

# Archie Charach

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## BIO

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Leaving university, top of my year with a First-Class Honours, I secured a graduate Technical Consultant position. Sixteen months later, I was promoted as a result of taking direct responsibility for a number of projects and working effectively with clients.

During this time, with the aim of buying my first property, I worked two extra part-time jobs in addition to my full-time role. Just over a year later I celebrated collecting the keys to my first home.

With five years experience and having achieved my goals to date, both professionally and personally, through hard work and determination, I am now ready for the next step in my career.

## SKILLS, TOOLS, TECHNOLOGIES

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C++, Java, Objective-C, HTML, Javascript, CSS, Android ROM development, Bluetooth Classic, Bluetooth Low Energy, HTTP, REST, Qt, Android Studio, Xcode, Visual Studio, Qt Creator, Unity, Git, UX design.

## WORK EXPERIENCE

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### VNC Automotive

*Technical Consultant*

*Graduate Technical Consultant*

**Cambridge, UK**

*Oct 2020 – Present*

*June 2019 – Oct 2020*

#### Key Responsibilities

- Multi-specialist developer for numerous operating systems: Android, iOS, Linux and Windows. Producing high quality and polished demo applications and proof of concepts with a quick turnaround to meet strict internal and external deadlines.
- Technical point of contact for multiple client accounts, providing technical expertise and guidance for the implementation of SDKs and products. Assisting customers with the diagnoses of bugs and swiftly providing analysis and solutions.
- Participate in regular customer meetings and presentation demonstrations to discuss new business prospects. Followed by the composition of statement of work documents to determine the clients technical requirements.
- Developed and delivered on-site training sessions to clients, empowering them to master, install and resell our products.
- Collaborating closely with the Project Owners and management to define and refine product roadmaps focussing on the customers' requirements and timelines.
- Researching and developing new technological advancements in automotive connectivity software.

#### Major Projects

- Emergency services blue light control applications:
  - These Android applications enable first responders to control the vehicles blue light and siren emergency system from the head unit of the vehicle. Data is transferred between the the light controller hardware and the application over a serial connection.
- Blue light control handset configuration tool:
  - Recognising our end customers all have different requirements for their light and siren controller UI, I proposed, designed and developed a web app that allows the user to

configure the UI themselves. The user can modify the layout, button functionality and cosmetics of their virtual controller. This alleviated the internal workload of manually creating and maintaining unique customer customisations.

- Multimedia sharing solution (presented at CES 24):
  - An Android project focusing on vehicle rear seat entertainment. The solution enables users the ability to stream, share and control multimedia between devices on the network. The demo was used as the main attraction for our stand at CES 2024.
- PC and phone mirroring Android application:
  - Using our Cobalt Link+ SDK, once a connection between the devices has been established, the contents of the server's screen is mirrored to the application, enabling full remote control of the server device. The clear and simple UX for the application was favoured and the application is now being deployed as part of our Command Control package.
- R&D wireless event injection to mobile devices:
  - Having been assigned the challenge to wirelessly inject touch events to iOS and Android devices, I deep dived into low level Bluetooth development. Initially developing a solution for Linux, I was then tasked with porting the solution to both Android and Windows. The research has since been productised and embedded within our SDK. With my new found Bluetooth expertise, I also created a Windows sample application which is deployed within our SDK package.
- Custom iOS & Android applications for customer proof of concepts:
  - These applications are rapid prototypes, required on a tight deadline, to support business development. Following the customers UX requirements, the app demonstrates how our Cobalt Link+ screen mirroring solution can be integrated with the customers designs. These are developed for both iOS and Android devices.

## **Brooklands Museum Project**

*Mobile Game Developer*

**Bournemouth, UK**

*March 2018 – June 2019*

- Nominated by Bournemouth University to design and developed an educational mobile game for visitors of the Brooklands Museum Aircraft Factory.
- The aim of the project was to educate younger audiences on the production process of airplanes whilst utilising the educational benefits of gamification. The app was made up of eight mini games, consisting of puzzles, match three games, simulated woodwork and an Augmented Reality section allowing the player to get a full 360 degree view of different wood joints.
- The game was produced in Unity and programmed in C#, for both iOS and Android mobile devices.

## **EDUCATION**

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### **Bournemouth University**

BSc (Hons) Games Programming

- First-Class Honours

*Sept 2016 – June 2019*

### **BHASVIC Sixth Form College**

A-levels

- Computing B
- Math B
- Law B

*Sept 2014 – May 2016*

### **Blatchington Mill School**

- 11 GCSEs A - B  
(Including Maths and English)

*Sept 2009 – July 2014*

# Personal Projects

Full portfolio found at [www.archiecharach.com](http://www.archiecharach.com)

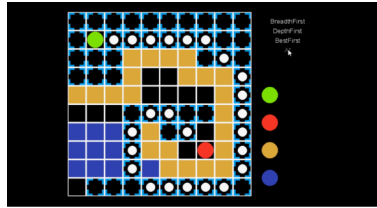


## 3D Game Engine

This project was programmed in C++ and supports a 3D environment using the OpenGL framework.

The architecture of the game engine is a component entity system.

The game engine has many built in features such as: mesh renderer, texture renderer, input handler, static mesh collision, box collision, sound handler and orthographic GUI capabilities.



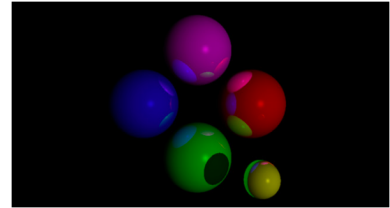
## AI Pathfinding Demo

Programmed in C++ and uses SDL2.

The user places the start and end nodes of the path. The Ai will then produce a path using the selected algorithm.

The implemented pathfinding algorithms include: Breadth First, Depth First, Best First and A\*.

Walls and water blocks can also be added to the grid. Walls cannot be walked through and water blocks add an extra movement cost and is therefore avoided if a cheaper path is available (in A\*).



## Ray Tracer

Programmed in C++ and SDL2.

Three different multithreading techniques have been implemented allowing the user to compare the speeds of the different methods.

Features built into the ray tracer include: Diffuse Lighting, Ambient Lighting, Specular Lighting, Reflections and Shadows.



## RUN

RUN is a first-person shooter game, set in a dark, misty forest, programmed in C++ using OpenGL.

As the player runs through the forest they must dodge not only trees, but the living dead 'zombies'.

The player is only equipped with a hand gun with limited ammunition.

'Pick ups' such as ammo packs can be found throughout the forest helping the player to survive for longer.



## Pharaoh's Tomb

Pharaoh's Tomb is programmed in a 2D environment using C++ and SDL2.

The player, an explorer, must fight his way through an ancient tomb consisting of rats and skeletons.

Throughout the journey, the explorer may come across multiple items improving his statistics. The item drops are random allowing each play through to be different. The player may also have to fight a boss such as the King Skeleton.



## Brooklands Museum

An educational mobile game to go alongside the award winning Brooklands Museum Aircraft Factory.

Consisting of eight mini-games, each game educates the user on the different stages in the airplane manufacturing process.

Created in Unity using C#. Available on iOS and Android.