

# Ezekiel Gutierrez

Software Engineer  
Game Developer

**Links:** Code Samples and Demos  
Portfolio - <https://zikiguts.github.io/>  
GitHub - <https://github.com/Zikiguts/>  
LinkedIn - <https://www.linkedin.com/in/ezekiel-gutierrez/>

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## Skills

- C/C++, Python, Java, C# and FreeBASIC
- Entry Level Assembly Programming x86
- Pre-Calculus Level Mathematics
- Unix Shell Scripting and Terminal Navigation
- TCP Networking with Windows and BSD Sockets
- Speed Optimized Algorithm Implementation (e.g., flow fields, depth sorting, graphics routines, etc.)
- Git - Fast Version Control
- Cross Platform Development - Linux and Windows
- Software Rendering and 3D Geometry
- Memory Level Graphics Buffer Manipulation
- Graphics Rendering Optimizing (e.g., clipping, LOD(level of detail), etc.)
- Object Oriented Game Engine Design
- Irrlicht 3D Graphics and Game Engine API
- OpenGL API
- Game Development Tools - Blender, Gimp, Paint.net

## Accomplishments / Development Experience

### Basic Warfare

[https://store.steampowered.com/app/1213780/Basic\\_Warfare/](https://store.steampowered.com/app/1213780/Basic_Warfare/)  
<https://zikiguts.github.io/basic-warfare/index.html>

Published independent game “Basic Warfare” strategy game to Steam platform. This included the design and development of a custom 3D ASCII(American Standard Code) game engine. Also included the creation of all music, art, and game assets as well as design of strategic gameplay. Game features a custom UI(user interface) library and cross platform networking with Winsock and BSD sockets. Video data compression with custom RLE (run length encoding) algorithm. Pushed through Steam review process and brought from marketing to a financially successful game title.

### Millicent Choi

<https://zikiguts.github.io/millicent-choi/index.html>  
<https://github.com/Zikiguts/millicent-choi>  
<https://github.com/Zikiguts/cfbgfx>

Isometric stealth game project developed in C++ using a custom wrapper to interface with rendering functionality. Performed pixel level sorting through direct image memory buffer access. Featured algorithms for fog of war and high speed isometric sorting. Game also features a triggered event scripting system and a highly capable built in real time graphics editor. Code available on GitHub

### Narnia The Golden Age

<https://www.indiedb.com/mods/mount-and-blade-narnia-mod>

Led development team for a “Mount & Blade Warband” module. Communicated the projects vision and coordinated work with team members and contributors. Worked with a Python module system and community development tools to develop new game mod features while building an in depth knowledge of the existing game engine’s structure.

### The Mysterious Stranger

<https://zikiguts.github.io/the-mysterious-stranger/index.html>

Isometric city builder RTS(real time strategy) game featuring dynamic map loading and many agent pathfinding using flow fields. Interfaced with SDL's mixer for audio playback. Steam API integration performed through a custom wrapper.

### To Face The Bullets

<https://zikiguts.github.io/to-face-the-bullets/index.html>

2D aircraft simulation game with a flight physics model and custom designed particle effects engine. Features pixel perfect collision detection algorithm.

### Software rendered 3D projects

<https://zikiguts.github.io/software-voxel-world/index.html>

3D voxel game engine with collision detection and rendering optimizations including LOD, camera clipping, and fogging.

<https://zikiguts.github.io/3d-modeling/index.html>

A polygon modeling program with texture painting and mapping. Built from a custom software rendered 3D engine with support for 3D display technologies.

### OpenGL Cube World

<https://zikiguts.github.io/opengl-heightmap/index.html>

Construction game with heightmap generated worlds built with OpenGL API.

### Animation Software

Developed skeletal animation and rotoscoping software with YouTube or video player integration.

### Graphics Demos

<https://zikiguts.github.io/isometric-water/index.html>

A physics simulation of water by Euler integrator displayed in isometric tiles.

<https://zikiguts.github.io/fireworks/index.html>

Configurable fireworks graphics demo with motion and tiling blur.

### Inventory Software

Developed and maintained custom inventory management software with barcode indexing and pricing assistance. It also featured POS(point of sale/cash register) functionality.

Employment History

<b>FDM – Contractor with Russell Investments</b> Worked remotely in a professional team environment on back and front end development for Russell Investments main website and tools.	<b>09/2022 - Present</b> Talihina, OK
<b>FDM – Software Developer Trainee</b> Application development training for Java and C# using unit testing and mocking. Other training included SQL, Git, UML, Shell Scripting and OOP principles and practices.	<b>05/2022 - 08/2022</b> Talihina, OK
<b>Bog Iron Games – Self Employed Game Developer</b> Developed original game titles and graphics rendering engines with low level programming in FreeBASIC and C/C++.	<b>12/2018 – 02/2019</b> Fort Worth, TX

Education and Certifications

Advanced Mathematics w/ Trigonometry Saxon Physics Python for Data Science, AI & Development Python Project for AI & Application Development C for Everyone: Structured Programming Introduction to DevOps Introduction to Agile Development and Scrum (with Honors) Logic I & II	<b>High School</b> 2013 - 2017  <b>GPA: 3.65</b>
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Languages

French - Limited working proficiency	Spanish - Limited working proficiency
English - Native or bilingual proficiency	Korean - Elementary proficiency