# Alonso Jesús Cerpa Salas

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## About Me

I am a Computer Science bachelor with self-learning capabilities that is very interested in video games development, programming and Computer Graphics. I consider that self-learning is very important to adapt to new technologies that arise in the industry and also to learn from other people that are more experienced or capable than ourselves. With this mindset I have worked on some companies and also independently developed a 3D graphics engine named "Neon Engine" from scratch. The engine, showcased in my repository at **[repo link]** and demonstrated in a video available at **[video link]**, reflects my commitment to exploring the realms of OpenGL, rendering techniques, and graphics theory and algorithms. Through self-directed learning using diverse resources including web-based materials and reference books, I have gained valuable expertise in Computer Graphics, leveraging languages and libraries such as C++, OpenGL, glm, assimp, and Dear ImGui. My journey has shaped me into a responsible, honest, hard-working, and team-oriented individual.

## Work Experience

**MetaCERV** June 2023 - Present

*Unity developer/C# programmer* *Arequipa, Peru*

In MetaCERV I have worked on Unity projects that run on web browser and VR headsets. In the company we have created simulation environments for mining corporations so that they can train its employees. In particular, I have worked on many C# scripts that include programming gameplay features (interactions, input systems), animations using Animator, configuring collisions of game objects, user interfaces, create a video player for VR, integrate ChatGPT in Unity with Text To Speech (TTS) from Google Cloud Platform, integrate AWS video streaming services to work in Unity to share screen.

**Prociencia Perú** June 2020 - June 2022

*Researcher* *Arequipa, Peru*

I had the opportunity to serve as a researcher as part of the CONCYTEC-WORLD BANK Project titled "Improvement and Expansion of the Services of the National System of Science Technology and Technological Innovation" in Peru. During my tenure, my team successfully published two papers of notable significance. The first paper was presented at the prestigious "2020 33rd SIBGRAPI Conference on Graphics, Patterns, and Images (SIBGRAPI)," while the second paper was featured in the esteemed "International Symposium on Visual Computing (ISVC 2021)."

**Global Initiative against Transnational Organized Crime** May 2021 - Dec 2021

*Software Engineer* *Remote*

Within the Resilience Fund Fellowship 2021 program, I was commissioned by a fellow to research, design, implement, and document an Android/Web application. The goal was to collect geographic points on a map, specifically tracking crime incidents in Peru. Employing data mining, web scraping, Python, Beautiful Soup, and Deep Learning techniques, I developed the application using Flutter, Google Cloud, and Firebase.

## Projects

**Neon Engine** **Link to Github Repo**

Neon Engine is a graphics engine that I personally implemented from scratch in C++ with key libraries such as OpenGL, glm, ImGui, and Assimp. Neon Engine allows the user to upload 3D models with PBR textures and skeletal animations. Users can perform 3D transformations, incorporate diverse lighting, and enhance visuals with HDRI maps for Image Based Lighting (IBL). Real-time material manipulation enhances the engine's immersive experience.

## Education

2015 - 2021 Bachelor's Degree in Computer Science at "Universidad Católica San Pablo".

## Publications

Salas, Alonso J Cerpa et al. (2020). "Training with synthetic images for object detection and segmentation in real machinery images". In: *2020 33rd SIBGRAPI Conference on Graphics, Patterns and Images (SIBGRAPI)*. IEEE, pp. 226–233.

Cerpa, Alonso et al. (2022). "Ensemble Learning to Perform Instance Segmentation over Synthetic Data". In: *Advances in Visual Computing: 16th International Symposium, ISVC 2021, Virtual Event, October 4-6, 2021, Proceedings, Part II*. Springer, pp. 313–324.

## Skills

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| Languages | English, Spanish |
| Soft skills | Responsible, hard-worker, honest, team-worker |
| Programming | C++, Python, OpenGL, glm, assimp, Dear ImGui |
| Math | Linear Algebra, 3D Math for Video Games, Discrete Mathematics |
| Computer Science | Computer Graphics, Data Structures and Algorithms, Deep Learning, Cloud Computing |
| Game Engines | Unity, Unreal Engine 5 |