JUNHAO WANG

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EDUCATION

University of Southern California (USC), Los Angeles, US — Aug. 2019 - May. 2021
Master of Science in Computer Science — GPA: 3.90 / 4.0

Israel Institute of Technology (Technion), Haifa, Israel — Jul. 2017 - Aug. 2017
Summer Program Certificate — Top 15%

Shantou University (STU), Guangdong, China — Sep. 2014 - Jun. 2018
Bachelor of Engineering in Computer Science — GPA: 3.74 / 4.0

WORK EXPERIENCE

Software Development Engineer II, Game Tech, Amazon Web Services — Jun. 2022 - Present

Amazon GameLift Streams

- Worked on launching a new AWS service (Amazon GameLift Streams) that streams games at up to 1080p 60 FPS to any device
- Designed and implemented internal streaming scoring system that is aimed to improve streaming quality via WebRTC protocol
- Being in the service on-call rotation and contributed to improvements on technical documentation

Open 3D Engine (O3DE)

- Worked on an open-source game engine that enables developers and content creators to build games and simulations
- Published 70+ pull requests to O3DE repositories, reviewed 140+ pull requests from peers, and created 40+ GitHub issues
- Improved and optimized Prefab system for building game objects in large scenes and refactored undo/redo editor workflows
- Developed Prefab Override features and added visualization in Entity Outliner and Inspector to enable users editing overrides

Software Development Engineer I, Alexa Speech, Amazon — Jul. 2021 - Jun. 2022

- Worked on a high-TPS AWS service that processes real-time contextual dialog data to improve recognition accuracy by 10%
- Collaborated with research scientists to design and build experimental tools to test and evaluate contextual dialog models

Software Development Engineer Intern, Alexa Speech, Amazon — Jun. 2020 - Aug. 2020

- Initiated and developed a Spark aggregator that reduces model rebuild cost and time of training Alexa static models
- Deployed the application on AWS EMR clusters with CloudFormation and released it on CD/CI pipelines with tests
- Wrote design and runbook documents, delivered high-quality work on time with a final presentation

OTHER EXPERIENCE

Personal Project: Palico Engine (Metal-Based Game Engine)

- Developed a small game engine application with Metal API and Cocoa that supports multiple layers, event system, and editor
- Built UI with ImGui and contributed to open-source project SwiftImGui by converting the latest macOS backend to Swift
- Created a renderer encapsulating command encoders and pipeline states and a shader library that complies MSL shaders
- Made an entity component system MothECS that manages entities and components with bitmasks and supports view operation

Course Project: Plan Odyssey (3D Exploration Unity Game)

- Collaborated with two students on a sci-fi exploration game where players play as astronauts to explore outland planets
- Implemented smooth player control, Cinemachine cameras, walk and jump animations, jetpack system with particle effect
- Learned compute shader techniques and achieved beautiful large-scale grass without noticeable FPS drop
- Designed a beautiful planet with PolyBrush and made scripts to manage day / night cycle and sunrise / sunset

Course Project: Campus App at Shantou University

- Created an iOS campus app in two months and released 14 versions on App Store with a 4.7 / 5.0 rating and 15,000+ users
- Ranked 7th out of 300+ apps in the First China iOS App Development Competition in 2017

TECHNICAL SKILLS

Programming Languages — C/C++, C# (.NET), TypeScript, Java, Python, Swift, Objective-C, MSL, GLSL, MATLAB
Tools & Frameworks — Visual Studio, Unreal Engine (Blueprint), Unity, Metal, OpenGL, ImGui, CMake, CDK, WebRTC
Relevant Courses — Data Structures, Algorithms, Computer Graphics, High Quality Real-Time Rendering