

POOYA EIMANDAR

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REFRENCES

Mohammad Hossein Rezvani, PhD
The Head of University of Applied
Science and Technology National
Foundation of Computer Games Branch
<https://sites.google.com/site/mohammadhosseinrezvani/home>

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SUMMARY

Co-Founder & CTO at ARIUM, an international cloud gaming company.

CEO, board member and co-founder of Alpha, the parent company of PlayPod, the first cloud gaming console in Middle East.

Technical leader of Wolf Engine, a game engine (was open source during 2016-2021) developed for real-time rendering, streaming and ray tracing as well as game developing.

My latest book is "DirectX 11.1 Game Programming" published by PackT in 2013, moreover my latest video course is "Vulkan From Zero to Hero" available on YouTube channel.

With more than 15 years' experience in programming specifically C/C++/C#/HLSL/GLSL, I'm passionate about game developing and GPU programming and cloud architecture.

Currently working on GPU virtualization/GPU partitioning via the next generation of Wolf which is developing based on C/C++/Rust.

TECHNICAL SKILLS

- Architecting cloud infrastructure
- Agile software development, and project management skills such as leading, coaching and mentoring
- Intensive experience in POSIX and UNIX systems
- System/Microservice developing via C / C++ / Rust / Go / Python / Lua
- Embedded system developing via FPGA/ Raspberry Pi / Micro Controllers
- GPU programming via DirectX / Vulkan / Metal / OpenGL / OpenGL ES/ WebGL / WebGPU
- Familiar with PhysX and Bullet Engine
- Game Developing with Unreal Engine
- GPGPU programming via OpenCL / C++ SYCL/ CUDA
- Implemented real-time streaming protocol for media such as RTSP, RTMP, WebRTC via C/C++/Rust.
- Experience with event streaming platform such as Kafka, Red Panda and etc.
- Implementing real-time systems
- Expert in-memory data store such as Redis, Memcached
- Expert in databases like ScyllaDB, PostgreSQL, RocksDB, MongoDB, Oracle, MySQL
- GPU partitioning and GPU virtualization via AMD and Nvidia graphics cards
- Great Experience with threads, fibers, coroutines and processes
- VCenter, VMware solutions for virtualization
- Kubernetes and docker
- Web Assembly (WASM)
- Cross building on Android/IOS/OSX/Windows/Linux/WASM

EMPLOYMENT HISTORY/JOB HISTORY

Co-Founder and CTO 2022 – Present
Arium Portal Ltd, Dubai

About Company:

Arium Portal Ltd is a private company based in Dubai, working on cloud gaming, XR and game developing solutions.

My Roles and Responsibilities:

- Develop, launch and scale out a cloud gaming console namely <https://RivalArium.com> based on my in-house game engine namely Wolf Engine
- Management of technical teams in order to achieve milestones
- Design the architecture of a cloud which is distributed over various datacenters.
- Implement an eSport platform which provides leader-boarding, multiplayer, matchmaking and NFT solutions.
- Implement a real-time streaming cross platform solution in order to play any triple-A game on any device, at any time, and the possibility of game live broadcasting.

Co-Founder, Board Member and CEO 2021 – Present
Alpha Co, Iran

About Company:

Alpha is the parent company behind project PlayPod. the first cloud gaming platform in Iran & Middle East.

My Roles and Responsibilities:

- Making major corporate decisions and managing the operations and resources of the company.
- Managing strategy and structure of the company as well as communicating with the board.

- Directing agendas, driving profitability and shutting down non-priority areas during scaling as time passes and revenues grow.
- Create a better future for game industry

Project Manager & Business Owner 2017 – Present **Fanap Co, Iran**

About Company:

Fanap is private company which is playing a leading role in the development and delivery of valuable projects for the growth and expansion of ICT industry in Iran.

