

K. Komal Shashank

Game Programmer

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WORK EXPERIENCE

DOUBLE ELEVEN (C++ Game Programmer (Mid-Level)) Nov 2020 – Present

Unannounced Unreal Engine 5 Game Mar 2023 – Present

Unreal Engine 5 – Unannounced Platforms

- Worked on implementing gameplay features using UE5's Gameplay Ability System (GAS) and GAS concepts such as Gameplay Abilities, Gameplay Effects, Gameplay Cues and Gameplay Tags.
- Worked on implementing NPCs and NPC behaviors using UE5's State Tree System.

Prison Architect (Management Simulation) Nov 2020 – Feb 2023

Visual Studio C++ – PlayStation 4, Xbox One, Windows PC, Nintendo Switch

- Implemented new DLC gameplay mechanics such as Subsidence, Weather Calamities, Disarming Certification and the Boiling Point System.
- Implemented new DLC item and NPC types such as Repairmen, Crooked Guards and the Lightning Rod.
- Experienced working on and maintaining a Visual Studio C++ project with a pre-existing codebase.

GEARBOX SOFTWARE (Junior Programmer) Jun 2017 – May 2020

Project 1v1 (First Person Shooter) Nov 2019 – May 2020

Unreal Engine 4 – Windows PC

- Refactored and improved spectator system to accommodate ongoing feature changes and additions.
- Gained an understanding on UE4's client-server replication and its usage in an online multiplayer game.

Borderlands 3 (First Person Shooter) May 2019 – Sep 2019

Unreal Engine 4 – PlayStation 4, Xbox One, Windows PC, Google Stadia

- Rewrote a more optimized version of the boundary turret targeting, out-of-bounds detection mechanic.
- Experienced working on a AAA project with large pre-existing codebases, both game and engine side.
- Provided additional code support, bug-fixing and optimization during post-alpha phase.

Borderlands 2 VR (First Person Shooter) Mar 2018 – Apr 2019

Unreal Engine 3 – PlayStation VR, HTC Vive, Oculus Rift

- Ported game to VR platforms, adding new controller support and game mechanics.
- Adapted on-foot and vehicular locomotion systems to VR, fine-tuned to reduce VR motion sickness.
- Designed and developed a new alternate teleportation-based locomotion mechanic exclusive to VR.

Penn & Teller VR: F U, U, U & U (Interactive Magic) Jun 2017 – Feb 2018

Unreal Engine 4 – PlayStation VR, HTC Vive, Oculus Rift & Quest

- Designed and developed four magic trick experiences with feedback from Penn & Teller.
- Designed and developed several in-world UI elements including a video tutorial system.

TEAM GAME PROJECTS

Mouse Playhouse (VR) Programmer	Azimuth Programmer
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Unreal 4.13.0 – HTC Vive 3D VR Puzzle Game

- Team of 18, May – Dec 2016 (20 weeks).
- Grid system and pickupable object mechanics.
- Movement physics and behaviour system for mice and meowbots.
- Various interactable sandbox object mechanics.

Unreal 4.10.2 – Multiplayer 4v4 CTF FPS Game

- Team of 9, Jan – May 2016 (12 weeks).
- Major implementation of Quazar mini-gun and prototyping of remaining two weapons.
- All menu systems with all HUD/UI elements.
- Final game trailer (design and editing).

King Pufferfish Programmer	Boat Physics Simulator Programmer
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Unity 5.1.2 – Android Handheld Touchscreen Game

Visual Studio C++ – Physics Tech Demo Game

- Team of 5, Oct – Dec 2015 (8 weeks).
- All character attack mechanics and behaviours.
- Main menu, pause menu, score system, HUD and UI for the game.
- Final game trailer (design and co-editing).

- Team of 3, Jan – Mar 2016 (6 weeks).
- Water physics simulation using particle-based constraint relaxation.
- Water tile-based map generation system.
- Boat-water collision using AABB vs. particles.

INDIVIDUAL PROJECTS

Mining Adventure

Voxel-based Procedurally Generated Open-World Game

- Procedurally generated 3D voxel-based terrain with dynamically generating terrain.
- Basic voxel world global illumination and specular Blinn-Phong lighting with day-night cycle.
- Basic AABB physics between players and environment using simple AABB player entities.
- Two-player split-screen mode with independent terrain generation and dual player controls.
- Stationary attacking enemy AI and basic water rendering implementation with reflection and refraction.

Missile League

Multiplayer 2v2 Networked Football Game

- Basic client-server networking system implementation using UDP.
- Interface for creating networked connections and sessions using UDP sockets.
- Message passing system for sending reliable and unreliable messages using packets.
- 2D car-based football game application using the implemented network system.
- Networked implementation of 2D capsule physics for cars and circle physics for the ball.

2D Physics Engine (Thesis)

2-D Rigid Body Physics Simulation Engine System

- Four basic physics shapes, namely line, circle, capsule and convex polygon.
- Rigid bodies containing one or more shapes as part of their fixtures.
- Broad-phase collision detection with dynamic AABB tree implementation.
- Narrow-phase collision detection with contact point generation.
- Constant time-step simulation with impulse-based constraint resolution.

SKILLS

Languages	C/C++, C#, Unreal Blueprints, UnrealScript, HTML/XML
Software	Unreal Engine 3/4/5, Unity 5, Visual Studio, Perforce, Git/GitHub, JIRA/Confluence/Bamboo, Azure DevOps, PlayStation 4 Neighborhood, Xbox One Manager
Platforms	PlayStation 4/PlayStation VR, Xbox One, Windows PC/Steam/Epic, Nintendo Switch, Google Stadia, HTC Vive, Oculus Rift/Oculus Quest, Android

EDUCATION

The Guildhall at Southern Methodist University , Plano, TX, USA	May 2017
<i>Master of Interactive Technology in Digital Game Development</i> , Software Development	
Vignana Bharathi Institute of Technology , Hyderabad, India	May 2014
<i>Bachelor of Technology</i> , Computer Science and Engineering	