT, WE COULD HAVE PERHAPS MADE MORE USE OF SKETCHING AND STORYBOARDING TO GIVE A CLEAR DIRECTION OF WHAT WE WANTED TO ACHIEVE AND HOW THIS WOULD LOOK LIKE. WE SHOULD HAVE DRAWN UP PROTOTYPES FIRST, TO SAVE A LOT OF TRIAL AND ERROR TIME WHEN CODING.

WITH THE CONCEPT AND DESIGN IN OUR MINDS, WE COULD HAVE RESEARCHED INTO MORE OF A VARIETY OF CASE STUDIES, THAT WOULD HAVE EXPANDED OUR IDEAS AND PROMPTED US TO TAKE MORE UNCONVENTIONAL ROUTES WITH OUR PROJECT. FINALLY, WITH THE PROTOTYPE STAGES, AS WE WERE FAIRLY NEW TO PROCESSING, IT WAS HARD TO EXPERIMENT A RANGE OF TECHNIQUES THAT COULD HAVE BEEN CARRIED INTO OUR FINAL DESIGN, THIS COULD HAVE BEEN DIFFERENT BACKGROUNDS, GAME PLAY OR MUSICAL ELEMENTS.

ALL IN ALL, WE HAD A GREAT TIME WITH THIS PROJECT AND LOVED WORKING TOGETHER AS A GROUP TO ACHIEVE AN INTERACTIVE MEDIA PROJECT WE DIDN'T THINK WE COULD CREATE AT THE BEGINNING OF THE SEMESTER. WE HAVE CERTAINLY LEARNT A LOT OVER THE COURSE OF THIS SUBJECT AND HAD A LOT OF FUN!

# REFERENCES

Materials & Methods 2014, SECU - Interactive Art Wall & Digital Signage,  
<http://www.materials-methods.com/secu>

Onformative 2015, ANIMA iki, <http://www.onformative.com/work/anima-iki>

Eric Jiang 2016, Path (MFA thesis), <http://www.ericjiang.io/#/path/>

Uwe G. Hoenig 2014, Leap Motion gesture control jam (Geco, Reaktor, Live),  
<https://www.youtube.com/watch?v=Q8AxhbCL-rM>