JONATHAN LEE

Software Engineer | Graphics Programmer

University of Pennsylvania
Philadelphia, PA

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EDUCATION

University of Pennsylvania *Aug. 2016 - present*	**MSE, Computer Graphics and Game Technology** • Penn Siggraph Member • Courses: Computer Graphics, Computer Animation, Advanced Rendering, Advanced Topics in Computer Graphics, 3D Modeling, Video 1
Rutgers University *Aug. 2012 – Jan. 2016*	**BS, Computer Science** • Dean's List (Fall 2012, Fall 2014, Spring 2015, Fall 2015) • National Society of Collegiate Scholars, Undergraduate Student Alliance of Computer Scientists, Rutgers Animation Club, Intramural Basketball Captain (2012 – 2015) • Relevant Courses: Databases, Systems Programming, Operating Systems, Numerical Analysis, Distributed Systems

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 • Performed excellent guest experience and interaction daily. • Maintained a well-stocked and "show ready" location. • Courses: Disney Leadership 101 • Demonstrated "The Four Keys", Disney's vision to performing beyond excellent guest service, on multiple occasions.	Walt Disney World Orlando, FL *Jan. 2016 – July 2016*
Digital Developer Intern • Maintained various web pages for clients through WordPress. • Designed and maintained landing pages and Facebook pages with Instapage and FalconSocial. • Generated SEO reports through Google Analytics.	Today's Business Pine Brook, NJ *May. 2015 – Aug. 2015*

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.