

Saeed Barari

12/10/2001 Software Developer, Game Developer (7yrs in field)

I'm a self-taught Unity developer with years of experience in field, having worked with various clients, having done contract works and employment, I've gained knowledge about this industry around the globe. Some key skills of mine are:

- **Gameplay and Tools Programmer** (Win32, Avalonia, IMGUI)
- **Technical Artist** (shaders, rendering pipeline, import pipeline)
- **UI programming** (UGUI, Unity's IMGUI)
- Great understanding of C# (down to its low-level implementations and unsafe territory)
- Can write Analyzers, Code Fixes and Source Generators for C#
- **3rd party implementation** (Firebase, Unity Ads, PlayFab, Photon Fusion, Mirror, Solidity...)
- Performance Optimization, with low-level knowledge of C# and Unity
- Knowledge of high-level networking using REST, WebSocket, raw TCP/UDP (and socket.io)
- Interop with high performance C compiled programs
- WebGL builds & optimizations, as well as maintaining NGINX on the server
- **Addressables & Asset Bundles** as well as custom means of dynamic loading
- Shallow understanding of Multi-threading and atomic systems, including hardware-level and OS-level events.

Experience

Eonfall (from NeoHelm Game Studios) 7.2024 – present
ref www.eonfall.com

Joined the development of the game using Unity and Mirror. Helped with optimization of various bottlenecks, implementation of new features like a shop system and control mapping settings and tutorial, fixing various in-build bugs and in-editor bugs.

Crown Chaser (from Portuguallo LTO) 10.2023 – 5.2025
ref www.crownchaser.com

Created real-time multiplayer gameplay with Photon Fusion and used PlayFab for database and user authentication, writing custom cloud scripting to handle special systems, wrote a custom HTTPS backend for various tasks with NGINX as the main listener and Unity Dedicated Server build as the main handler, migrated the game to WebGL and handled dynamic UIs and web focused optimizations among other things. Implemented on-chain smart contract with Solidity on ETH, although it never went to production.

Freelancing 8.2023 – 10.2023

Worked on a pixel-art game; implemented new timeline tracks; created full blown dialogue system with choices and actions with a system for extra extensions; created enemy AI with room for extensions; used Roslyn Analyzers APIs to create a source generator; created a full-blown game state system with Scriptable Object variables; worked on navmesh with multiple layers and networking; created a turn-based game; ...

CertainLab (Startup) 10.2022 – 8.2023

Creating online game infrastructure from scratch, using Model/View design. Added physics simulation system to calculate >100 possible outcomes and use for an AI decision making. Implemented REST and WebSocket clients, along with socket.io relay server to connect multiple clients together.

Medrick (A bestseller in Iran) 2.2022 – 10.2022

ref https://play.google.com/store/apps/devId=6721137307409517045

Worked on the two projects Blue Nissan & About Goli. Developed in-engine tools targeting the efficiency and productivity of both our developers and designers. Developed various in-game events & features (i.e., New Year event, Piggy Bank and Daily Reward) Added animations and various technical inputs to the visual look of the game.

Freelancing / Metal Hunter 1.2020 – 2.2022

ref https://store.steampowered.com/app/1781520/Metal_Hunter

Created gameplay structure & implemented enemy AI. Implemented various smaller systems like player's ears spring system, wave system, item dropping system, player controller etc. Helped migrate the project scriptable pipeline from Unity-built-in to HDRP.

Freelancing / Virus Colony Battle 11.2019 – 1.2020

ref https://play.google.com/store/apps/details/Virus_Colony_Battle?id=com.BlikCry.NeoVirus

Implemented the enemy AI with A* (A-star) algorithm with C#.

Freelancing / Others... 2018 – 2022

Worked on various small freelancing projects with different tasks, ranging from a spaceship shoot & navigation system, spawn system, inventory & upgrade system, 3D player controller etc., and a showcase video of some of them are visible at my YouTube channel: https://www.youtube.com/channel/UCgWTtt1h-5OfbP5ruFr8w/

Personal Projects

Game Engine With C++ and CMake and OpenGL

ref https://github.com/somedev00/HelloWorld

An in-development game engine, focused on learning different aspects of game engine development, including Job System, renderer, component and entity hierarchy system, UI programming from scratch.

