

# JONATHAN LEE

Software Engineer | Graphics Programmer

University of Pennsylvania  
Philadelphia, PA

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## EDUCATION

University of Pennsylvania <i>Aug. 2016 - present</i>	MSE, Computer Graphics and Game Technology <ul style="list-style-type: none"><li>• Penn Siggraph Member</li><li>• Courses: Computer Graphics, Computer Animation, Advanced Rendering, Advanced Topics in Computer Graphics, 3D Modeling, Video 1</li></ul>
Rutgers University <i>Aug. 2012 - Jan. 2016</i>	BS, Computer Science <ul style="list-style-type: none"><li>• Dean's List (Fall 2012, Fall 2014, Spring 2015, Fall 2015)</li><li>• National Society of Collegiate Scholars, Undergraduate Student Alliance of Computer Scientists, Rutgers Animation Club, Intramural Basketball Captain (2012 - 2015)</li><li>• Relevant Courses: Databases, Systems Programming, Operating Systems, Numerical Analysis, Distributed Systems</li></ul>

## SKILLS

Programming Languages	C, C++, GLSL, Python, Java
Web Technologies	HTML/CSS, Flask, JSP, MySQL, Wordpress
Design Programs	Maya, Photoshop, Illustrator, Premiere, After Effects

## WORK EXPERIENCE

Disney College Program Cast Member <ul style="list-style-type: none"><li>• Performed excellent guest experience and interaction daily.</li><li>• Maintained a well-stocked and "show ready" location.</li><li>• Courses: Disney Leadership 101</li><li>• Demonstrated "The Four Keys", Disney's vision to performing beyond excellent guest service, on multiple occasions.</li></ul>	Walt Disney World Orlando, FL <i>Jan. 2016 - July 2016</i>
Digital Developer Intern <ul style="list-style-type: none"><li>• Maintained various web pages for clients through WordPress.</li><li>• Designed and maintained landing pages and Facebook pages with Instapage and FalconSocial.</li><li>• Generated SEO reports through Google Analytics.</li></ul>	Today's Business Pine Brook, NJ <i>May. 2015 - Aug. 2015</i>

# PROJECTS

## Mini-Minecraft

*C++*

- Developed the physics engine and terrain interaction (collision detection and raymarching for adding and deleting blocks).
- Implemented a first person and third person sandbox camera modes.
- Implemented various steering behaviors for NPC AI as well as a dance animation.

## Mini-Maya

*C++, GLSL*

- Implemented a Half-Edge Mesh Data Structure.
- OBJ and JSON files are parsed to draw mesh and skeletons respectively.
- Subdivides surfaces using Catmull-Clark subdivision.
- Users can adjust the weighting of joints.

## SteerLite Crowd Simulator

*C++*

- Implemented various algorithms including A\*, GJK collision detection, and Social Forces
- GJK collision detection was extended to detect concave polygons
- Achieved excellent benchmarks on multiple test cases

## RU Studying

*Python Web App*

- Finds empty classrooms during school hours, in real time, for students to study in.
- Students can select their campus and building to find a list of available classrooms.
- Parses JSON data from the schedule of classes in the Rutgers API.

## Gradebook

*GO Web App*

- Completely RESTful application (POST, GET, DELETE, etc.)
- Computes grade averages.
- JSON gradebook gets modified based on user query.

## SPN Request System

*Java Web App*

- Students login to apply for SPNs to get into an at-capacity course.
- Professors can view lists of students and determine who receives an SPN.
- Developed both backend (JSP + MySQL) and frontend of the application.