Kailas Dierk

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A games and simulation programmer

My name is pronounced *kai-lash*

I have been a professional programmer since 2010, primarily using Unity to build games for Android and educational simulations for PC, as well as developing various tools and extensions for Unity itself.

Skills

- Languages: **C#**, C++, Java, JavaScript, HLSL, CG
- Platforms: **PC**, **Android**, iOS, Arduino
- Engines: **Unity**, Ogre, SFML, Low Level Direct X, Android OS
- Applications: **Visual Studio**, Photoshop, Illustrator, Audacity, Git, SVN, Azure DevOps
- Shaders, VR, networking, multithreading, procedural content and code generation, in-app purchases
- Real-time motion capture, facial expression tracking, and voice morphing
- Rapid prototyping, iterative development, refactoring, optimisation, documentation, support
- Identifying development issues and implementing tools to streamline the production pipeline
- Working in a team with programmers and artists, as well as with clients and subject matter experts
- Agile and Scrum development methodologies

Experience

Dates	Company	Role	Team	Main Project
2016-2018	QinetiQ	Simulation Developer	4	Avatar Augmented Role Play
2015-2018	Self-Employed	Tool Developer	1	Various Unity plugins
2013-2014	Self-Employed	Game Developer	1	Mobile games: Baller and Portal Story
2011-2012	QinetiQ	Simulation Programmer	12	Virtual Reality Mining Simulation

Page 2 has more details about the specific projects I've worked on.

Education

2011-2012	Qantm College	Bachelor of Interactive Entertainment (major in Game Design)
2009-2010	Qantm College	Bachelor of Interactive Entertainment (major in Game Programming)

References

Jon Newell	Martin Schmidt, Ph.D.	Cameron Gibbs
Simulation Engineer QinetiQ	Chief Operating Officer Biarri EMI	Team Lead & Senior Software Engineer Fugro
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Projects

Avatar Augmented Role Play

2016-2018 QinetiQ 1 programmer (myself) and 3 modellers

We used Unity to develop a role playing tool for the Australian Defence College Simulation Centre. It utilised real-time full body and facial expression tracking, voice morphing, and streaming of motion, video, and audio data over a network. The result was similar to a video teleconferencing system, except that instead of seeing the instructor, students actually see a life-like avatar controlled directly by the instructor's movements and expressions, allowing them to role play interactions with people of any age/gender/ethnicity/etc.

We also designed and built a photogrammetry scanning system to take photos of a person from every angle which would then generate a highly detailed and realistic 3D model of that person to use as an Avatar.

Trade Shows – Avalon Air Show and Pacific Maritime Exposition

2017 QinetiQ 1 programmer (myself) and 1 modeller

I used Unity to develop an iOS VR app using Google Cardboard for Avalon: the QinetiQ Experience Zone.

I also attended the trade shows to assist with setting up displays and introducing the company to guests.

Unity Plugins and a Shader

2013-2018 Self-Employed Solo

I developed various Unity plugins (including user documentation) and released them on the Asset Store:

- Animancer: a dynamic animation system which is much more flexible than Unity's default systems.
- Weaver: a procedural asset generation and workflow improvement system.
- Inspector Gadgets: a custom transform inspector with various other editor tools and utilities.
- Link & Sync: a simple tool for synchronising asset files between projects.
- Simple Sun Shader: a procedurally animated sun with various parameters to tweak its appearance.
- Ult Events: a persistent callback system with better features than the inbuilt Unity Events.

Mobile Games

2013-2014 Self-Employed Solo

I did lots of prototyping and developed a few Android games through to release on the Google Play Store:

- Baller: a gravitational maze puzzle game.
- Portal Story: a portal based puzzle game.

Virtual Reality Mining Simulation

2011-2012 QinetiQ 5 programmers (including myself), 4 modellers, and 3 animators

We used Unity to develop a mine safety training simulation for Coal Services. The training consisted of various scripted scenarios in fully detailed underground and open cut mine environments. It ran on a synchronised cluster of six computers which projected it onto the walls of a 360-degree theatre to give a fully immersive experience. YouTube Video: QinetiQ Virtual Reality Mining Capability Examples.