Sarah Forcier

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EDUCATION

UNIVERSITY OF PENNSYLVANIA
MSE in Computer Graphics and Game Technology
Expected Dec 2017 | Philadelphia, PA
GPA: 3.80

CORNELL UNIVERSITY
Bachelor of Arts
May 2016 | Ithaca, NY
GPA: 4.14

LUDWIG MAXIMILIAN UNIVERSITY
Spring 2015 | Munich, Germany

SKILLS

PROGRAMMING
- C++
- Java
- C
- Python
- OCaml
- Javascript/HTML/CSS
- GLSL

SOFTWARE
- Maya & MEL
- Houdini
- After Effects
- Git
- Mathematica

LANGUAGES
- German
- French

COURSEWORK

- Computer Animation
- Advanced Computer Graphics
- Procedural Graphics
- 16mm and Digital Filmmaking

HOBBIES

Ice Hockey, Scuba Diving, Bartender, Windsurfing, Snowboarding

EXPERIENCE

CORNELL UNIVERSITY
TEACHING ASSISTANT, Object-Oriented Programming
January 2016 - May 2016 | Ithaca, NY
- Led discussion section, held office hours, graded projects and exams for a course of 700 students among 25 TAs

PROJECTS

January 2017 - Present
REAL TIME IMPLICIT SURFACES Javascript, WebGL, THREE.js
- Implemented a real time metaballs and isosurface using marching cubes algorithm
- Constructed 7 metaballs with 1800 tris running at 28 fps

REAL TIME SHADERS Javascript, WebGL, THREE.js, GLSL
- Designed a toon shader, matcap shader, and iridescent shader
- Incorporated a post process bloom effect with 2 passes: High-pass filter and Gaussian blur

INTERACTIVE SHAPE GRAMMAR Javascript, WebGL, THREE.js
- Built a procedural town and terrain modeled with multi-octave perlin noise function
- Designed a shape grammar with 12 subdivision rules and 10 variables

LSYSTEM Javascript, WebGL, THREE.js
- Developed a LSystem parser and designed a grammar for deciduous budding trees
- Implemented an interactive parser with 18 generations at 28 FPS

MONTE CARLO PATH TRACER C++, Qt
- Programmed a multi-threaded path tracer with 2.25x speedup
- Handled specular and transmissive surfaces with multiple BSDFs

August 2015 - December 2015
RAY TRACER Java, OpenGL, GLSL
- Implemented Cook Torrance material, anisotropic shading model for polished wood, environment mapping, normal and texture mapping
- Achieved speedup with a BVH acceleration structure

AWARDS

- Eckert Fellow; 2016
- Cum Laude; 2016
- Merrill Presidential Scholar (top 1% of class); 2015
- DAAD Research in Science and Engineering scholarship; 2014
- Rawlings Cornell Presidential Research Scholar, 2012