My Roles and Responsibilities:

- **Project Falcon:** I implemented a true real-time 3D simulator and monitoring system for ERP. (link: https://youtu.be/ygpz35ddZ_4)
- **Project PlayPod:** I'm the Co-Founder and Leader at [PlayPod](#), the first cloud gaming platform in Middle East. I developed a cloud based real-time game streaming platform in order to play PC games anywhere on any platform over internet. This is a cloud gaming platform for eSports, developed based on Wolf Engine. In fact, Play Pod is similar to Google Stadia or Microsoft XCloud projects, yet it was developed and launched almost a year prior to these big projects. It provides leader boarding, multiplayer and matchmaking solutions. Plus, the game could be broadcasted for users.

Founder and Lead Developer 2016 – Present **Wolf Engine, FOSS on github**

About Company:

Wolf Engine is passionate about 3D Graphics Technology. it is an in-house studio, working on games, game engine, 3D tools, backend services and TV broadcasting tools.

My Roles and Responsibilities:

I founded Wolf Engine in 2016 as an open-source project on [Github](#). This is the next generation of [Persian Game Engine](#), a cross-platform open source game engine which I developed during 2009-

2016. Wolf Engine is written in C/C++/Rust and supports Python and Lua as an embedded script language. This is a set of Rust/C++ opensource libraries for real time rendering, real time streaming and game developing. (<https://opensource.com/lib/wolf.engine>) Wolf has been developing since 2021 as a closed source game engine by the request of investors.

Projects which I implemented based on Wolf:

- **Wolf.PlayOut:** This is a TV broadcast playout automation software that is currently used by AlAlam News Network TV and optimized based on MOS protocol. The Playout was developed based on my in-house open source game engine called "Wolf Engine" and is switchable between SD/HD/2K and 4K broadcasting formats. (<https://www.youtube.com/watch?v=EZSdEjBvuGY>)
- **Wolf.CG:** Plays simultaneous layers of dynamic graphics includes videos and images in real-time 3D/2D view for all broadcast. Wolf.CG supports inputs and outputs of both SD and HD to HD-SDI, HDMI and/or computer screens with key/alpha, including SDI-embedded audio. High-performance with asynchronous and multi-threaded I/O and paired with GPU-accelerated real-time rendering.
- **Falcon:** A true real time 3D simulator and monitoring system based on Wolf Engine and developed for Fanap holding's ERP and which is the next generation of monitoring systems. (https://youtu.be/ygpz35ddZ_4)
- **PlayPod:** launched as the first Cloud Gaming and Streaming platform in Middle East in 2019 and with greatest pride, PlayPod is standing shoulder to shoulder with the big names in game industry; after Nvidia GeforceNow, Sony PlayStation Now and before Microsoft XCloud and Google Stadia. PlayPod is achieved based on WolfEngine. (<https://youtu.be/14KRyURyszI>)

Project Manager and project advisor 2014 - 2017 **Al-Alam News Network, Iran**

About Company:

Al-Alam is an Arabic news channel

My Roles and Responsibilities:

Generating new development tools for real time Playout & CG editor based on MOS protocol. Implemented with FFmpeg & pure DirectX 11.1 on windows 8\ 8.1\ 10 that can be used on Windows 7(with platform

update), also integrated with Decklink cards for real time capturing, cg editing and play backing HD/SD medias. (Tested on Blackmagic Design DeckLink 4K Extreme card).

The graphical core of this application was achieved based on Wolf Engine.

Member of IGDF jury panel for the best Computer Game Technology, IGDF, Iran 2014 – Present

About the festival:

IGDF.ir is annual game festival in Iran

My Roles and Responsibilities:

Member of IGDF jury panel for the best computer games technology.

Lecturer

2014 – 2015

Iran Game Development Institute, Iran

My Roles and Responsibilities:

Teaching courses such as C++, OpenGL ES and DirectX Programming at Iran Game Development Institute.
www.irangdi.ir

Lecturer

2013 – 2015

**The University of Applied Science and Technology
National Foundation of Computer Games, Iran**

About University:

The first university in the field of game developing in Iran.

My Roles and Responsibilities:

Teaching courses such as C++, C#, GPU Programming, at the University of Applied Science and Technology National Foundation of Computer Games.

