Lahiru Wijesundara
Gameplay Programmer

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PROFILE

Experienced gameplay programmer with a master's degree in commercial games development and over 6 years of expertise in game programming and published games on Steam. Proven track record of writing clean, efficient, and maintainable gameplay systems. Thrives in team environments and consistently delivers high-quality work within deadlines. Committed to continuous learning and staying updated on the latest advancements and improvements in key skills relevant to game development.

KEY SKILLS

• Gameplay programming	• C++, C#	• UE network programming	• Git, Jira
• Unreal engine 4 & 5	• Debugging and profiling	• Console porting	• Prototyping
• Unity engine	• Unreal blueprint scripting	• Gameplay AI	• Teamwork

WORK EXPERIENCE

Senior unreal engine gameplay programmer, Peanut Brain Studios, Tokyo, Japan (Remote), Part-time   May 2021 – Present
Combat Beans: Total Mayhem | Steam Game, "Fall Guys" like a third-person shooter, multiplayer | Unreal engine 4 & 5
- Setup dedicated server for the game using the Unreal engine multiplayer framework and GitHub source build
- Integrated features such as dynamically scalable servers and matchmaking using C++ Microsoft Azur PlayFab plugin
- Developed gameplay mechanics using the unreal engine gameplay framework, including creating custom game modes and game states to manage game rules and state transitions
- Implemented dynamic HUD elements using UMG UI designer
- Implemented multiplayer gameplay mechanics using UE network framework. Ensured server-authoritative game logic and optimisation techniques such as net dormancy, net relevancy
- Implemented a reusable modular weapon system
- Implemented a point-based experience progression system and cosmetic items unlocking system
- Created a Steam page and published the game on Steam using Steamworks
- Developed a component-based modular, reusable gameplay system to integrate Steam achievements
- Provided technical guidance to the development team, offering advice for resolving technical challenges

Senior unity gameplay programmer, The Foundry UWE, Bristol, United Kingdom (On-site), Part-time   Oct 2023- Sep 2024
Nom Boy's Love for The World | PC, puzzle platformer | Unity
- Implemented player movements and slope mechanics using the Unity character controller
- Implemented third-person free-look camera, aim camera and camera transition mechanics using Cinemachine
- Implement a generic input system which supports a gamepad and keyboard/mouse
- Ported the game to PS5, utilising the console's advanced features, such as haptic feedback and button colour changes
- Provided accurate development estimations for programming tasks, enabling precise sprint planning

Transport Decarbonisation | Web browser, serious game | Unity
- Built the game for WebGL and hosted it in Itich.io
- Reviewed code written by other team members, ensuring code quality and adherence to coding standards.
- Implemented systems such as vehicle movement, tracking monthly CO2 emissions using C# script and scriptable objects

Senior software engineer, SimCentric, Oxford, United Kingdom (Remote), Full-time   Dec 2020 – Sep 2023
Software engineer   April 2018 – Nov 2020
SAF-TAC | Epic mega grant recipient ($250,000), PC, VR, third-person, multiplayer, oculus quest | Unreal engine 4 & 5
- Debugged and optimised game mechanics using Unreal Engine's built-in tools such as blueprint debugger, visual studio and unreal insights
- Implemented advanced AI systems using Unreal engine's AI controller, behaviour tree, AI perception system, blackboard, navigation system and environment query system (EQS). This includes a crowd simulation
- Developed a C++ plugin for a full-body VR avatar system that utilises inverse kinematics (IK) and animation-driven 3-point tracking for accurate motion representation using the control rig in the Unreal engine
- Increased the maximum number of concurrent players by 50% while adhering to UE multiplayer best practices
- Integrated a customisable weather control system enabling users to adjust elements such as rain, snow, wind, cloud density, fog, and time of day through a user interface
- Utilised animation blueprint, animation montages, state machines, and blend spaces to develop game mechanics
- Worked closely with the QA, design and art team to develop, iterate, and polish gameplay systems

- Guided interns and software engineers, aiding them in enhancing their coding skills, comprehension of game development procedures, and overall professional advancement

SAF-FIRES | PC, JTAC training simulator | C++ Proprietary engine
- Implemented aircraft manual control system using an open-source C++ flight dynamics model (JSBSim) with standard joystick support

Unreal engine gameplay programmer, Sigma Phi Labs, Beijing, China (Remote), Part-time   **Mar 2023 – Aug 2023**
Sigma Phi Laboratory | PC, serious game, third person | Unreal engine 5
- Created a C++ plugin using the "License Spring" SDK to handle user licensing
- Implemented player data saving & loading system using Microsoft Azur PlayFab
- Reduced game loading time by 20% through optimisation techniques

Unreal engine gameplay programmer, Ksavage Media, Utah, USA (Remote), Part-time   **May 2022– Feb 2023**
The Edge of The World | PC, open-world, action RPG, third person | Unreal engine 4 & 5
- Implemented player combat system, including weapon motion-based hit detection
- Implemented enemy AI using Unreal engine's behaviour tree, environment query system, and AI perception
- Collaborated closely with art, design and development teams, ensuring visual and functional requirements were met

RESEARCH

2D ML Fighter | PC, Unity, Unity ML-Agents, dissertation| Associated with UWE Bristol MSc   **Feb 2024- Aug 2024**
A novel comparative study of DQN and PPO machine learning algorithms in a 2D fighting game using Unity ML-Agents
- Created a 2D one-on-one fighter game as a testing environment, including mechanics such as move and slash attack
- Integrated PPO and DQN algorithms using an ML toolkit and created a system to train the agents based on rewards
- Used IBM SPSS statistical analysis tool to compare agent performance

EDUCATION

University of the West of England, United Kingdom, MSc commercial games development (First class)   **Sep 2023 – Sep 2024**
University of Peradeniya, Sri Lanka, BSc special in computer science (Second Class, Division 1)   **Jan 2014 – Dec 2017**

INTERESTS & HOBBIES

- Big fan of watching YouTube channels like Game Maker's Toolkit, Design Doc and Masahiro Sakurai on Creating Games and Inside Unreal to learn more about game design and development
- Passionate about playing and analysing various video games, including action-adventure games like God of War, strategic city-building games like Against the Storm, and FPS multiplayer games like Valorant.

References available upon request