

BEN GOODWIN

Professional Portfolio

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ABOUT ME

My name is Ben Goodwin. I am a student developer studying at the University of Winchester. Although my course is mainly focused on web development, I spend a lot of my time experimenting with the production of AR, VR and MR applications as well as various 2D and 3D game projects. I hope you enjoy taking a look at my work!



SEVENTY MILLION WORKING DAYS ARE LOST DUE TO STRESS AND MENTAL HEALTH CONDITIONS EACH YEAR IN THE UNITED KINGDOM. STATERA AIMS TO REDUCE STRESS AT WORK TO INCREASE EMPLOYEE HEALTH AND PRODUCTIVITY



STATERA

BRINGING BALANCE TO WORK
AND LIFE



STATERA - RSA SUBMISSION

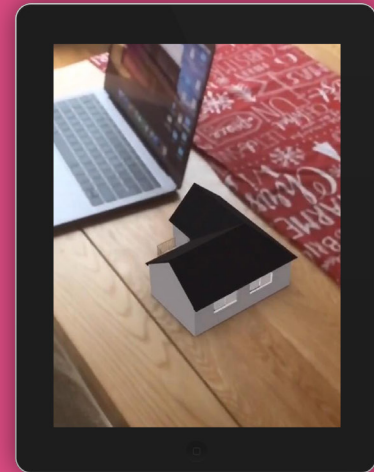
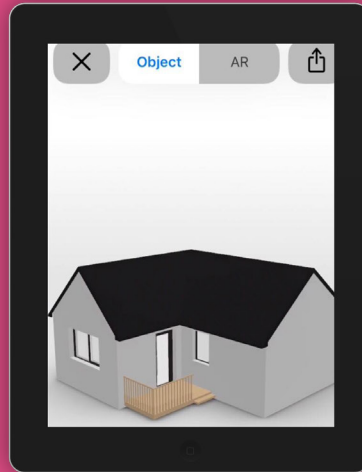
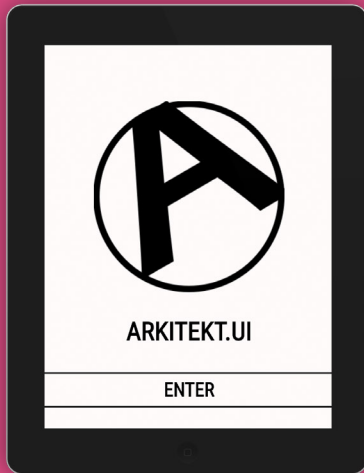
Statera was a business plan and RSA submission that I came up with in my third year of study. It is a stress management system designed for businesses that harnesses the power of wearable technologies to create a rapid response system for pastoral teams and managers to utilise, thus, improving the wellbeing of their staff.

Staff opt in to wear SMART wristbands that plot their heart-rate, heart-rate variability and user input onto easy to read charts and graphs. This allows pastoral teams to notice trends in their staff's wellbeing throughout daily, weekly and monthly cycles.

MAIN FEATURES

- Rapid response system
- Improved efficiency at work
- Unique to the market
- Helping to tackle rising mental health illnesses

To see more development work please visit appendix 1



ARKITEKT.UI - QUICK VIEW AR APPLICATION

ARKITEKT.UI was pitched to me by an MA Design student with a background in architecture. For his final year business plan, he wanted to create a prototype for an augmented reality application where a company could send a secure link to their client who would then be able to view their building in AR.

I decided to build a prototype for a progressive web application using Google Firebase and Apple's Quick View AR

