

# CAROLINE LACHANSKI

clach@seas.upenn.edu  
(908) 209-9098  
[carolinelachanski.com](http://carolinelachanski.com)  
<https://vimeo.com/298670321>

## EDUCATION

<b>University of Pennsylvania</b>	School of Engineering and Applied Science	Philadelphia, PA
Candidate for <b>MSE</b> in Computer Graphics and Game Technology, <b>GPA:</b> 3.85/4.00		Fall 2019
Candidate for <b>BSE</b> in Digital Media Design, <b>GPA:</b> 3.74/4.00, <b>Minors</b> in Fine Arts, Mathematics		Fall 2018

**Coursework:** Interactive Computer Graphics, Physically-Based Rendering, Computer Animation, Procedural Graphics, Game Design and Development, Data Structures and Algorithms, Intro to Algorithms, Linear Algebra, Computer Systems, iOS Development, Discrete Mathematics, 3D Modeling

## SKILLS & INTERESTS

**Programming:** C++, GLSL, C#, Java, Python, C, Swift, JavaScript

**Software:** OpenGL, WebGL, Unity, Unreal, Vuforia, Git, Visual Studio, Qt, Adobe Photoshop, Illustrator, InDesign, Maya

**Interests:** Traditional and digital illustration, film, animation, fiction novels, women in STEM, K-pop music, manga

## EXPERIENCE

<b>STRIVR</b> , Menlo Park, CA	May 2018 - Aug 2018
--------------------------------	---------------------

**Software Engineering Intern**, under Rama Pagadala (Director of Engineering)

- Developed workplace communications training application for Oculus Rift and Go using Unity and C#
- Worked with 6-person team of developers and artists employing Agile methodology and TFS
- Developed new workflow for storing and accessing project assets with asset bundles stored on disk
- Implemented 3 new shaders, made UI/UX changes, and added features such as a spherical video scene

<b>University of Pennsylvania Price Lab for Digital Humanities</b> , Philadelphia, PA	Sept 2018 - Present
---	---------------------

**3D Programming Intern**

- Develop interactive VR/AR experiences for Oculus Rift and HoloLens for visualizing archaeological artifacts and locations using Unity, C#, and Vuforia
- Write documentation for future workshops and reference by Penn community

<b>University of Pennsylvania Engineering Summer Academy at Penn</b> , Philadelphia, PA	June 2018 - July 2018
---	-----------------------

**Residential Teaching Assistant**

- Instructed 30+ high school students in 3D modeling with Maya for college-level graphics course

## PROJECTS

<b>Monte Carlo Path Tracer</b> : C++, Qt	Spring 2018
--	-------------

- Implemented path tracer, using various integration methods including direct lighting and global illumination with multiple importance sampling, culminating in photon mapper using k-d tree
- Added features such as thin lens camera, implicit surfaces, various light sources and materials

<b>Mini Minecraft</b> : C++, GLSL, Qt	Fall 2017
---------------------------------------	-----------

- Worked on 3-person team; implemented procedurally generated terrain with 2D fractal Brownian motion, raymarching and ray-cube intersections for interaction with environment, A\* algorithm to determine movement of non-player character, distance fog, and multithreading in terrain generation

<b>Mini Maya</b> : C++, GLSL, Qt	Fall 2017
----------------------------------	-----------

- Implemented mesh editor with GUI allowing for import of OBJ files, half-edge manipulations such as face extrusion, Catmull-Clark smoothing, face triangulation, and skeleton skinning

## LEADERSHIP

<b>Residential Advisor</b> , Kings Court English College House	Fall 2017 - Present
--	---------------------

- Provide advising for 40+ undergraduates, plan and execute 30+ academic and social events per year

<b>Penn SIGGRAPH Board</b>	Spring 2017 - Present
----------------------------	-----------------------

- Work with 8-person board to plan professional workshops, social events, and mentoring program

<b>Advancing Women in Engineering Student Advisory Board</b>	Spring 2015 - Present
--	-----------------------

- Lead undergraduate social committee, organize events in order to address issues specific to female engineering students, enhance their overall undergraduate experience, and improve retention