Annette Tongsak

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EDUCATION

Oregon State University, Corvallis, OR — Anticipated Graduation: June 2026
B.S. Computer Science - Applied Graphics Simulation & Game Programming — GPA: 3.95
Relevant Coursework: Computer Graphics & Shaders, Linear Algebra, Parallel Programming, Artificial Intelligence, Analysis of Algorithms, Software Engineering, Databases, Operating Systems, Web Development

EXPERIENCE

Pixar Undergraduate Program Technical Director Intern — June 2024 - August 2024
Pixar Animation Studios, Emeryville, CA

- Trained and completed projects in various departments of Pixar's technical pipeline, including set dressing, layout, modeling, shading, lighting, rigging, and effects
- Used proprietary Pixar software and industry-standard tools such as Maya, Houdini, Katana, Nuke, and USD
- Collaborated in a team on an animated short, contributing to both animation and the development of a facial rigging system in Blender that automated texture switching, streamlining the process and reducing production time
- Developed a procedural animation and workflow for animating characters drawing using Houdini's VEX and Blender

Undergraduate Research Assistant — June 2023 - May 2024
Oregon State University, Corvallis, OR

- Research assistant under Dr. Yue Zhang focusing on computer graphics, data visualization, and machine learning
- Collaborated with a graduate student on a wildlife object detection model commissioned by the Oregon Department of Transportation
- Developed a convolutional neural network using PyTorch to classify handwritten digits from the MNIST dataset and diverse images from the CIFAR-10 dataset

Apprenticeships in Science and Engineering Internship Assistant — June 2023 - August 2023
Oregon State University, Corvallis, OR

- Presented findings from 5 research papers to high school students, covering topics such as path tracing, multithreading, vectorization, gradient descent, backpropagation, visualization in motion, tone mapping, and color
- Developed a 3D animated short in Blender to demonstrate animation principles and inspire students to explore creative applications of computer science

PROJECTS

Auto Facial Rigging Tool | *Python, Maya* — February 2025 - Present

- Developing an automated facial rigging tool in Python for Maya, with a focus on creating a flexible and efficient system for dynamic character animation and facial expressions

Physically Based Ray Tracer | *C, C++* — January 2024 - Present

- Building a ray tracer in C++ based on the *Ray Tracing in One Weekend* book series, implementing features such as textures, volumes, bounding volume hierarchy, and indirect lighting to deepen my understanding of ray tracing's mathematical foundations

Random Cobweb Generator | *C, C++, OpenGL* — December 2023

- Developed a random cobweb generator in C++ and OpenGL, inspired by DreamWorks' 2011 paper, "Building and Animating Cobwebs for Antique Sets," learning the mathematics behind implementing catenary curves and parabolas in 3D space

SKILLS

Programming Languages: C/C++, Python, OpenGL, GLSL, CUDA, OpenCL, OpenMP, MPI, SIMD SSE
Rigging & 3D Graphics Tools: PyMEL, OpenMaya API, Maya Cmds, Qt, VEX
3D Software: Maya, Houdini, Katana, Nuke, Presto, Flow, RenderMan, USD, Blender
Developer Tools: Git, GitHub, Visual Studio Code, Visual Studio, Perforce, Jira
Operating Systems: Linux, MacOS, iOS, Windows