

Lucas Zadrozny

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Software engineer with three years of professional experience, coder with ten years experience.
Currently holds a level 1 security clearance.

Education

- School Certificate (2008)
- Higher School Certificate (2010)
- Bachelor of Computer Science (2014, Major in Software Engineering, Distinction, University of Wollongong)

Programming Languages

- C/C++/CWEB
- C#/C++/CX
- Java
- Bash
- Batch
- FORTRAN
- Lisp
- Prolog

Software

- Visual Studio
- Eclipse
- Git
- SVN
- Mercurial
- Perforce
- Photoshop

Operating Systems

- Windows
- Android
- Ubuntu Linux

Devices

- Oculus Rift
- HTC Vive
- Leap Motion
- Meta DK1

Professional Experience

Cirrus RTPS

July 2015 - Present

Sydney, NSW

Junior Software Engineer

- Constructed and maintained multiple embedded Windows Store Apps.
- Designed and implemented core servers for multiple product lines.
- Extended the Cirrus RADAR simulation to include rendering and attenuation of weather systems.
- Diagnosed and resolved graphics rendering issues.
- Maintained the public web site.
- Mentored graduates in C++ and project details as they joined the company.

ResMed

March 2015 - June 2015

Bella Vista, NSW

Graduate Validation Engineer

- Performed rigorous manual testing on the ResMed website.
- Designed and implemented an automated testing method using Selenium for the ResMed website.

Personal Activities

My first love is programming. Because of this I have, and continue to work on personal and collaborative programming projects in my spare time. Some of these projects are listed below.

Frontier

July 2016 - Present

Personal

A VR-simulation title that renders planetary DTM data collected by NASA

- Created with a custom game engine using OpenGL ES 3.0.
- Built to be highly efficient on low speed devices such as Android phones.
- Designed a shared architecture allowing the same code to run multiple platforms (PC/mobile).

- Primarily constructed as a VR experience for the HTC Vive and Samsung GearVR.
- Capable of rendering DTM data from any planet.

Links

- <https://www.youtube.com/watch?v=tV7p6lh4F8w>

Pathways into Darkness

June 2011 - January 2016

Personal

A reimplement of Bungie's 1993 title of the same name.

- Built with a custom game engine (with OpenGL ES 2.0) which mimics the original game.
- Designed a shared architecture allowing the same code to run multiple platforms (PC/mobile).
- Implemented all aspects of the game engine (graphics, sound, physics, 2D & 3D ray tracing, input, AI, etc).
- Reverse engineered the original data structures and created algorithms from scratch to fit those structures.
- Support for the HTC Vive, Oculus Rift and Samsung GearVR HMDs.

Links

- Gameplay: https://www.youtube.com/watch?v=6V8NgZ1_rtl
- Ray tracing view (same level): <https://www.youtube.com/watch?v=-2erHo30R7M>

Black Mesa

October 2013 - May 2015

Team

A video game reimagining the classic title "Half-Life" built for the Source Engine.

- Communicated with programmers and artists to determine new feature requirements and resolve software defects.
- Collaborated with the entire team to shape aspects of the game design.
- Designed and implemented multiple game systems.

Links

- www.blackmesagame.com

Giant Leap

November 2014

Part of final Uni project

World first - Using multiple Leap Motion devices within the same application.

- The first (and currently only) publicly demonstrated driver capable of using multiple Leap Motion devices within the same application.
- Allows for a significantly increase in hand tracking volume.
- Also allows for a much better signal-to-noise ratio in bone tracking.
- Functions as a drag-and-drop replacement of the original Leap Motion driver.

Links

- <https://www.youtube.com/watch?v=R9Q5IK4e-3k>

DroidSLR

December 2013 - February 2014

Personal

Pentax DSLR controller for Android

- My Pentax camera is limited to 30 second exposures, so I used an Android tablet to manually control the camera to increase exposure times to whatever I wanted.
- Ported pkTriggerCord to Android.
- Analysed and debugged the pkTriggerCord driver.
- Was constructed before pkTriggerCord was ported to Android by the original author.

Links

- N/A

Interests

While programming is my first love, I am also passionate of some other areas. These are astronomy, photography and motor racing. More information about these can be found below:

- www.lucasz.net/astrophotography.html
- www.lucasz.net/photography.html
- www.lucasz.net/motorsport.html