

# Roland Munguia

Software Engineer

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## Projects

**Engine and Gameplay Programmer** – Custom C++ Engine Aug 2019 – May 2020  
Arc Apellago | 2D Floating-Island Action Platformer 12 team members

 [Available on Steam](#)

- Collaborated with game designers to implement player movement, player attacks, and enemy AI.
- Implemented game asset hot loading improving development pipeline efficiency by 100%. (Sprites, Animations, Textures and Shaders).
- Developed in-game resource management system using data serialization enabling on-demand loading.
- Empowered artists with custom sprites and frame-independent animation systems.
- Supported cross-platform development by providing bugs fixes to non-compliant code.

**Gameplay Programmer** – Custom C Engine Jan 2019 – Aug 2019  
DeltaBlade 2700 | 2D Local-Multiplayer Action Platformer 11 team members

 2019 & 2020 PAX West DigiPen Arcade - Featured Game.

 [Available on Steam](#)

- Gameplay programming: Player movement & combat, collision, hurt/hitboxes, and state machine.
- Developed 2D lighting and dynamic shadow mapping using GLSL and batched shadow data improving performance by 50%.
- Implemented 2D collision detection to support core gameplay.
- Improved graphics quality of the project by developing visual effects and shaders.
- Assisted in the completion of Steam's technical requirements to publish the game.

**Gameplay Programmer** – Custom C with Framework Oct 2018 – Dec 2018  
Gunslinger | 2D Action Gun Duel 4 team members

- Gameplay Programming: Slow-motion mechanics, frame-independent camera, and animation systems.
- Guided gameplay design, sound effect implementation, and game polish.

## Open Source Projects

**CSYS** – Cross Platform C++ Console Library May 2020 – Jul 2020

- Implemented full/partial auto-complete, command history, script support and custom command logging.
- Led test driven development writing 110 unit-tests with 80% code coverage.
- Designed how the client will interact with the library and its functionality.
- Managed continuous integration, build system and unit testing to ensure library correctness and stability.

## Education

**B.S. in Computer Science in Real-Time Interactive Simulation** Expected 2022  
DigiPen Institute of Technology

**Relevant coursework:** Algorithm analysis, Data Structures, Operating Systems, Networking, Linear Algebra, and Computer Graphics.

## Skills

### Languages:

C++  
C  
GLSL  
Lua  
C# (Familiar)

### API & Tools:

C++ STL  
Git + LFS  
SVN  
Valgrind  
Doxygen  
GNU Make  
CMake  
OpenGL  
ImGui  
Travis CI  
AppVeyor

### Software:

Unreal (Learning)  
Unity (Familiar)  
Game Maker Studio  
Microsoft Visual Studio  
Jetbrains CLion

### Technical Skills:

Game Programming  
Game Engine  
Graphics Programming  
Linear Algebra  
Algorithms  
Data Structures

### Platforms:

Windows  
Linux

### Soft Skills:

Leadership  
Teamwork  
Time Management

### Methodologies:

Agile Development

### Spoken Languages:

Spanish (Fluent)  
English (Fluent)