

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 (**Firestore**, **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 NeoReIm 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 Portugallo Ltd) 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/dev?id=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/UCgcWTTT1h-ISOfbPSruFr8w/>

Personal Projects

Game Engine With C++ and CMake and OpenGL
ref <https://github.com/somedevolper00/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 programing** from scratch.
Implemented integrations include **Tapsell ads**, **GameAnalytics SDK** and **Bazaar IAB**.

Park Defense: A Tower Defense Game
ref <https://github.com/somedevolper00/tower-defense>
ref <https://cafebazaar.ir/app/com.esbi.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.

Binject: A Dependency Injection plugin for Unity
ref <https://github.com/somedevolper00/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/somedevolper00/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/somedevolper00/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/somedevolper00/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/somedevolper00/UnityGUIArrayDrawer>

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

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- github.com/somedevolper00

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/somedevolper00/A350236-white-paper/blob/main/a350236.pdf>)
- مقاله فارسی درمورد اتیک ها در سیریل-پلاس و سخت‌افزار، در <https://hackmd.io/@saeedbarari/atomics-cpp-persian>

Speaking Language:

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