

BRUNO CRUZ DE BARROS

Senior Gameplay Programmer | Unity Developer | Technical Lead

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PROFESSIONAL SUMMARY

Senior Gameplay Programmer with 10+ years of experience developing educational and serious games using Unity and C#. Developed gameplay systems for 35+ educational games and helped lead the production of over 85 serious games used by more than 100,000 students across Brazil.

Experienced in gameplay systems architecture, multiplayer development, AI systems, WebGL optimization, technical leadership, and production planning. Strong background in collaborating with artists, game designers, and developers to deliver scalable and maintainable game solutions.

TECHNICAL SKILLS

Programming Languages

- C#, JavaScript (Basic)

Game Development

- Unity, Photon PUN2, Photon Fusion, WebGL, New Input System, Mobile Development

Architecture & Design

- Object-Oriented Programming (OOP), SOLID Principles, Design Patterns, MVC, MVP, State Machine, Observer Pattern, Object Pooling

Systems Development

- Gameplay Systems, Multiplayer Systems, AI Systems, Event-Driven Architecture, UI Systems, Tool Development, Level Design Tools

Optimization

- WebGL Optimization, Memory Optimization, Object Pooling, Texture Optimization, Performance Profiling, Low Poly Production Pipelines

Leadership & Production

- Agile Methodologies, Sprint Planning, Backlog Management, Team Leadership, Technical Documentation, UML and Class Diagrams

PROFESSIONAL EXPERIENCE

Lead Gameplay Programmer / Technical Lead
UNIP & Objetivo Educational System
2014 – Present

Developed educational and serious games used by more than 100,000 students across Brazil while contributing to technical leadership, gameplay architecture, and production management.

Leadership Responsibilities

- Recruited and led multidisciplinary teams composed of programmers, artists, and game designers.
- Coordinated production planning, sprint organization, and delivery schedules.
- Defined project scope and development roadmaps.
- Mentored team members and supported technical decision-making.
- Established technical standards and development workflows.

Technical Responsibilities

- Designed and implemented gameplay systems for educational and multiplayer games.
- Developed reusable game frameworks and architecture.
- Created AI systems, progression systems, tutorials, and player controllers.
- Optimized WebGL applications for performance and memory efficiency.
- Produced technical documentation and class diagrams.
- Applied design patterns and software engineering best practices across projects.

SELECTED PROJECTS

Objetivo

Lead Gameplay Programmer / Technical Lead

Multiplayer educational platform developed with Unity and Photon where players explore a shared online hub and participate in educational mini-games.

Key Contributions

- Led technical development and production planning.
- Supervised implementation of lobby and matchmaking systems.

- Currently leading migration from Photon PUN2 to Photon Fusion.
- Developed a reusable state-machine-based player controller supporting keyboard, mouse, gamepad, and mobile controls.
- Implemented multiplayer object pooling and synchronized event systems.
- Developed online obstacle synchronization systems.
- Built designer-friendly level generation tools.

Technologies

Unity, C#, Photon PUN2, Photon Fusion, WebGL, New Input System

Forest Guardians

Gameplay Programmer / Technical Lead

Educational tower defense game inspired by Brazilian folklore.

Key Contributions

- Developed enemy wave management systems.
- Implemented progression and upgrade systems.
- Built character combat systems including buffs and debuffs.

Biomás

Gameplay Programmer / Technical Lead

Real-time strategy educational game focused on preserving Brazilian biomes.

Key Contributions

- Implemented RTS character systems and state machines.
- Created event-driven mission systems.
- Built AI behavior systems.

EDUCATION

Postgraduate Degree in Computing Applied to Education, USP (2020–2022)

Bachelor of Computer Science, UNIP (2014–2019)

Digital Games Programming Technical Course, ETEC Guaracy Silveira (2012)

Languages

- Portuguese (Native)
- English (B2)