TECHNOLOGIES USED

- Google Firebase
- Apple Quick View IOS
- Ionic
- HTML, CSS, JS

To see more development work please visit appendix 2



HEARTBEAT - A MIXED REALITY MOTION GRAPHIC

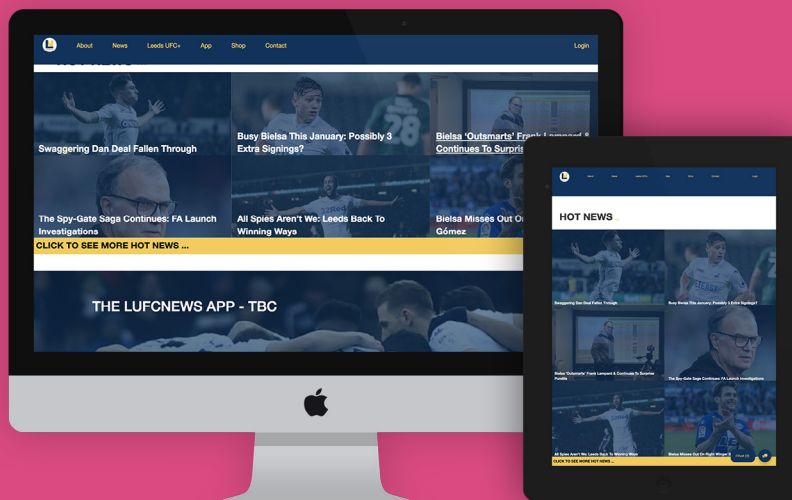
Heartbeat was an interactive motion graphic that I designed and built in my second year at university. It was built using Unity3D and deployed to Microsoft's HoloLens.

The idea of the interactive motion graphic was to teach secondary school students about the functions of the heart and how to keep their own heart healthy. For this project I was lucky enough to collaborate with some talented music students that compiled the sound effects and narrated the experience for me. however, I developed and designed the project myself

TECHNOLOGIES USED

- Unity3D
- FMOD
- Visual Studio
- Cinema4D

To see more development work please visit appendix 3



LUFC NEWS - WORDPRESS SITE AND IONIC APP

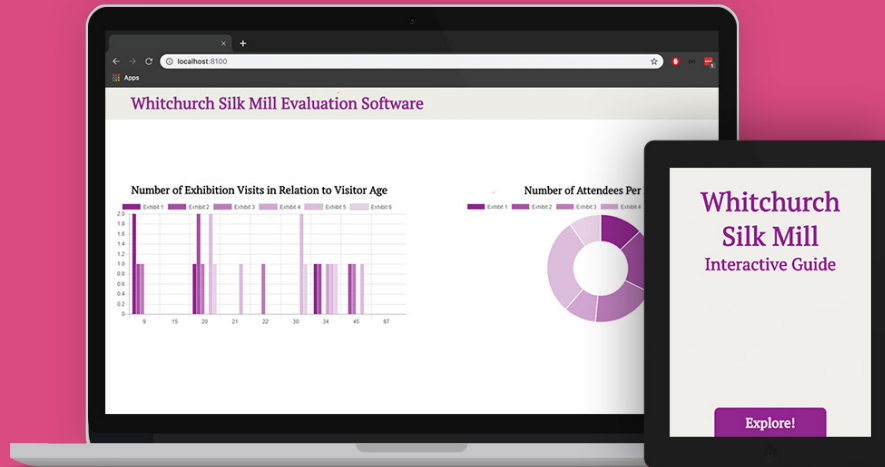
Alex Matthews, owner of LUFC News, came to me in the hope that I would rebuild his existing website to fit his new branding and designs. The website was developed for WordPress and has a built in chat system.

The application was built as a prototype using Ionic and Angular. It uses the WordPress Rest API to access all of the sites posts and user data.

MAIN FEATURES

- WordPress
- HTML, CSS, JS
- Angular
- Ionic

To see more development work please visit [appendix 4](#)



WHITCHURCH SILK MILL - EVALUATION SOFTWARE

The Whitchurch Silk Mill evaluation software was designed to help the employees of the silk mill track the engagement of their interactive experiences which they could use to feedback to the National Lottery Heritage Fund and prove that their funding had been well spent.

The web-app was built using Ionic, Chart.JS and MySQL. Chart.JS was used to help represent the data in an aesthetically pleasing manner and was directly linked to the MySQL database.

TECHNOLOGIES USED

- PHP
- Ionic
- Chart.JS

To see more development work please visit appendix 5



THE CAKERY SITE - SIMPLE WEBSITE

The Cakery was my first ever web development client. I was asked to create a simple website for the opening of an independent cafe situated in the centre of Bath, England. The website was built very simply using HTML, CSS, and JS. However, I had been updating it on a frequent basis.

