# 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.

## Highest Education Achieved

- 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

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## Professional Experience

**Cirrus RTPS** **July 2015 - Present** **Sydney, NSW**
*Junior Software Engineer*

- Constructed and maintained multiple embedded Windows Store Apps.
- Designed, implemented and extended 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.

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## 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.
- Designed a shared architecture allowing the same code to run multiple platforms (PC\mobile).
- Built to be highly efficient on low speed devices such as Android phones.
- 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 reimplementation 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_rtI
- 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

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## 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