

Mark H Carolan - software designer and developer

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PROFILE

I specialise in designing and developing highly interactive software products for education, entertainment, promotion, work safety and training, for delivery on desktop, mobile and VR. I can communicate clearly with management and stakeholders, assist with budgeting, mentor junior developers and coordinate artists.

VR - which may be pure CGI, 360 video, or a mixture of both - is powerful and immersive and offers superior user retention, but does require practical industry knowledge to render it a comfortable experience.

I can work efficiently on-site or remotely. Most of my work involves seeing a product through from inception to deployment.

Examples of my work are available upon request.

In summary

Generalist software designer and developer, specialising in

- Real-time interactive 3D
- Virtual Reality
- Educational games and work training software
- Directing of complete production pipeline
- General mobile and desktop software development

SKILLS / EXPERIENCE

- Multi-platform software development (Windows, OS X, Android, iOS, Oculus)
- Real-time 2D and 3D graphics, sound effects and spatial audio
- Unity 3D game and simulation development for desktop, mobile and VR
- Proficient in C#, C++, ANSI C and Lua
- Broad experience in developing reusable software frameworks and development tools
- Experience in performant network communications (TCP & UDP Sockets, HTTP, REST etc)
- Documentation and technical writing

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- Technology evaluation for new product development
- Game development: in particular, casual games and gamification of educational material

WORK HISTORY

BUSY At Work - Southport QLD

October 2018 - end September 2019

Position Held: Unity VR developer

- Designed and developed a series of VR educational games for Oculus Go delivery
- Created basic artwork and animations with Blender
- Coordinated specialist artists for custom biped animations and facial expressions
- Worked to a small time-frame and tiny budget
- Multiple games required in single app, so built framework for managing this

Product: [VApprentice](#)

VRLearn/Panedia - Southport QLD

January 2016 – August 2018

Position Held: Designer and developer of VR safety training products for clients including Qantas, BodyCare and Gold Coast University Hospital. Worked with a back-end developer for scoring, logging and stats (such as heat-mapping of user head movements).

Product suite included VR app for Gear VR and Oculus Go (also available on Rift and Windows MR) and a companion mobile Android app for logging in, course management (supervisor, teacher and pupil modes), live statistics and remote control and synchronisation for group training.

Products: [VRLearn](#), [PlayVR](#)

4D Pipeline (Remote - USA, Germany, Singapore)

February 2013 - January 2016

Position Held: Senior developer in consultancy specialising in interactive 3D, real-time ray-tracing software and VR. Produced Oculus Rift VR car simulator for a US manufacturer, released at the 2015 Detroit Motor Show. Worked with FlexNet for upgrading the licensing systems in high-end software. Created plugin for architectural CAD app that provided interactive rendering, IES lighting and proxy objects for cloud loading, connecting to NVIDIA iRay.

Developed educational software for a holographic system and extensions to 3D authoring tools.

Products: [various](#), subject to NDAs but I am authorised to show examples privately.

FenceKit

February 2003 - December 2012

Moved from Canberra to help restart the family aluminium importing business. Developed machinery for weldless fabrication of fence panels (licensed patented tech from North Queensland)

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inventor). Ran general business, developed relationships with manufacturers, designed custom extrusion profiles using IntelliCAD.

During this period, I created iOS apps in my own time, released in the App Store, including a 3D animation matching-game, an iOS game developed with a Cognitive Scientist based on the Stroop Test, and a wavelet-based monophonic instrument note-reading trainer (see end of CV).

QuiteSensible (sole trader)

February 2002 – December 2003

Position Held: Self-employed software developer and consultant specialising in 2D and 3D interactive graphics. Developed Powerbullet Presenter, an animation tool for creating Flash-compatible web productions (Windows, C++).

Products: Powerbullet Presenter (see end of CV)

Knight Frank Price Waterhouse

March 2000 – January 2002

Position Held: Contracted as specialist 3D and inter-process communication developer for a new embassy property management system for the Department of Finance and Administration (Java, Oracle PL/SQL, Perl).

Product: e-Premisys (internal application for use by Australian embassies)

Early work

Includes web client connection tools for start-up Amicus (Mac, Windows, C++), in-house game development tool for Brilliant Digital Entertainment (C++, MFC, SQL), voice announcement system for NSW State Rail for Open Access (ANSI C), multimedia educational development system for Big Animated Digital (Director, C). More information available on request.

Back in the '90s I was an occasional [tech writer](#) for Dr Dobb's Journal.

Prior to software development, I ran a consumer audio importing, distribution and servicing business and was owner/operator of a digital audio post-production studio (based on the Fairlight MFX) in the Sydney CBD.