Joan Ramos Refusta

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About me

As a **3D Software Engineer**, I am deeply passionate about graphics programming and the video game industry. With **more than 3 years of experience** in the industry, I have refined my expertise in various graphics-related domains, including **Three.js, Unity, Blender, and GLSL**.

Throughout my professional journey, I have actively engaged in **Game Jams** and collaborated on diverse projects within cross-functional teams, making significant contributions to the success of numerous high-caliber endeavors. Presently, I am actively seeking to advance my career within the **video game industry** or **3D graphics programming** sphere. I am eager to apply my skills to tackle challenging projects and perpetuate my trajectory of professional growth.

Education

Universitat Politècnica de Catalunya   *Barcelona, Spain*

Bachelor's degree in Informatics Engineering   *Summer 2021*

- Specialization in **Computation**
- I have specialized in areas such as **graphics programming**, artificial intelligence, **computational geometry, shaders and video games**.

Work Experience

NOMOKO A.G.   *Swtizerland, (remote from Spain)*

3D Software Engineer   *July 2023 - November 2023*

- Joined the **Level of Detail (LOD) model development team**, specializing in the visualization of 3D models and determining LOD selection based on camera focus and memory constraints.
- Developed a custom JavaScript and **Three.js plugin** to interpret proprietary models, facilitating their display within Three.js.
- Extended the plugin to seamlessly **adapt models for integration with various mapping platforms** such as Mapbox, Google Earth, Google Maps, and other mapping services, facilitating dynamic georeference and visualization capabilities across multiple environments.
- Investigated the **integration of the plugin into other** services such as **game engines** like Unity or Unreal Engine 5.
- Continued to provide maintenance and support for the 3D component of the real estate application while also joining the LOD team, ensuring seamless operation and **ongoing improvement of the visual aspects** of the platform.
- **Developed Skills:** Three JS, Blender, MapBox, Google API, GLSL, Unity, Unreal Engine 5, 3D Math, Jira, Git.

Junior 3D Frontend Developer   *August 2022 - July 2023*

- Collaborated with a three-person team to develop 3D model visualization for a real estate application. Utilized Three.js to create dynamic and **interactive 3D models** integrated into the web platform. Additionally, **implemented geolocation** functionalities using MapBox to accurately place and visualize 3D models within a map interface.
- **Implemented custom GLSL code** to modify the appearance of models, providing tailored visual effects and enhancing the overall aesthetics of the application.
- **Designed and developed tools** to empower designers in making more informed decisions regarding the final appearance of assets. These tools facilitated streamlined design processes, allowing for greater flexibility and control over the visual aspects of the application.
- **Developed Skills:** JavaScript, TypeScript, React, Three JS, MapBox, GLSL, 3D Math, Jira, Git.

FLOORFY   *Barcelona, Spain*

3D Software Engineer   *July 2021 - April 2022*

- Extended the project post-internship by incorporating **lighting, shadows, and reflections** into the scenes, enhancing overall visual quality and realism.
- Played a pivotal role in **optimizing the application** for peak performance by **creating a custom geometry storage format** and refining textures into a **texture atlas for optimal efficiency**.
- **Developed Skills:** Three JS, JavaScript, GLSL, Blender, 3D Math, Jira, Git.

University Internship and Final Degree Project   *November 2020 - July 2021*

- Led the development of a Three.js project for a real estate application, enabling users to furnish properties using 3D furniture models. Managed the **entire project lifecycle**, from concept to implementation, ensuring seamless integration and user-friendly functionality.
- Implemented customization options for 3D models, allowing users to **modify colors, textures, and materials** to their preferences. Additionally, **developed intuitive controls** for users to adjust position, rotation, and scale of the models, enhancing user interaction and customization capabilities.
- Designed and implemented an **OBB collision system** to ensure precise alignment of 3D models within various polygonal spaces within a room, optimizing spatial integration and enhancing visual accuracy.
- **Developed Skills:** JavaScript, React, Three JS, MapBox, GLSL, 3D Math, Jira, Git.

Side Projects

Joan Ramos Refusta Portfolio Website
joanramosrefusta.com

Interactive 3D Portfolio made with Blender, Three.js, and GLSL
January 2024 - April 2024

- Developed a personal website inspired by my desktop setup using Blender, Three.js, GLSL, and JavaScript, creating an interactive experience that **reflects my personal style** and showcases my **technical skills in 3D design and web development**.
- Integrated advanced rendering techniques and **GLSL shader programming** were employed to achieve an immersive presentation.
- Utilized Blender for **composition, texturing, lightmapping and modeling** of elements.
- Utilized **game programming** knowledge and **3D mathematics** to develop interactive features such as a Rubik's Cube and a Whiteboard.
- Integrated **system controls**, encompassing raycasting and camera movements throughout the scene, to enhance immersion.

STARDUSTER
jrefusta.itch.io/starduster

A neon odyssey made by Cobaya Unchained
Sep 2022 - Currently in development

- As a project of two, STARDUSTER is a **rhythmic and musical arcade video game** developed in Unity 3D that originated from the Game Jam IndieSpainJam in 2022.
- Following the conclusion of the Game Jam, the project was continued, highlighting a seamless transition beyond the initial event. My significant contributions primarily lie in game design, C# **game programming** using Unity 3D, Blender to create the models and textures, VFX effects, **Shader Graphs** for creating **custom shaders, animations, and 3D mathematics**.
- In September 2023, we showcased our game at the **IndieDevDay gaming event**, allowing the public to experience and play our creation first-hand, further validating our progress and collecting valuable feedback.
- Additionally, co-founded a two-person company named **Cobaya Unchained**. Under this entity, we plan to release STARDUSTER on Steam before 2025.

Game Jam Participant and Project Developer
jrefusta.itch.io

Game Jam Projects and Small-scale Game Development
Active

- Actively participated in multiple game jams, **both individually and in collaboration with others**, contributing to the conception, development, and polishing of various game prototypes.
- Utilized skills in game design, programming (C# with Unity 3D), 3D modeling (Blender) or 2D pixel art, texturing, and animation to create engaging and **interactive gameplay experiences**.
- Demonstrated adaptability and creativity by navigating **the entire lifecycle of small-scale game projects**, from initial ideation and prototyping to final presentation and feedback gathering.

Skills

Programming Languages	JavaScript, GLSL/HLSL, HTML/CSS, TypeScript (React), C#, C/C++, Python and other scripting languages.
Graphic Engines	Three js, Unity, Unreal Engine 5.
Design Skills	Blender, Photoshop, Pixel Art, Video Editing.
Other	Linux, MacOS, Windows, Shell (Bash), Webpack, Node.js, Microsoft Office, Confluence, Jira, Git.

Courses

Three js Journey
Certificate

Bruno Simon
2022

- Strengthened my Three.js expertise, refining my understanding of the framework.
- Expanded my knowledge of GLSL shading, including advanced techniques.
- Acquired skills in creating optimized lightmaps for Three.js scenes.
- Learned techniques for implementing animations and enhancing interactivity.

Unreal Engine 5 and Blender from Beginner to Professional
Certificate

Carlos Coronado and Ismael Navales
2021

- Enhanced proficiency in Blender modeling and animation, focusing on game development.
- Enhanced proficiency in creating photorealistic environments in Unreal Engine 5 by leveraging advanced features such as Nanite and Lumen.
- Created modular environments in Blender optimized for export to UE5.

Languages

Spanish	Native proficiency
Catalan	Native proficiency
English	Professional proficiency

References available upon request.