

Hadi Abbasi

Senior Software Engineer

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PROFESSIONAL SUMMARY

Experienced Senior Software Engineer with over 18 years in software development, specializing in backend systems, distributed architectures, and high-performance applications. Proficient in C++ (+6 years), Go Language (2 Years), Nginx/OpenResty/Lua (4 years), and Node.js (2 years), with deep knowledge of Algorithms, Microservices, Concurrency, SOLID principles, Design Patterns, CQRS, Event Sourcing, Saga, and SOA. Strong track record of designing and maintaining scalable backend systems and CDN architectures.

WORK EXPERIENCE

Fatech Electronic (Tehran, Iran, OnSite, Fulltime) – **Senior Software Engineer/Qt C++ Widget Developer**
July 2025 – Present

ICS/ATC Project: Developed, optimized, added new features, and fixed bugs in the legacy ICS-ATC desktop application (a parallel voice communication management system for FXS/FXO/GSM/Console/Hotline/Radio devices used by organizations such as fire departments, emergency services, airports, ...). Achieved this by refactoring the codebase without altering the core architecture, enhancing features like call forwarding, conference management, and parallel call handling using Qt Widgets and SQLite.

MegaShop Online Store (Tehran, Iran, Start Up) – **Senior Software Engineer/Qt C++, QML Developer/Go Lang Developer**
Feb 2024 – Present

- **MegaShop Project:** An application for buying and selling agricultural and food products, developed for customers within the supply (value) chain, with a special focus on food security. We aimed to eliminate intermediaries in the food product supply chain as much as possible to reduce prices! This project consisted of two main parts, both architected and developed by me:
- **MegaShop Client Project:** This software was designed using Qt, C++, and QML. It was built as a multi-lingual application with a fully responsive UI, targeting both desktop and mobile platforms! I implemented the client architecture based on the MVC pattern while adhering to SOLID principles! In Phase 1 of the software, I used QML for the client-side UI; however, in Phase 2, I shifted the project architecture towards a PWA approach and Single Page HTML rendering, making it usable across the web, iOS, and other platforms! In this project I've used some design patterns such as: singleton, factory class, adapter, bridge and ...
- **MegaShop Server API Project:** A server-side application developed using Go Lang as the backend! For this API, by utilizing DDD within the Clean Architecture, I paved the way for the project's future transition to a microservices architecture! The project's database was PostgreSQL, and it was deployed into production using Docker! In addition to the aforementioned aspects, I gained valuable experience in this project, including database migration techniques, programming and designing the Admin Panel Dashboard and Single Page Web Client, utilizing Go Lang templates, and more! This project is stopped now!

Fx-Dracons Trading Robot (Tehran, Iran, Our Start Up) – **MQL5 Developer/Qt C++ developer**
June 2023 - December 2023

worked on developing a (Forex) trading robot in MetaTrader 5 using MQL5!
also, I developed a C++ app with Qt as we needed to have an app that could produce a CSV data file, which could produce economic news times with the correct format! [Source Link](#)

HiCalendar (Tehran, Iran, Opensource) – **Original Author and Qt/C++/QML Developer**
October 2020 – December 2020
Developed an open-source calendar widget supporting Jalali, European, and American calendars using Qt (C++, QML) [Source Link](#)

Parspack (Tehran, Iran, OnSite, Fulltime) – **Senior Backend / Software Engineer**

March 2017 – March 2023

Architecture and development of the [ParsPack WCDN](#) Edge Layer (Microservices): The ParsPack WCDN (website CDN) was built with two core layers:

1. Core Layer (Admin Dashboard)

- Empowered website administrators to configure CDN routing rules, caching policies, load balancing, and security settings through an intuitive interface.
- Developed by 2 of my teammates to streamline backend management for client websites.

2. Edge Layer (CDN Infrastructure) (Nginx/Lua/Node.js/C++/Modsec/Rabbitmq)

Architecture, Design, Developed, Led, and Documented by me!