MAIN TECHNOLOGIES

- Bootstrap
- HTML, CSS, JS
- PHP

To see more development work please visit [appendix 6](#)



HOLO TD - A MIXED REALITY TOWER DEFENCE GAME

Having worked with the HoloLens before, Holo TD was designed to push my development skills further to develop an entirely interactive experience for the user. This tower defence game takes all of the traditional tower defence mechanics but implements mixed reality features such as hand gestures, interactable holograms and voice control.

The game was built using Unity3D and deployed to Microsoft's HoloLens.

TECHNOLOGIES USED

- Unity3D
- Visual Studio
- Cinema4D

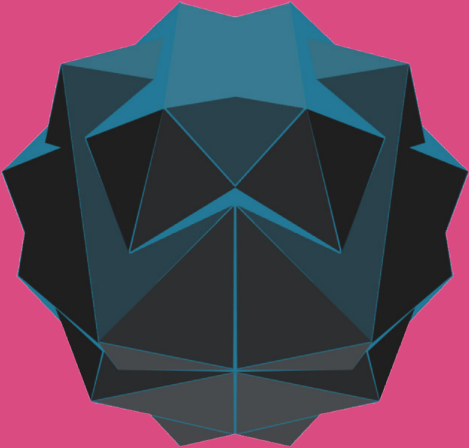
To see more development work please visit [appendix 7](#)

**THANK YOU
FOR
READING**

CONTACT ME

EMAIL: METRIKSPACE@GMAIL.COM

PORTFOLIO LINK: <http://metrik.space/>



APPENDIX

APPENDIX

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APPENDIX - 1

INITIAL DESIGNS



STRESS BAND

Initial designs and blueprints of Stress Band were created in an attempt to brand. However, the overall design of Stress Band was far too dark.

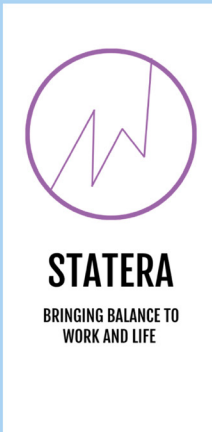
The blueprint of the device was kept for the final version of Statera, however, the new design incorporates a touch screen as requested by the user testing completed.

The name Stress Band was also changed as the word 'stress' was slightly non-inclusive of other mental health illnesses.



STATERA

BRINGING BALANCE TO WORK AND LIFE



STATERA BRAND COLOURS

The primary colour of black was switched to white and a cool purple in an attempt to make the design reflect calmness. However, the result felt slightly aggressive due to the thick black text on white and the jaggedness of the logo.

STATERA

The brand was changed to be called Statera which is the latin for balance. The premise of this name is that this device will help to bring balance to the users work and life/mental health.

The slogan 'Bringing balance to work and life' was then created which helps to bring together the name and device.

STATERA - FINAL DESIGN

The primary colour of the final design of Statera was changed to a cool pastel blue which better reflected calmness and piece of mind which is what the brand aimed for the user to feel when using the product. The white text and logo also help to create this feeling.

The logo was then changed to a brain to symbolise the balance in ones mental health with the statistic type lines inside of it to symbolise data.

APPENDIX - 2

```

<div id="screen2" class="ms-container">
  <h1>SELECT MODEL</h1>
  <div class="model_list">
    <script src="http://ajax.googleapis.com/ajax/libs/jquery/1.7.1/jquery.min.js" type="text/javascript"></script>
    <script>
      var rootRef = firebase.database().ref().child("Models");

rootRef.on("child_added", snap => {

  var model = snap.child("Model").val();
  var model_image = snap.child("Model_image").val();
  var model_name = snap.child("Model_Name").val();
  var ar = ('ar');
  var holder = ('holder');

$(".model_list").append("<div class=" + holder + ">" + "<a href=" + model + " rel=" + ar + ">" +
  "" +
  "</a>" + "<h2>" + model_name + "</h2>" + "</div>");
});

    </script>
  </div>
</div>