Implemented integrations include TapSell ads, GameAnalytics SDK and Bazaar IAB.

Park Defense: A Tower Defense Game

ref https://github.com/somedev00/tower-defense

ref https://cafebazaar.ir/app/com.esbl.parkdefense

Developed a full game by myself, as a practice to learn different technologies.

Implemented integrations include TapSell ads, GameAnalytics SDK and Bazaar IAB.

Implemented system include path following, level and wave system, server-controlled configs system, anti-time-cheating system and mesh outline system.

Bindject: A Dependency Injection plugin for Unity

ref https://github.com/somedev00/binject

Developed a system that handles contextualized dependency injections for Components and any other class or even structs. The golden feature here is that it allocates minimum garbage for its processing, down to even zero bytes for structs. It can perform up to 2500 injections for less than 2 milliseconds.

AnimFlex: Sequencer/Tweener

ref https://github.com/somedev00/AnimFlex

Developed this tool within Unity/C# as a free and performant Tweener and Sequencer.

In a fair performance test, it ended up performing ~40% faster than DOTween! (The fastest Tweener on the market)

Its Sequencer uses a finite state machine to give designers the ability to fully integrate their ideas into pieces of clips and animations, while developers can extend the system as they see fit (the system is designed in a way that any Assembly can extend its functionality)

Unity TODO: A Task management inside Unity

ref https://github.com/somedev00/UnityTodo

Developed inside Unity. It's a task management system with intuitive user interface. It's designed to make the work of a developer easier by breaking their tasks in smaller pieces right where they work, and have easy access to editing it.

The UI is influenced by Trello.

Geometric: visualization of graphical shapes

ref https://github.com/somedev00/Geometric

Developed a system in Unity that creates beautiful 3D & 2D geometrical visuals, given a set of configurations.

Unity GUI Array Drawer: Manual array drawer solution

ref https://github.com/somedev00/UnityGUILayout

Created a Unity Editor extension that enables the manual display of arrays.

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Skills:

Unity {
Timeline, Playables, Shaderlab, IMGUI, UGUI, Burst, ECS, Physics, Navmesh, MonoBehaviour, Asset Import Pipeline, Build, Details of Player Settings, UPM, Serialization/Deserialization, Localization, Addressables & Asset Bundles, WebGL Plugins {
Odin Inspector, Zenject, Photon, Unity Ads, Firebase, PlayFab, Mirror } }, C# {
Unsafe, Asynchronous Await, Multi-Threading, Analyzers, Code Fixes, Source Generators, Networking, Generics, Thread_Statics, Unmanaged Scopes, Interop } }, C++ {
template metaprogramming, CMake, header-only project, multi-threading, compile-time optimizations, lock-free containers, profiling with Tracy and VTune, compiler intrinsics } }, Networking, SSL, CORS, UI, HLSL, CG, Python, Git, OOP, ECS, C/C++, atomics, CPU and DRAM cache handling, Java, Data Science, Machine Learning

Educations:

- Bachelor of Computer Science at Ferdowsi University of Mashhad (FUM)
- Self-taught software & game development
- Taken a few Lynda & Udemy courses
- Self-learning OpenGL, C++, Game Engine design and Japanese

Activities & Awards:

- 2nd at an annual local game development contest at State-wide level
- Won an online game jam: https://itch.io/jam/learn-unity-jam-2
- Article about ECS architecture in Unity at https://hackmd.io/@saeedbarari/DOTS-starters-advanced
- Article about applications of matrix in computer graphics at https://hackmd.io/@saeedbarari/matrix-app-CG
- Contributed to OEIS on a sequence that could be used to optimize box blur algorithms, at https://oeis.org/A350236 (whitepaper at https://github.com/somedev00/A350236-white-paper/blob/main/a350236.pdf)
- مقاله فارسی در مورد انتگرال ها در سیستم بلور و ساختن آن در https://hackmd.io/@saeedbarari/atomics-cpp-persian

Speaking Language:

English (fluent), فارسی (پادشاهی), نپالی (مادری), Japanese (これと言って)