Microsoft Partner 2012 – 2019

Microsoft, USA

About Company:

Microsoft Corporation is an American multinational technology corporation which produces computer software, consumer electronics, personal computers, and related services.

My Roles and Responsibilities:

I am one of the member of Microsoft Partner Network.

<https://social.msdn.microsoft.com/profile/pooya%20eimandar>

Project supervisor and adviser

2011 – 2013

Eirib.ir, Iran

About Company:

Eirib is the technical department of Islamic Republic of Iran Broadcasting.

My Roles and Responsibilities:

Project supervisor and adviser at the department of IPTV game.

Founder and CEO 2010 – 2015

BaziPardaz, Iran

About Company:

BaziPardaz is a knowledge-based company Ltd with the focus on simulators and GPU based real time applications.

My Roles and Responsibilities:

Founder, Board Member and CEO at BaziPardaz, also working as lead programmer of Persian Game Engine. The Persian Engine is a 3D game engine achieved by DirectX 9 and it was the core of BaziPardaz's projects. BaziPardaz published many projects during 2010-2015, including but not limited to:

- An open source Game Engine on <https://vimeo.com/channels/bazipardaz> . Persian Engine was **ranked second** in the best technology of computer games of International Digital Media Festival & Fair 2011-2012.
- A third person shooter PC game named The Land (<https://vimeo.com/106925703>)
- An online virtual 3d city named City2. (<https://vimeo.com/80917932>)
- An interactive Kinect PC game named Master Chef. (<https://vimeo.com/93597108>)
- A pipeline framework for Facial Animation between Persian Engine and Autodesk Softimage/Motion Builder (<https://vimeo.com/79210871>) (<https://vimeo.com/83172048>)
- An editor for Persian Engine (<https://vimeo.com/79195038>)

Senior Silverlight Developer 2009 – 2010 Safa Rayaneh LTD, Iran

About Company:

Safa Rayaneh is the largest company active in the field of municipal automation in Iran. Their software solutions have been used as a comprehensive solution for municipal automation in different cities of Iran.

My Roles and Responsibilities:

Developed an online CAD collaboration same as Autodesk Butterfly with XNA and Silverlight 5.

Senior DirectX Developer 2008 – 2009 RasaPardaz LTD, Iran

About Company:

Rasa is a private company working on developing simulators.

My Roles and Responsibilities:

Developed a Windows GUI for simulator based on DirectX 9.

PUBLICATIONS

March 6, 2018

The next generation of GPU APIs for Game Engines Published at Seminar of Sharif University of Technology

Demonstrates new pipeline of GPU APIs for
developing real time game engine.

SlideShare: <https://www.slideshare.net/PooyaEimandar/the-next-generation-of-gpu-apis-for-game-engines-89840846>

YouTube: https://www.youtube.com/watch?v=w34s29HZ_5o&t=17s

Jan 1, 2016

Game Programming Using Qt: Beginner's Guide Published at PackT Publishing

I was one of the technical reviewers of the book "Game
Programming Using Qt: Beginner's Guide" by Witold Wysota and Lorenz
Haas.

<https://www.packtpub.com/game-development/game-programming-using-qt>

Jan 30, 2014

Learning Modern C++ for Game Programmers Published at CodePlex

This is an open source project devoted to teaching how to program
in Modern C++, regardless of any prior experience in programming. This
project is hosted for self-studying modern C++ besides game
programming.

