Iciar Andreu Angulo

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Skills

- **Programming**: C++, Python, OpenGL, GLSL, MEL, C#, Qt
- **Software**: Maya, Houdini, Unreal Engine
- **Concepts**: 3D Math, Linear Algebra, Tool Development
- **Foreign Languages**: Spanish (native)

Summary

Software engineer with a focus in computer graphics with 5+ years of experience in the Cinematics team at Blizzard Entertainment, helping deliver pre-render and in-game cinematics for multiple AAA games. With a proven ability to develop performant tools to help artists in a variety of areas such as modeling, rigging, animation, and layout. Eager to leverage strong mathematical fundamentals and graphics programming skills to deliver high-quality visual experiences.

Education

University of Pennsylvania

MSE, Computer Graphics & Game Technology

University of Maryland

BS, Computer Science

BA, Film Studies

Work Experience

Software Engineer — Cinematics R&D Tech Team

Blizzard Entertainment (2020–Present)

- Developed and supported robust production pipeline tools in C++ and Python for modeling, rigging, and animation departments, directly supporting artists in creating high-fidelity assets.
- Architected and developed a multi-mesh intersection tool using C++ and Embree BVH, achieving a significant performance boost. Included a GPU rasterization (OpenGL) approach for handling UV intersections in 2D space.
- Acted as a bridge between engineering and art departments by gathering technical requirements, prototyping new solutions, and resolving workflow bottlenecks for multiple shows.

Projects

Animation and Mocap Transfer Tool

- Designed, owned, and optimized the pipeline application used to transfer animations between humanoid characters. Integrated Maya's Human IK system to map data from source rigs or motion capture FBX files to target assets, automating t-posing, baking, and prop attachments.
- Drastically accelerated character animation reuse across shows and streamlined the integration of motion capture data into the production pipeline.
- Technologies Used: Python, Maya API, PySide/Qt, JSON.

Weight Transfer Tool

- Built a custom Maya command in C++ to transfer deformer weights across disparate mesh topologies. Integrated Embree's BVH algorithms to efficiently find closest vertices for barycentric calculations. Supplemented with a custom PySide/Qt user interface to facilitate artist use.
- Technologies Used: C++, Python, Maya API, Embree, JSON, Qt.

Tool for Generating Paint Meshes

- Engineered an automated pipeline tool to prepare high-density geometry for surfacing and texture painting. The tool utilizes Catmull-Clark subdivision (OpenSubdiv), applies Ptex map displacement, and uses Houdini's polyReduce for UV-preserving polygon decimation.
- Shifted the weight-heavy geometry preparation work from the modeling department to an automated background process, accelerating surfacing iterations.
- Technologies Used: C++, Python, OpenSubdiv, Houdini API, Alembic, Ptex.