

# 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, Physically-Based Animation*

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

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

## SKILLS

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

## WORK EXPERIENCE

**University of Pennsylvania** • Philadelphia, PA  
App Developer • February 2018 – Present

- Develop applications and games with the Unity Engine and C#.
- Currently creating an augmented reality game with Vuforia a university event themed around artificial intelligence.

**The Walt Disney Company** • Orlando, FL  
Disney College Program Cast Member • January 2016 – July 2016

- Recognized by management and coworkers for exceptional performances.
- Integrated and implemented leadership and management skills from a course in Disney Leadership

**Today's Business** • Today's Business

Digital Developer Intern • May 2015 – August 2015

- Collaborated with the graphic design team to develop content and landing pages for websites.
- Maintained client webpages through WordPress (HTML/CSS, JavaScript, PHP).
- Ensured client search visibility and utilized Google Analytics to generate SEO reports.

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

**Monte Carlo Path Tracer** • C++

- Physically-based renderer that renders 3D scenes defined by a JSON file.
- 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 • Demo: [www.JonLee.xyz/Heatstroke](http://www.JonLee.xyz/Heatstroke)

- Renders a 3D scene with physically accurate fog and smoke in real-time.
- Developed a pipeline that includes shadow mapping, deferred shading, volumetric rendering, and tone mapping to render physically based fog/smoke. Supports both 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

- VR game in which the player takes on the role as Goldilocks to escape without getting caught by the bear.
- Lead Unity programmer - level design, NPC AI and animation controller, VR development.

**RU Studying** • Python, HTML/CSS

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

## Short Films

**Playing by the Book** • 2015 • [www.JonLee.xyz/PlayingByTheBook](http://www.JonLee.xyz/PlayingByTheBook)

- Director, Writer, Animator
- New Lens Film Festival 2015

**Deleted** • 2013 • [www.JonLee.xyz/Deleted](http://www.JonLee.xyz/Deleted)

- Director, Writer, VFX Artist