Jan 27, 2014

The use of motion sensors in medical and health industry, Published at Conference of Game & Medical Health

<http://www.slideshare.net/PooyaEimandar/ss-38769072>

Oct 11, 2013

DirectX Graphics Diagnostic Published at GameDev.net

An article about GPU graphics diagnostic on <http://www.GameDev.net>

debugging a captured frame is usually a real challenge in comparison with debugging C++ code. We are dealing with hundreds of thousands of more, pixels that are produced, and in addition, there might be several functions being processed by the GPU. Typically, in modern games, there are different passes on a frame constructing it; also, there are many post-process renderings that will be applied on the final result to increase the quality of the frame. All these processes make it quite difficult to find why a specific pixel is drawn with an unexpected color during debugging.

http://www.gamedev.net/page/resources/_/technical/directx-and-xna/directx-graphics-diagnostic-r3380

Aug 17, 2013

book "DirectX 11.1 Game Programming" Published at PackT Publishing

DirectX 11 is packed with features to meet the demands of modern gamers, multi-core processors, and the latest Microsoft operating systems. This book gives you access to all that with an exemplified, user-friendly approach.

<https://www.packtpub.com/game-development/directx-111-game-programming>

ACHIEVEMENTS

- Persian Game Engine was ranked second in the best technology of computer games of International Digital Media Festival & Fair 2011-2012. (<https://saramad.farhang.gov.ir/fa/news/18124/>- از 18-اثر-برگزیده-در-بخش- (فناوری-و-نوآوری-تقدیر-شد)

- PlayPod have been selected as the winner of National Festival of Iranian Top Product Innovation in 2021.
(<https://www.linkedin.com/feed/update/urn:li:activity:6773194545506074624>)

CERTIFICATIONS

Be the Manager People Won't Leave

LinkedIn Learning

Issued Nov 2021

Credential ID: AfKly-k06oWKNQmo2-KkXL4SNeo3

Introduction to NFTs: Non-fungible Tokens

LinkedIn Learning

Issued Nov 2021

Credential ID: AetqEDvzPIQV7RP24kFaKjT2x3qg

Enhancing Leadership Capacity for Managers

TCAPU School

Issued Oct 2021

Credential ID: M-1400-505/3751

Strategic Thinking

PMI®

Issued Nov 2021

Credential ID: Ad5gUixVIK8LPoEL3M7f2dwyQXFh

Leading Yourself

National Association of State Boards of Accountancy (NASBA) & PMI®

Issued Nov 2021

Credential ID for NASBA: AVyU37JClzEB-4Uy72ureJowOX5j

Credential ID for PMI: ASsVsD3YO9UNrVB_IDXkf42bLtvj

Rust Essential Training

LinkedIn Learning

Issued Jun 2021

Credential ID: AZ7HbZQ5N_uP7pyfrqOv04-HprUI

Advanced Grammar

National Association of State Boards of Accountancy (NASBA) & PMI®
Issued Apr 2021

Credential ID for NASBA: AY7aHGDI5o7Cv-cKSv2fGxxINJQ2

Credential ID for PMI: Ae-pkhWQJYXz3-QZnIQMqAqXxe9p

Grammar Foundations

National Association of State Boards of Accountancy (NASBA)
Issued Feb 2021

Credential ID: AU0tKfhF_YKKHbZ7y08bT7KC7trq

Writing in Plain English

National Association of State Boards of Accountancy (NASBA) & PMI®
Issued Jan 2021

Credential ID for NASBA: AW9jBS5hXiUBFK9Pj_vLEXYSnkmT

Credential ID for PMI: ATi50fWEYaeYT1PfHBjjXGtzpUmE

Advanced C Programming

LinkedIn Learning

Issued Aug 2020

Credential ID: AVNdfy5-c2gH9R98RRF2gYHmDuNA

Introducing Functional Programming in C++

LinkedIn Learning

Issued Sep 2019

Credential ID: Aa9TeVuCzPfljI9ZhJBR6jwVakS_

First Look: Rust

LinkedIn Learning

Issued Jun 2019

Credential ID: AQ0t5DVBAeLth-K1t-v7QgVfPc2r

EDUCATION

2004, 2008 **Bachelor computer science**
Shomal University
<http://www.shomal.ac.ir/en/>

PERSONAL DETAILS

Inteseted in

- Game developing
- XR
- Cloud Gaming
- Cloud Computing
- New technology
- GPU rendering/programming
- Swimming
- Water Polo
- Animals
- Manchester United FC

LANGUAGES

- English: Full professional proficiency
- Persian: Native