

Cong Shen

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EDUCATION

University of Southern California M.S. Computer Science - Game Development	May 2020
University of Illinois at Urbana-Champaign B.S. Mathematics and Computer Science	May 2018

WORK EXPERIENCE

USC Institute for Creative Technologies – Game Developer Intern, Los Angeles, CA	May 2019 – August 2019
<ul style="list-style-type: none">Participated in designing and developing an educational RPG for teaching AI concepts and algorithms with Unity3DBuilt a third-person/top-down character controller and camera transition system for switching perspectivesImplemented a character inventory system which supports picking up, using and dropping down itemsCreated a search tree visualization system for visualizing classical search algorithms as UI elements	
Virtualitics, Inc – Software Engineering Intern, Pasadena, CA	October 2018 – December 2018
<ul style="list-style-type: none">Participated in developing a VR data visualization software with Oculus Rift and Unity3DImplemented the ForceAtlas algorithm for proper graph nodes spatialization in 3D spaceOptimized graph spatialization performance by using compute shaders	
University of Illinois at Urbana-Champaign – Research Assistant, Urbana, IL	January 2017 – May 2018
<ul style="list-style-type: none">Lead a team of four students in developing a VR simulation software with HTC Vive and Unity3DImplemented TCP and UDP communication for feeding inputs from a treadmill and an EEG headset to UnityCreated a procedural terrain mesh generator with a level of detail system in Unity	

PROJECTS

First Person Shooter Game - Whiteout	December 2019 - Present
<ul style="list-style-type: none">Lead the engineering team of four students to develop a multiplayer FPS game with Unreal Engine 4 and C++Developed FPS controller functionalities such as shooting, changing weapon fire modes and changing stancesImplemented networking functionalities such as synchronizing player status and broadcasting gameplay events	
USC Advanced Game Project	August 2019 - Present
<ul style="list-style-type: none">Lead the engineering team of six students to develop an adventure-horror game with Unity3D and Tobii Eye TrackerHeld weekly engineering meeting for discussing and assigning tasks to team membersBuilt an event-based input management class which serves as a layer of indirection to the existing Unity input systemDeveloped a player-object interaction system including functionalities such as picking up items and using items	
Global Game Jam Project - Sealer	January 2020
<ul style="list-style-type: none">Built a 2D puzzle-solving game with a team of two people using Unreal Engine 4Implemented 2D character control and puzzle-related interactions	
USC IMGD Master Thesis Game Project - Morana	August 2018 - Aug 2019
<ul style="list-style-type: none">Participated in designing and developing a VR puzzle-solving game with Unity3DDeveloped virtual instrument interaction with VRTK and Oculus touch controllersDesigned and created AI character behavior using a behavior tree	
CPU/GPU Path Tracer	July 2019 - August 2019
<ul style="list-style-type: none">Built a C++ multithreaded CPU path tracing renderer with realistic light behavior simulation using BRDFOptimized renderer performance by using C# Job System and compute shaders	
VR Multiplayer Flight Simulator	August 2017 – December 2017
<ul style="list-style-type: none">Lead a team of four undergraduate students to develop a virtual reality flight simulator with Unity3DImplemented network communication with Photon Unity Networking to synchronize environment between players	
Computational Photography Projects	August 2017 – May 2017
<ul style="list-style-type: none">Gradient-domain fusion with Poisson blending and mixed gradient approachImage-based relighting for rendering synthetic objects into 2D images with realistic lightingPanoramic video stitching and foreground/background extraction	

SKILLS

Programming Languages: C++, C#, Python, Java, Ocaml, MATLAB, GLSL, HLSL

Tools & Technologies: Git, SVN, Perforce, Visual Studio, OpenGL, Unity3D, Unreal Engine 4