THE DEPARTMENT OF
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AirTennis – A web-based mobile motion controlled console game

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The decline of video consoles and the rise of a new era.

The recent rapid adoption of smartphone technology has greatly impacted the video gaming industry. In 2008, about 89 million video game consoles were sold worldwide. In 2013, sales were almost half that figure. More people have moved to gaming on their smartphones, instead of video consoles.

After all, *why purchase an entire system dedicated to gaming when there is already one sitting in our pockets?*

VIDEO CONSOLE SALES

2008
89 million
UNITS

2014
45 million
UNITS

Video Console Gaming ≠ Smartphone Gaming

We created a new genre of gaming by bringing the console experience to the mobile.

Our goal was to establish a middle ground between video console gaming and smartphone gaming - to build a platform that is new and yet already exists.

AirTennis was created to demonstrate this.

The basic idea

AirTennis

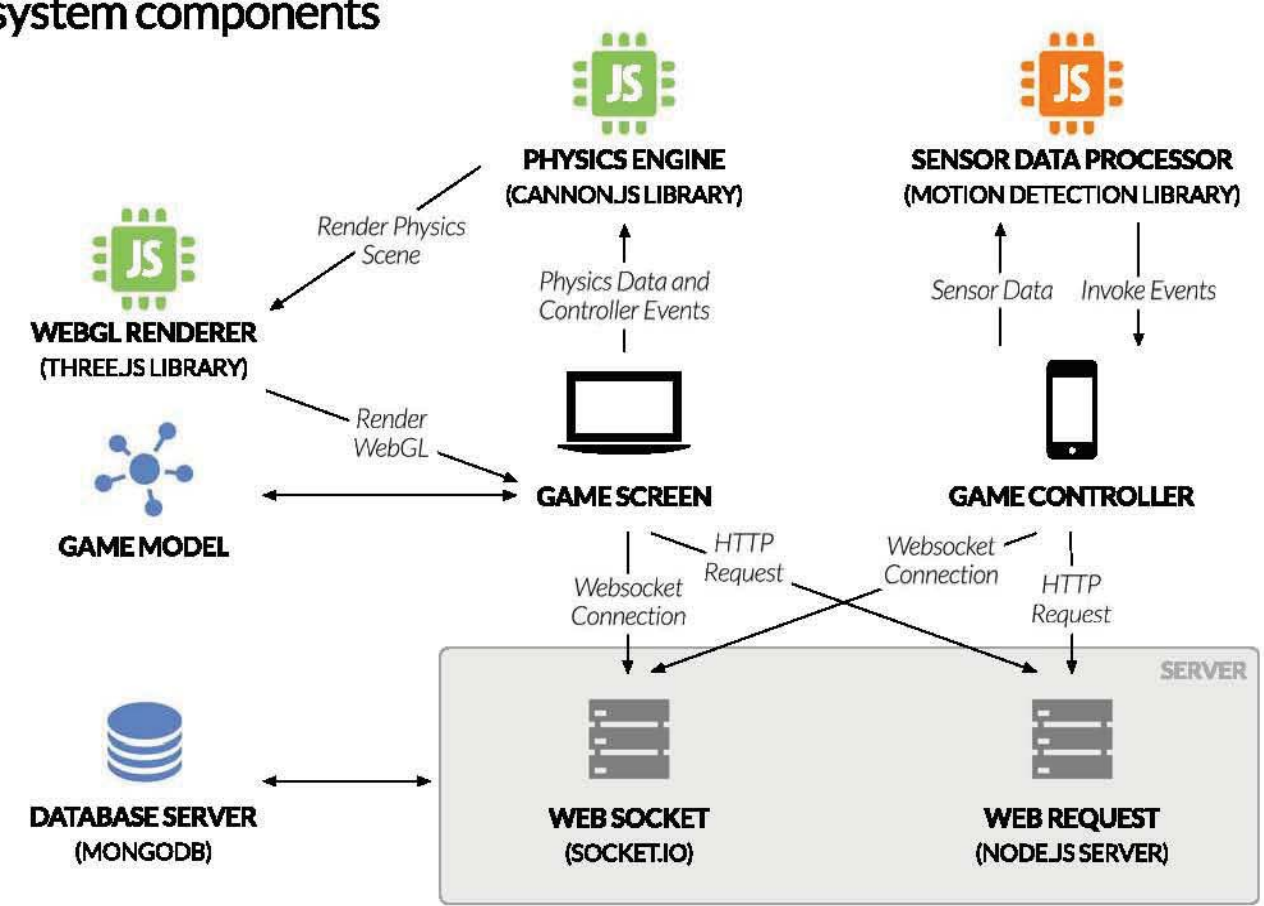Any device equipped with a modern web browser + A smartphone with built-in accelerometer + gyroscope = A motion-controlled video console system

Completely wireless
No wires, no hassle!

Free to use
No extra hardware required.

Play anywhere
Available on the go!

We bring console gaming experience to users at no extra cost by combining the use of devices they might already own, namely, a smartphone and a personal computer (or tablet), where the smartphone acts as a game controller, and the PC or tablet acts as a game screen. Users can use their smartphones to control our web-based 3D tennis game on their PC or tablet, simply by moving their smartphone around like a tennis racquet.

Our system components

PHYSICS ENGINE
(CANNON.JS LIBRARY)

SENSOR DATA PROCESSOR
(MOTION DETECTION LIBRARY)

WEBGL RENDERER
(THREE.JS LIBRARY)

Render Physics Scene

Physics Data and Controller Events

Sensor Data   Invoke Events

Render WebGL

GAME MODEL

GAME SCREEN

GAME CONTROLLER

HTTP Request

Websocket Connection

Websocket Connection

HTTP Request

SERVER

DATABASE SERVER
(MONGODB)

WEB SOCKET
(SOCKET.IO)

WEB REQUEST
(NODE.JS SERVER)

Custom Motion Library

We developed an extendable library for smartphone motion sensing and recognition, built from the ground up using Javascript. It provides functionality for obtaining and standardising sensor readings, as well as recognising different types of user input via sensor fusion. Oh, and it's open source-ready!

Single and Multiplayer Modes

We've implemented three difficulty levels for our AI in the single player mode: easy, medium and difficult. Playing against a friend? We've got you covered! With our multiplayer networking implementation, you can simply create a room and get a friend to join using your unique room code.

Cross-Platform Compatible

Our entire project is web based. The game is WebGL driven, our mobile and desktop clients are developed using web technologies – it literally works everywhere, across different devices and platforms: iOS, Android, Mac, Linux, Windows... Just make sure your browser is up-to-date and you'll be good to go!

Open Source Ready

Our motion recognition library is open source ready – we built custom APIs that can be used by developers to create their own Wii-like motion controlled games. What are you waiting for? Contribute to our library and let's change the way console games are to be played!