EMILY VO

CONTACT
emvo@seas.upenn.edu
linkedin.com/emilyvo

ARTIST | COMPUTER GRAPHICS DEVELOPER
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, C, C++, C#, Javascript, HTML & CSS
OpenGL, Three.js, D3.js
Full Stack Development

ART SKILLS

Autodesk Maya
ZBrush
Substance Designer
Adobe Illustrator
Adobe 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
Art Design and Digital Culture
Drawing I & II, Painting I

HONORS AND AWARDS

- HackMIT's Google Cardboard Dev. Prize for ColoVR
- Electrical Engineering Senior Design's Best Mentor Team

WORK EXPERIENCE

CIS563 Physically Based Animation Teaching Assistant — *Fall 2018*
University of Pennsylvania

- Assists Dr. Chenfanfu Jiang with instructing a graduate level computer science course in physically based animation techniques for fluid and solid simulation
- Helps students to learn Finite Element Method, Position Based Dynamics, Mass-Spring Systems, and Eulerian Fluid Simulation
- Holds office hours, grades written homework and coding assignments

Production Software Engineering Intern — *Summer 2018*
Blue Sky Studios

Software Engineering Intern — *Summer 2017*
Lockheed Martin

- Worked on Internal Research and Development team for Mission Planning Visualization
- Used D3.js and ASP.NET to create a visualization application from the ground-up

Software Engineering Intern — *Summer 2016*
Analytical Graphics Inc.

- 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 Smoke Simulation, *C++ and Houdini*

- Eulerian fluid solver extended to handle buoyancy and vorticity confinement forces
- Demo: https://vimeo.com/268908450

Spr 2018 Elastic Solid Simulation, *C++ and Houdini*

- In collaboration with Alexander Chan, Tabatha Hickman, Jacob Snipes
- Implemented Finite Element Method with Neo-Hookean Elasticity Model
- Features constrained contact points, rigid body collision, ground collision detection
- Demo: https://vimeo.com/268916758

Spr 2018 Tsurumi Painterly Rendering Engine Maya Plugin, *C++ & MEL*

- In collaboration with Alexander Chan
- Uses 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 City Forgery, *three.js*

- Semester long senior capstone project that aims to procedurally generate a city with continuous traffic simulation
- Uses computational geometry algorithm to generate voronoi cells for city blocks, biocrowds space colonization crowd simulation algorithm for cars driving on the voronoi edge 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