Joel Gross

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http://joelgross.me/

Santa Monica, California

Work Experience

Lightstorm Entertainment
SOFTWARE ENGINEER
NOV 2016 — PRESENT
Designed and developed a proprietary real-time particle system and a suite of tools surrounding the system for use in large-scale virtual production on the Avatar sequels. The system was built using CUDA and C++ and integrated into the pipeline for use on stage during motion capture as well as for previs shot creation. Additionally, responsible for shader development and the creation of workflows to assist artists with their daily production tasks.

DreamWorks Animation
SOFTWARE ENGINEER - SHADING R&D
OCT 2015 — NOV 2016
Responsible for developing and maintaining DreamWorks' proprietary shaders on REYES and MCRT renderers. Examples include hair, fur, feathers, eyes, and a wide variety of utility shaders.

Projects

Algorithmic cryptocurrency trader
FALL 2017 — PRESENT
Built a Machine Learning-based high-frequency trading bot that successfully trades hundreds of times a day in a live trading environment. The bot is trained on historical data of several different cryptocurrencies and is able to accurately predict trends over 70% of the time.

Fluid Simulation
FALL 2014 — SPRING 2015
Written from scratch using CUDA, C++, and OpenGL. Simulates fluid and foam particles with realistic motion in real-time. Implemented several research papers resulting in a framework capable of running 128k fluid particles and up to 500k foam particles at 30 fps. The main resource for the fluid physics is "Position Based Fluids" (Macklin 2013). Extended this framework to support fluid-cloth coupling.

Deferred Rendering Engine
SPRING 2015
Developed a 3D puzzle-action game using C++ and OpenGL in a team of 6. Team leader and personally responsible for developing the deferred renderer used in the game. Features include screen-space ambient occlusion, point light & directional light shadow mapping, and light volumes.

Thermo
FALL 2014
Developed a puzzle-platformer using Actionscript 3 in a team of 6. Personally responsible for game direction, gameplay programming, and art. Played by over 50k people across Newgrounds and Kongregate.

Education

Cornell University — GPA: 3.78
FALL 2014 — SPRING 2015

Graduate School
M.Eng — Computer Science

SUNY Binghamton University — GPA: 3.67
FALL 2011 — SPRING 2014
GRADUATED IN 3 YEARS

Watson School of Engineering
BS — Computer Science

Harpur College of Arts & Sciences
BS — Economics

Skills

Programming
C++ • FLUENT, 8 YEARS
C • FLUENT, 8 YEARS
Java • FLUENT, 5 YEARS
Python • FAMILIAR, 5 YEARS
C# • PROFICIENT, 1 YEAR
Actionscript 3 • PROFICIENT, 1 YEAR

Design
Adobe Photoshop • FLUENT, 10 YEARS
Adobe Flash • PROFICIENT, 4 YEARS

Tools & Platforms
CUDA
OpenGL/GLSL
Linux
Microsoft Windows
Unity
Maya
Unreal Engine 4
Git

Honors

Academic Honors
Watson School of Engineering
CUM LAUDE

Harpur College of Arts & Sciences
CUM LAUDE

Dean's List • SPRING 2012, FALL 2012, SPRING 2013, FALL 2013