

# Francisco Fernández Barroso

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## Summary

Software Engineer with 4 years of professional experience and a strong passion for videogame development. Currently pursuing a master's degree in Videogame Programming while working at Pix4D. Skilled in C++ and Python, with hands-on experience in Unreal Engine, Unity, Qt and CI/CD systems.

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## Work Experience

### Software Engineer, Pix4D

Jan 2024 - Present

- Led integration of masks I/O in Pix4Dmatic, improving the application's command query management system in the process, using C++ and QML.
- Developed QA, CI, and performance tracking system, enabling the parametrized analysis of image masking results, using C++ and Python.
- Contributed to segmentation masks integration into Pix4Dmatic, using C++ and QML, and supervised annotation teams for QA purposes.

### Junior Software Engineer, Pix4D

Sep 2022 - Dec 2023

- Enhanced Pix4Dsurvey's pole detection algorithm through point cloud section filtering, achieving 15% improvement in F1-score, using Python.
- Assisted in developing QA and CI pipeline for a machine learning system generating BIM models, using C++ and Python.
- Led and supervised 3 QA data provisioning and annotation campaigns.

### Software Engineer Intern, Pix4D

Apr 2021 - Jul 2022

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## Projects

**Lilith: Rise Of The Fallen** | Unreal Engine 5, C++ | In development.

Action roguelike where players corrupt the environment to gain power, developed with 20+ team members.

- Set up and maintained Perforce repository and Jenkins build pipeline.
- Designed code architecture using Gameplay Ability System and event-driven patterns.
- Implemented enemy spawning, AI systems, sound, player abilities, and full progression system.

**CHIP-8 emulator** | C++, SDL2 | Accurate emulator demonstrating low-level programming skills.

**Gōu** | Unity, C# | Atmospheric horror game for Mini Jam 182, with AI and systems development.

**Breathdown** | Unity, C# | Survival game for GGJ 2024, with game logic and character movement.

**Get Out Of My Dungeon!** | Unity, C# | Dungeon building game for GMTK Jam 2023.

**Project Acidalia** | Unity, C# | Farming/survival game prototype for bachelor's thesis (earned honors).

**Game reviews** | Twitter | Ongoing videogame analysis and reviews, since 2018.

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## Technologies

Programming Languages: C++, Python, C#, C, Groovy, Java.

Frameworks and Engines: Unreal Engine, GAS, Unity, SDL2, QML/Qt Quick, FMOD.

Other Tools: Git, Perforce, Concourse, Jenkins, Cmake, Perftracker, Linux, Jira.

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## Education

**Videogame Programming** | Master's Degree

Oct 2024 – Present

Universidad Complutense de Madrid

**Computer Engineering** | Bachelor's Degree

Sep 2016 – Jun 2022

Universidad Politécnica de Madrid