EMILY VO

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

EDUCATION

University Of Pennsylvania

Candidate for BSE in Digital Media Design, 3.17 GPA

Candidate for MSE in Computer Graphics and Gaming Technology, 3.68 GPA

Class of 2019

TECH SKILLS

Maya Plugin Development
Physically Based Animation
Physically Based Rendering
Procedural Graphics
VR Development
Java, Python, C, C++, C#, Javascript, HTML & CSS
OpenGL, Three.js, D3.js, Unity3D, Google Cardboard & Daydream

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 — *Fall 2018*
University of Pennsylvania
- 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 — *Summer 2018*
Blue Sky Studios
- Wrote Python script for Asset Publish Slack notifications, a system for notifying artists when assets are modified or made available for use
- Wrote Python script for automated migration from subversion to git version control
- Designed and implemented Maya plugin in Python and PyQt for displaying all layout assets' performance metrics in a scene file
- Used Pixar's USD (Universal Scene Description) Python API to procedurally converted Moana Island scene geometry to USD for stress testing rendering pipeline

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 mission planning data visualization application

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