

CAROLINE LACHANSKI

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EDUCATION

University of Pennsylvania , School of Engineering and Applied Sciences	Philadelphia, PA
Candidate for MSE in Computer Graphics and Game Technology, GPA: 3.85/4.0	Fall 2019
Candidate for BSE in Digital Media Design, GPA: 3.74/4.00, Minors 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

Programming: C++, OpenGL/WebGL, C#, Unity, Java, Python, C, Swift, Git, JavaScript, Visual Studio, Qt

Additional Software: Adobe Photoshop, Illustrator, InDesign, Autodesk Maya, SOLIDWORKS, MS Office

EXPERIENCE

University of Pennsylvania Price Lab for Digital Humanities	Philadelphia, PA
<i>3D Programming Intern</i>	Sept 2018 - Present
• Develop interactive VR/AR experiences for Oculus Rift and HoloLens for visualizing archaeological artifacts and locations using Unity, C#, and Vuforia	
STRIVR	

Software Engineering Intern, under Rama Pagadala (Director of Engineering) *May 2018 - Aug 2018*

- Developed soft skills 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

PROJECTS

Monte Carlo Path Tracer: 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	
Mini Minecraft: C++, OpenGL, Qt	Fall 2017
• Worked on 3-person team to develop Minecraft-like game	
• 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	
Mini Maya: C++, OpenGL, 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

Residential Advisor , Kings Court English College House, University of Pennsylvania	Fall 2017 - Present
Provide advising for 40+ undergraduates, plan and execute 30+ academic and social events per year for residential community, facilitate interactions between residents, Penn faculty, and community	
Advancing Women in Engineering Student Advisory Board	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	
Penn SIGGRAPH ACM Board	Spring 2017 - Present
Plan professional workshops, social events, and mentoring program for school computer graphics community	