# LeJon McGowan

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## *Education*

**Cal Poly San Luis Obispo** **12/2017**

*Bachelor of Science: Software Engineering*

## *Employment*

**Developer, Nexus Shift Games** **12/2014 - 8/2017**

- Main developer for a large-scale android app for an upcoming, custom tabletop RPG campaign
- Integrated several technologies, including the game framework LibGDX and asynchronous library RxJava
- Constructed and implemented creature creation pipleine pipeline. Includes a JSON structure to define a monster's hierarchy, and a custom application for designers to create new, game-ready assets and logic for the app

**Intern, Zenith Insurance IT** **6/2013 - 9/2013**

- Implemented front-end intranet site for consolidating and displaying important data analytics on company IT servers

## *Languages/Tools*

| | | | |
|---|---|---|---|
| *C/C++* | *OpenGL* | *Android* | *Linux and Windows OS* |
| *CMake* | *Java* | *Python* | *HTML/CSS/Javascript* |
| *Maya* | *Unreal Engine 4* | *Unity* | *SVN, Git* |

## *Projects*

**C++ Eulerian fluid solver** **3/2017 - 12/2017**

- Developed accurate solver capabe of rendering high-quality scenes
- Implemented several different grid data structures, complete with methods to perform sampling and vector operations at each data point
- generates a .obj file after each frame, to be rendered in Blender

**Monte Carlo Ray Tracer** **3/2016-6/2016**

- Learned of and implemented cameras, intersection of polyhedra, materials, reflections and refractions
- Made use of Monte Carlo sampling to create accurate lighting, and used BVH acceleration to minimize intersection tests
- Currently re-designing infrastructure, based on Matt Pharr's *Physically Based Rendering* for features like textures and volumetric scattering

**General Dynamics Sense and Avoid Air Traffic** **9/2015-6/2016**

- Created high-level mocks and UML diagrams to communicate layered software structure
- Compared several algorithms to determine best approach to consolidating, interpreting, and deciding on how to guide a drone
- Made use of unit and integration tests to ensure correct functionality

**OpenGL 3D L-System** **12/2014**

- Applied concept of turtle graphics to create a procedural generation structure
- Implemented several famous fractals, including the dragon curve, the Koch snowflake, and the Sierpenski Triangle
- Used a custom generation algorithm to create a 3d tree and simulate basic wind

## *Competitions*

**Intel XDK Game Hackathon, Cal Poly** **2/2015 (1 day)**

- Created a mobile, Tower-defense game in 24 hours using Intel's new XDK Javascript framework
- Featured by Intel at Game Developer Conference 2015

**Global Game Jam, Cal Poly** **1/2015 (1.5 days)**

- Placed 2nd. Made with C++ library SFML

**Cal Hacks, University of California, Berkeley** **11/2014 (3 days)**

- Developed Chromecast application for centralized collaboration between multiple mobile devices