

MEGGIE CHENG

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EDUCATION

University of Pennsylvania

Aug 2018 - May 2022

- ❖ **BSE in Computer Science & Computer Graphics (Digital Media Design)**, GPA: 3.94
- ❖ Notable Coursework (teaching assistant for bolded class):
 - ♦ Data Structures & Algorithms (Java)
 - ♦ **Computer Graphics (C++)**
 - ♦ Computer Animation (C++)
 - ♦ Machine Learning, AI, and Natural Language Processing (Python)
 - ♦ Advanced Rendering (C++)
 - ♦ Intro to Computer Architecture (C)
 - ♦ Procedural Graphics (C++)
 - ♦ Operating Systems (C)

SKILLS & LANGUAGES

- ❖ **C++, Java, Python**
- ❖ C, C#, Lua, Matlab
- ❖ OpenGL, WebGL
- ❖ HTML, CSS, Javascript, SQL
- ❖ Game Engines: Amazon Lumberyard, Unity, Godot, Gamedev Studio, Ren'Py
- ❖ Digital Art: Photoshop, Clip Studio Paint, Procreate, Blender, Maya, Houdini, ZBrush, Substance Painter

WORK EXPERIENCE

Amazon Game Studios, Gameplay Engineer II (SDE II)

Jul 2023 - Current

- ❖ Worked on the New World Progression, MTX, Social, and World teams. Wrote Influence Race feature for Social, In-game Store improvements for MTX, Housing Item Optimizations for World. Implemented new code, bug fixes, and optimizations across all 4 teams. Collaborated with game-designers, other programmers, producers, to get features and tasks done in a timely, efficient and effective way.
- ❖ Mostly backend engineer (C++), but familiar with frontend (Lua) and tooling (Python).

Amazon Game Studios, Gameplay Engineer I (SDE I)

Aug 2022 - Jul 2023

- ❖ Worked on the New World Progression team which owns inventory/storage, items, gear, loot, rewards, crafting, trade skills (fishing, music). Co-wrote and owned Gear Set Storage feature. Implemented new code and fixed bugs for Progression team.
- ❖ Mostly backend engineer (C++).

Amazon Game Studios, Gameplay Engineer Intern

May 2021 - Aug 2021

- ❖ Worked on the War Declaration feature in New World, Amazon Games' open world MMO PC game
- ❖ Utilized C++, Lua, Perforce, Swarm

UPenn SIG Center for Computer Graphics, Simulation Research Assistant

Aug 2019 - May 2020

- ❖ Worked on simulating tearing of anisotropic materials (orange, steak, string cheese) for SIGGRAPH 2020 paper, AnisoMPM: Animating Anisotropic Damage Mechanics
- ❖ Used Houdini to create scenes for animations; helped import, texture, and shade sim files

PROJECTS & ACTIVITIES

Pokédew Mystery Dungeon, Unity, C#

- ❖ Created an infinite 2D top-down rogue-like dungeon game with procedurally generated maps
- ❖ Inspired by Pokémon Mystery Dungeon and Stardew Valley gameplay, as well as Vagabond map generation

Mini Minecraft, C++, OpenGL

- ❖ Created a Minecraft-style open sandbox game with two friends
- ❖ Coded player physics (block collision, movement) and procedural generation (L-Systems, rivers, trees, caves)

Monte Carlo Path Tracer, C++, OpenGL

- ❖ Implemented a working ray tracer and path tracer following pbr-book.org that can render 3D scenes
- ❖ Coded various surface materials/BSDFs, path tracing methods (naïve, direct, full, multi importance sampling), light sources, global illumination, KD tree, thin lens, depth of field, and constructive solid geometry

Mini Maya, C++, OpenGL

- ❖ Created a 3D computer graphics modelling application
- ❖ Coded importing OBJs as half-edge data structures, translating & rotating edges, vertices, and faces, extruding faces, Catmull-Clark subdividing, skinning skeletons to OBJs, and manipulating the mesh with skeleton binding