EMILY VO

CONTACT
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COMPUTER GRAPHICS ENGINEER | ARTIST
www.emilyhvo.com | Demo Reel: https://vimeo.com/239528418

EDUCATION

University Of Pennsylvania

Class of 2019

Bachelors of Science in Engineering, Digital Media Design, 3.17 GPA

Masters of Science in Engineering, Computer Graphics and Gaming Technology, 3.68 GPA

TECH SKILLS

Maya Plugin Development

Physically Based Animation

Physically Based Rendering

Procedural Graphics

Java, Python, C, C++, C#, Javascript, HTML & CSS

OpenGL, Three.js, D3.js, Unity

ART SKILLS

Autodesk Maya

Houdini

ZBrush

Substance Designer

Adobe Illustrator & Photoshop

COURSEWORK
*currently enrolled ***

GPU Programming *

Physically Based Animation

Advanced Topics in Computer Graphics

Procedural Graphics

Physically Based Rendering

Computer Animation

Algorithms and Data Structures

Intro to Computer Systems

Advanced 3D Modeling

Drawing I & II, Painting I

HOBBIES

Printmaking, Video Games, Anime, Dog Trick Training

HONORS AND AWARDS

- HackMIT's Google Cardboard Dev. Prize for ColoVR

- Electrical Engineering Senior Design's Best Mentor Team

WORK EXPERIENCE

CIS563 Graduate Teaching Assistant
University of Pennsylvania
Fall 2018
- Assists Dr. Chenfanfu Jiang with teaching Finite Element Method, Position Based Dynamics, Mass-Spring Systems, Eulerian Fluid Simulation, and Material Point Method
- Holds office hours, grades written homework and coding assignments

Production Software Engineering Intern
Blue Sky Studios
Summer 2018
- Wrote Python script for Asset Publish Slack notifications, a system for notifying artists when/how assets are modified or made available for use
- Wrote Python script for automated migration to git version control
- Designed and implemented Maya plugin in Python and PyQt for displaying layout assets' performance metrics
- Procedurally converted Moana Island scene geometry to USD [Universal Scene Description]

Software Engineering Intern
Lockheed Martin
Summer 2017
- Worked on Internal Research and Development team for Mission Planning Visualization
- Used D3.js and ASP.NET to create mission planning data visualization application

Software Engineering Intern
Analytical Graphics Inc.
Summer 2016
- Wrote unit tests for volumetric computations in Systems Tool Kit and its Scalability Extension
- Designed and developed a simulation library for a web application that mimics parallel computations and their machines
- Created a client application that uses simulation library to create the web app simulations

PROJECTS

Spr 2018 **Kemuri: Smoke Simulation,** *C++ and Houdini*
- Eulerian fluid solver extended to handle buoyancy and vorticity confinement forces
- Demo: https://vimeo.com/268908450

Spr 2018 **Oishi: Elastic Solid Simulation,** *C++ and Houdini*
- In collaboration with Alexander Chan, Tabatha Hickman, Jacob Snipes
- Implemented Finite Element Method with Neo-Hookean Elasticity Model
- Demo: https://vimeo.com/268916758

Spr 2018 **Tsurumi: Painterly Rendering Engine Maya Plugin,** *C++ & MEL*
- In collaboration with Alexander Chan
- Used OpenCV Image Segmentation to parse and process Maya rendered image regions to have an oil painting like appearance
- Responsible for orientation field creation and traversal to determine brush stroke orientation, and creating a dictionary of example brush images to place onto image

Spr 2018 **Machi: Procedural City Forgery,** *three.js*
- Procedurally generated a city with continuous real-time traffic simulation
- Implemented computational geometry algorithm to generate voronoi cells for road networks, biocrowds space colonization crowd simulation algorithm for cars driving on the voronoi roads, procedural floor plan extrusions for each building, and post processing shaders to create bloom, sobel, and pointilism effects

Fall 2017 **Hikari: A Monte Carlo Path Tracer,** *C++*
- Features full spectral rendering & dispersion effects, photon mapping, volumetric rendering, microfacet materials, BVH acceleration structures with surface area heuristic

Fall 2016 **ColorVR,** *Google Cardboard, Unity3D and C#*
- Virtual reality coloring book application
- Winner of HackMIT's Google Cardboard Development Prize
- Demo: devpost.com/software/colovr