```

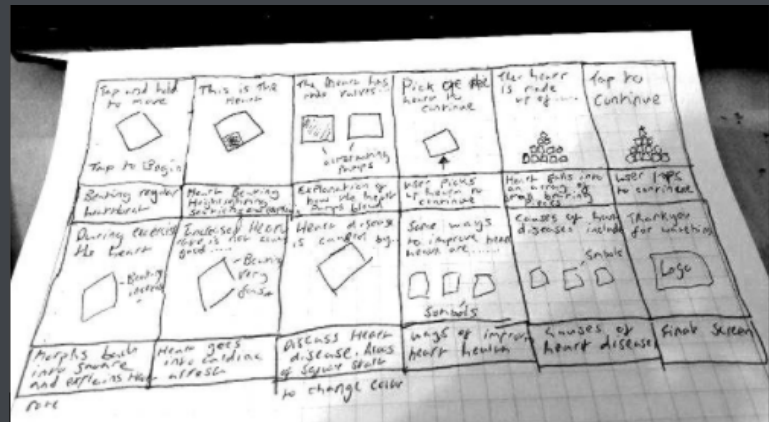
gs://architect-app-9f67f.appspot.com				Upload file	+	:
<input type="checkbox"/>	Name	Size	Type	Last modified		
★	Default security rules require users to be authenticated			Learn more	Dismiss	
<input type="checkbox"/>	model_images/	—	Folder	—		
<input type="checkbox"/>	models/	—	Folder	—		

APPENDIX - 3

23

```

text.text = "AND CONSTANTLY";
yield return new WaitForSeconds(0.75f);
text.text = "PUMBS BLOOD AROUND";
yield return new WaitForSeconds(0.6f);
text.text = "THE BODY";
yield return new WaitForSeconds(0.75f);
text.text = "THIS IS CALLED";
yield return new WaitForSeconds(0.55f);
text.text = "CIRCULATION";
yield return new WaitForSeconds(0.86f);
text.text = "THE HEART BLOOD AND";
yield return new WaitForSeconds(1.2f);
text.text = "BLOOD VESSELS";
yield return new WaitForSeconds(0.8f);
text.text = "TOGETHER MAKE UP YOUR";
yield return new WaitForSeconds(1.1f);
text.text = "CARDIOVASCULAR SYSTEM";
yield return new WaitForSeconds(1.1f);
text.text = "THE RIGHT SIDE OF THE HEART";
    
```



APPENDIX - 4

```

<?php if ( have_rows( 'partners-repeater-homepage' ) ) : ?>
<?php while ( have_rows( 'partners-repeater-homepage' ) ) : the_row(); ?>
<?php $repeater_homepage_image = get_sub_field( 'repeater-homepage-image-2' ); ?>
<?php if ( $repeater_homepage_image ) { ?>
<div class="col-3 icons">
<div class="repeater-feature-block-2">
" />
<?php ?>
<h1>
<?php the_sub_field( 'repeater-homepage-title-2' ); ?>
</h1>
</div>
</div>
<?php endwhile; ?>
<?php else : ?>
<?php // no rows found ?>
<div class="no-rows">

```

```

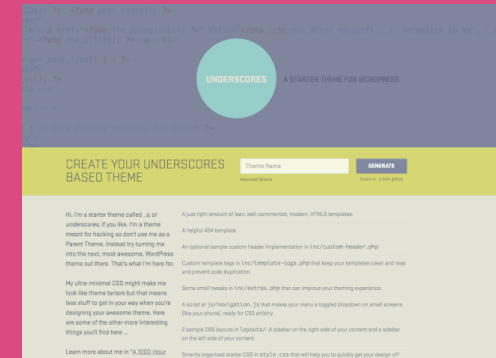
/**
 * Add ACF Options Page For Theme Options
 */
if ( function_exists( 'acf_add_options_page' ) ) {
    acf_add_options_page(
        array(
            'page_title' => 'Website Options',
            'menu_title' => 'Website Options',
            'menu_slug' => 'website-options',
            'capability' => 'edit_posts',
            'icon_url' => 'dashicons-admin-settings',
            'position' => 99
        )
    );
};

