

Education

University of Pennsylvania (January 2009–Present)

- Candidate for Bachelor of Science in Engineering, majoring in Digital Media Design (interdisciplinary major between computer science, fine arts, and communications)
- Expected graduation: May 2013
- Cumulative GPA: 3.45
- Selected courses: computer graphics, physically based animation, GPU programming, software design and engineering, linear algebra and vector calculus, probability and statistics, physics, creativity and imagination, 3D computer modeling, photography, video editing, drawing, graphic design, stage lighting, acting

Experience

Pixar Animation Studios

- **Three-Month Technical Director Intern (May 2012–August 2012)**
 - Worked on the Global Technology team for a future Pixar film
- **Six-Month Technical Director Intern (July 2011–December 2011)**
 - Worked on the Global Technology team for Pixar's upcoming film Monsters University
 - Developed lighting technology for trees and other vegetation, and assisted with other global illumination projects

University of Pennsylvania

- **Teaching Assistant for CIS 800-004: Advanced Rendering (January 2013–Present)**
- **Teaching Assistant for CIS 563: Physically Based Animation (January 2012–May 2012)**
- **Grader for CIS 277: Introduction to Computer Graphics Techniques (January 2011–May 2011)**

Self-Employment

- **Freelance Flash Developer (2007–2011)**
 - Programmed a wide variety of applications for dozens of clients across the country
 - Worked on projects for Honda, Sony Pictures, HP, USC Annenberg School, SmartSound, John Varvatos, and Made Goods (among others)
 - Favorite projects: full-screen deep-zoom image galleries, music sequencer

Siemens Medical Solutions

- **e-Learning Development Intern (Summer 2007)**

Projects

Photorealizer: Physically Based Renderer (May 2010–Present)

- Physically based renderer written from scratch in C++
- Features path tracing, photon mapping, subsurface scattering, various BSDFs, depth of field, motion blur, instancing, dispersion, texture mapping, image-based lighting, OpenEXR output, and much more

Sky Renderer (September 2012–February 2013)

- Atmospheric light transport simulator written from scratch in C++
- Features spectral rendering, realistic atmosphere model, Rayleigh scattering, ozone absorption, aerosols, unbiased distance sampling, direct Sun sampling, and panoramic cameras

GPU Path Tracer (Spring 2012)

SPH Liquid Simulator (Spring 2011)

- Particle-based fluid simulator written from scratch in C++
- Features weakly-compressible SPH, ghost particles, and surface reconstruction using anisotropic kernels

Smoke Simulator (Spring 2011)

Two Entries for Stephen Colbert's Green Screen Challenge (2006)

- Two original videos making use of extensive compositing and visual effects
- Clips from both were shown on The Colbert Report

Skills

Programming Languages: C++, Python, ActionScript 3.0, RSL, Java, CUDA, HTML, JavaScript, CSS, PHP

Software and OS: Houdini, Maya, Slim, PRMan, Qt, Flash, Photoshop, Illustrator, After Effects, Linux, OS X, Windows

Miscellaneous: Can juggle 7 balls and 5 clubs, ride a unicycle, and do a handstand (not all at the same time)