Designed and implemented a high-performance edge layer comprising two core components:

1. Nginx Core (Linux Servers – Global Deployment)

Implemented a reverse proxy to handle user requests with:

- **Security:** Real-time protection against Layer 7 (L7) DDoS attacks, upload-time virus scanning, and XSS attack mitigation, Ip Access Firewall, SSL support.
 - **Traffic Management:** Intelligent request routing based on load-balancing rules.
 - **Caching:** Dynamic content caching with admin-configurable TTL and four caching strategies: Always, Smart, Static, and Never.
 - **Monitoring & Analytics:** Integrated health checks and traffic metrics collection (via Prometheus).
 - **Data Synchronization:** Used Redis replication for data syncing and RabbitMQ for event delivery.
 - All of the Error/Warning pages were designed in multi-language template mode by admin-selected language, and her/his custom designed pages!
 - Administrators could define response strategies for suspicious requests, selecting from three modes: immediate block, JavaScript-based challenge, or redirection to Google reCAPTCHA.
 - Administrators can also add multiple servers with different weights and set the load balancing strategy to either Round-Robin or C-Hash (with/without cookie persistence).
- 2. Node.js helper Api: for 3 critical functionalities:**
- Applied minification *asynchronously*, *minifies eligible cached files (HTML/CSS/JS/JPG/PNG) based on admin policies* (With Node.js packages) to optimize payload size (reduced bandwidth over 10%-40%)
 - **ModSec Analyzer for WAF Layer (Node.js , C++, N-API)**
Leveraged ModSec C++ library to inspect request headers/bodies.
We blocked malicious requests up to the admin's settings and her/his selected default or admin custom generated rules!
We could send the reason of Waf block to the admin from modsec audit logs!
 - **An IP Reputation module that automatically synchronized trusted threat intelligence blacklists and blocked malicious IP addresses before they reached origin servers.**

Tech Stack: OpenResty, Nginx, Lua, Node.js, Modsec, Redis, C++, N-API, HTTP/2, TLS 1.3, RabbitMQ, Prometheus

Parspack (Lipinic team)(Tehran, Iran, OnSite, Fulltime)–**Senior Software Engineer/Game Developer with C++**

February 2015 – March 2017

Gang-Style mobile strategy game:

I was the main client developer with C++ and the cocos2d engine, and it was fully developed in C++(Blind Code)! Some of my unit tests was developed by C++ in Qt (Widgets)! [Link](#) | [Link](#) | [Link](#) | [Link](#) (source+Export)
There were many things for me to learn from design patterns (like singleton for global game scores managements, factory class and abstract factory for game object creation, object pool for bullets management, bridge for multi language, prototype for game object duplication and ...) to optimization challenges (like using vld for find and resolve memory leaks in the game)! I worked in the Android,IOS,Windows app layer, and my colleague was developing the web server layer using PHP and MySQL DB!

Other Projects in parspack:

- I developed a simple chat room using Socket.io with Node.js
- I researched a simple 2-step authentication with Java and Node.js
- I deployed a simple Telegram bot for a payment task using Node.js and Telebot!
- I worked on Microsip client source code as they wanted to add some features like contact list using C++ (MFC)

UE4 3D VR Game Prototypes (Tehran, Iran, My Prototypes) – **UE4 Blueprint Developer/Blender3D Modelling**
April 2016 – September 2017

- **Hunting Ducks Game Prototype (UE4 3D/VR Game Prototype)** Developed a 3D VR game demo using Unreal Engine 4, Blueprint, on Samsung Gear VR (the nostalgic micro game with new Graphics)
- **Multi Player Game Prototype (UE4 3D Game Prototype)** Implementing local multiplayer game prototype on Windows/Android via Wi-Fi-Direct having in-app purchases using UE4 with Blueprint and JNI

Bachelor's Final Project at Sadra University (AR Project) (Tehran, Iran, Project) – **C#.net & AForge.net**
April 2016 – January 2015

- **Undergraduate final project in sadra university:** Developed an Augmented Reality (AR) application using C# and AForge.net to render 2D virtual images on detected markers. ([Source + build Link](#))

Bachelor's Internship at Sadra University (Tehran, Iran; part-time at Omge.ir) – **Qt/QWidget & UE4 Developer**
July 2014 – January 2015

- Implemented client-server socket communication using Qt.
- Generated Android builds using Adobe Flash AS3.
- Configured Unreal Engine 4 C++ projects within Qt Creator.
- Integrated OpenCV with Qt via CMake to capture camera feeds and implement real-time face detection, rendering bounding boxes around detected faces.
- Packaged and deployed applications for Android using Unreal Engine 4.
- Developed a graphical Timeline UI project using QML.

