

# Jonathan Lee

Software & Graphics Engineer

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[www.JonLee.xyz](http://www.JonLee.xyz)

## EDUCATION

**University of Pennsylvania** • May 2018 (expected)  
MS Engineering, Computer Graphics and Game Technology

*Courses: Computer Animation, Advanced Rendering, GPU Programming, Game Design, 3D Modeling*

**Rutgers University** • January 2016  
BS, Computer Science • Dean's List

*Courses: Computer Architecture, Systems Programming, Algorithms, Databases, Operating Systems, Distributed Systems*

## SKILLS

**Programming Languages** C++, OpenGL, WebGL, CUDA, Python, Java, JavaScript, HTML/CSS  
**Software** Maya, Unity, Unreal, Photoshop, Illustrator, After Effects, Premiere, Qt, Visual Studio, Microsoft Office

## PROJECTS *(complete portfolio with demos, videos, and artwork available at [www.JonLee.xyz](http://www.JonLee.xyz))*

### Monte Carlo Path Tracer • C++

- Supports Multiple Importance Sampling, Global Illumination, and Volumetric Rendering
- Optimized render times using a BVH acceleration structure and multithreading
- Handles various materials including Fresnel Reflectance and Microfacet Models

### Real-Time Physically Based Volumetric Renderer • WebGL 2.0, JavaScript

- Developed a pipeline that includes shadow mapping, deferred shading, volumetric rendering, and tone mapping to render physically based fog/smoke (homogenous and heterogeneous media)
- Based on EA's Frostbite render engine presented at Siggraph 2015 by Sebastien Hillaire

### Stay Woke: Goldilocks's Escape (VR) • C#, Unity

- Lead Unity programmer - level design, NPC AI and animation controller, VR integration

### Procedural Tree Generation Maya Plugin • C++, Python, MEL

- Implemented a simple L-System to generate trees with a menu written in MEL
- Utilizes SWIG to interface between C++ functions and Python scripts

### Hand of God: A Cooperative Endless Runner (VR) • Unreal Engine

- Level design and secondary gameplay programmer - implemented a procedural terrain system as well as second player gameplay physics and terrain/resource interaction

### Special Permission Number Request System • Java, MySQL, HTML/CSS

- Lead backend programmer to retrieve data from the database to display on webpages

### RU Studying • Python, HTML/CSS

- Fetches data from the Rutgers API to find empty classrooms during school hours to study in

## WORK EXPERIENCE

### The Walt Disney Company

Disney College Program Cast Member

January 2016 - July 2016  
Orlando, FL

- Interacted with a wide variety of guests while delivering excellent guest experiences in a fast paced environment
- Recognized by management and coworkers for exceptional performances
- Took a course in Disney Leadership to explore management at a Fortune 500 company

### Today's Business

Digital Developer Intern

May 2015 - August 2015  
Pine Brook, NJ

- Maintained various webpages for clients through WordPress (HTML/CSS, JavaScript, PHP)
- Worked with the graphic design team to develop content for webpages
- Designed and created landing pages through Instapage and FalconSocial
- Generated SEO reports using Google Analytics to ensure client search visibility

### New Brunswick Computing Services

Computer Lab Consultant - Rutgers Work Study

April 2013 - March 2014  
Piscataway, NJ

- Maintained and troubleshooted computers/printers in the lab
- Assisted students and faculty resolve technical issues

## INTERESTS

**Programming:** Rendering, Virtual Reality, Game Design, VFX/SFX

**Other:** Full Stack Web Development, Web Applications, GPU Programming

**Hobbies:** Filmmaking/Photography, Basketball, Piano, Ukulele