```

```

<ion-content padding class="login_page">
<ion-img width="50" height="50" src="assets/logo.png"></ion-img>
<div class="alert alert-danger" role="alert" *ngIf="error_message">{{error_message}}</div>
<form [formGroup]="login_form" (ngSubmit)="login(login_form.value)">
<ion-item>
<ion-label color="primary">Username</ion-label>
<ion-input type="text" formControlName="username" placeholder="Enter username" required></ion-input>
</ion-item>
<ion-item>
<ion-label color="primary">Password</ion-label>
<ion-input type="password" formControlName="password" placeholder="Enter password" required></ion-input>
</ion-item>
<ion-button expand="full" type="submit" class="login_button">Login</ion-button>
</form>
</ion-content>
<ion-footer>
<ion-toolbar>
<div class="btn-wrapper">
<ion-button href="/home">Continue as a Guest</ion-button>
</div>
</ion-toolbar>
</ion-footer>

```



APPENDIX - 5

```
<?php
//begin session
session_start();

//https://stackoverflow.com/questions/18336952/allow-visit-a-page-if-only-came-from-a-specific-page
//link explains how to only allow access to a page via another page
//Checks whether or not SESSION['current_page'] was set on the last page before accessing this page
$_SESSION['last_page'] = isset($_SESSION['current_page']) ? $_SESSION['current_page'] : NULL;
//sets current_page to this page
$_SESSION['current_page'] = 'index.php';

?>

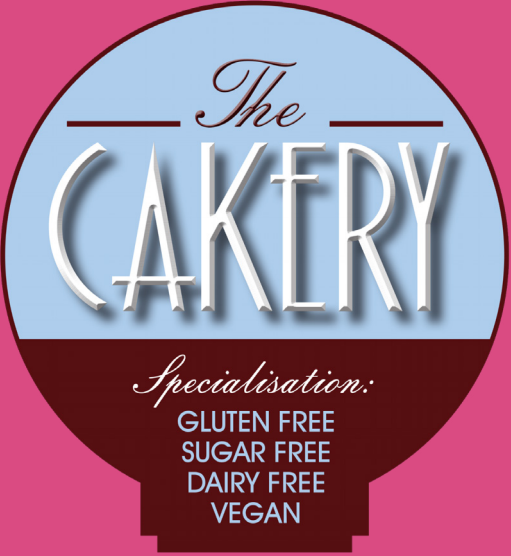
<html>

<head>
```

```
$user_arr[] = array($id,$gender,$age,$country,$time,$ex1,$ex2,$ex3,$ex4,$ex5,$ex6
?>

    <!-- echo data from mysql database to table -->
    <tr>
        <td>
            <?php echo $id; ?>
        </td>
        <td>
            <?php echo $gender; ?>
        </td>
        <td>
            <?php echo $age; ?>
        </td>
        <td>
            <?php echo $country; ?>
```

APPENDIX - 6



APPENDIX - 7

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```
// Define voice command
public string beginCommand = "begin";
//Define keyword recognizer
private KeywordRecognizer keywordRecognizer;
// create array of surfaces
public NavMeshSurface[] surfaces;
// create public attacker and goal
public GameObject attacker;
public GameObject goal;

// Start is called before the first frame update
void Start()
{
    // Check the number of surfaces and build a navmesh on them
    for (int i = 0; i < surfaces.Length; i++)
    {
        surfaces[i].BuildNavMesh();
    }
    // create new keyword recognizer with the begin command
    Debug.Log("attacker not active");
    keywordRecognizer = new KeywordRecognizer(new[] { beginCommand });
    keywordRecognizer.OnPhraseRecognized += KeywordRecognizer_OnPhraseRecognized;
    keywordRecognizer.Start();
}

private void KeywordRecognizer_OnPhraseRecognized(PhraseRecognizedEventArgs args)
{
    string cmd = args.text;

    // If user said "begin", start round
    if (cmd == beginCommand)
    {
        SpawnAgent();
        Debug.Log("attacker active");
    }
}

// spawn gameobject prefab and instantiate to transform toward attackermove script destination invoke spawner every 10 seconds
void SpawnAgent()
{
    GameObject na = (GameObject)Instantiate(attacker, this.transform.position, Quaternion.identity);
    na.GetComponent<AttackerMove>().destination = goal.transform;
    Invoke("SpawnAgent", Random.Range(10, 10));
}
```

