

# JONATHAN LEE

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## Education

### University of Pennsylvania

August 2016 – May 2018 (expected)

*MSE, Computer Graphics and Game Technology*

### Rutgers University

August 2012 – January 2016

*BS, Computer Science*

## Skills

**Programming Languages:** C++, CUDA, Python, Java, HTML/CSS, JavaScript, GLSL

**Software:** Maya, Unity, Photoshop, Illustrator, Premiere, After Effects, Qt, Visual Studio

## Projects

### GPU Path Tracer [CUDA]

- Currently supports objects with diffuse, specular, transmissive, and subsurface scattering materials.
- Depth of field and Anti-Aliasing
- Naïve BSDF and Direct Lighting Integration.
- Utilizes stream compaction for terminated rays to optimize performance.

### CPU Monte Carlo Path Tracer [C++]

- Physically based renderer that supports various BSDFs, lights, implicit surfaces, constructive solid geometry, and adaptive variance reduction.
- Uses a BVH Tree to accelerate ray intersection tests.
- Integration Techniques: Direct Lighting, Full Lighting, Volumetric.

### Half-Edge Mesh Editor [C++, GLSL]

- Meshes are stored in a Half-Edge Mesh Data Structure and can be subdivided using Catmull-Clark Subdivision.
- Skeleton rigs are drawn onto the mesh using GLSL.
- Meshes can be posed by fiddling with the rig; each joint's influence on the rig can be adjusted using the heat map.

### SteerLite Crowd Simulator [C++]

- Implemented various algorithms including Social Forces.
- Optimized collision detection for agents to enhance performance.
- Achieved excellent benchmarks on multiple test cases.

## Work Experience

### The Walt Disney Company

January 2016 – July 2016

*Disney College Program Cast Member*

- Interacted with a wide variety of guests while delivering excellent guest experiences in a fast pace environment.
- Recognized by leaders and fellow cast members for demonstrating the Four Keys (Disney's steps to excellent guest experience).
- Explored the different opportunities and styles of Disney management by completing the Disney Leadership course.

### Today's Business

May 2015 – August 2015

*Digital Developer Intern*

- Maintained various webpages for clients through WordPress (HTML/CSS, JavaScript, PHP).
- Designed landing pages and Facebook pages through Instapage and FalconSocial.
- Utilized Google Analytics to generate SEO reports for clients.