Omge (Tehran, Iran, OnSite, Parttime) – **C++ /Qt Widget developer**
July 2014 - January 2015

- **Development of a content creator (desktop app) Using Qt and C++**
The goal was to create multimedia content to be used on tablets of a travel agency
- **Development of a simple paint application** Using Qt, and C++ for designing and saving graphical items
- **Extending the functionalities of the source code of a previously developed simulator project**
In addition to fully understanding other people's source code, I designed its use-case model documentation then I added some features in it!
- Testing and analysis of Omge Video Wall application
- Development of an application for connecting to remote devices through the serial port Using C# and wpf

Viratech Sharif (Tehran, Iran, OnSite, Parttime) – **C++ Developer**
April 2014 - July 2014

Basic introduction on Linux, Git, GCC C++11, Boost, Pcap, Wireshark, Libpcap, Winpcap, Pf-ring, SCTP protocol, Threads, Thread Synchronization (Mutex) then developed some network communication tools on Ubuntu, including:

- **Running SCTP socket connection** Using GCC C++11 on Ubuntu.
- **A Blocking Queue upon a PCAP application** Using GCC C++11 and boost libraries.

2 Presentation Apps (Tehran, Iran, Project) – **Flash AS3/Adobe Air Developer**
October 2012 - May 2013

2 modern presentation apps for my university lectures instead of using power-point: Using Flash AS3 + adobe air ([Link](#) | [Link](#))

Softroid (Tehran, Iran, Project) – **Flash AS3 Developer**
May 2012 - July 2012

The autorun application of an assistant application for android apk apps: Using Flash + AS3 ([Link](#))

Ramze Ghadir (Tehran, Iran, Project) – **Flash AS3 Developer**
September 2011 - November 2011

Pardazesh Ghoosar Fajr (Ramze Ghadir): Software for uploading user-designed photos to the company's website to make them participate in a contest Using Flash + AS3

King Parand (Tehran, Iran, Project) – **Flash AS3 Developer**

July 2011 - September 2011

The autorun application of an assistant application: Using Flash + AS3 ([Link](#))

Dynamic Virtual Community (LRN.IR) (Tehran, Iran, OnSite, Fulltime) – **Flash AS3 Developer, 3DMax and photoshop artist**

October 2010 - November 2013

Designed and developed several e-learning applications, including:

- **Developed the first 3D Peyk Nowruzi app** using Adobe Flash, AS3, and Alternativa3D. The app served as an interactive homework assignment for students during the Nowruz (Iranian New Year) holidays. It won several awards, including 1st Place in the e-learning media category at the "Digital Child" exhibition.
- **Developed a desktop e-learning application (Taam)** using Adobe Flash and AS3. It featured a wide variety of games, educational content, and quizzes for elementary school students, designed to make learning enjoyable (edutainment).
- **Developed an educational content creator tool (Tama)** using Adobe Flash and AS3. The platform enabled teachers to export SWF quiz files and allowed students to send their scores directly to the company's server. I personally designed all the templates, educational materials, and interactive puzzles, while my colleagues collaborated on the development of the main application.
- **Developed several applications for packaging e-learning content** using Adobe Flash and AS3. These tools allowed teachers to package and embed their created educational content into standalone files for easy distribution to students. ([Link](#))

BlueRoom 3d Packaging Demos (Tehran, Iran, Project) – **Flash AS3 Developer/3DMax , Photoshop Artist**

July 2010 - October 2010

- **Some 3d demos of designed packagings of Blueroom company:** Using Flash AS3 + Alternativa3D ([Link](#))

Unity3d Project Collection (Tehran, Iran, Personal) – **Unity3D/C#/JS**

May 2010 – September 2011

- **Translating the Unity3D Essentials book and learning Unity3D along with doing several test projects** such as a 3D island, a room project with changing wall materials, a snowy landscape project with a hut, a simple cat litter box game, and ... also using these experiences in Pars Pack company on several purchased sources ([Sources + Exports Link](#))

Simia Studios (Tehran, Iran, OnSite, Fulltime) – **Flash AS3 Developer, 3DMax Artist**

September 2009 - March 2010

AbmisPars 2d flash website(abmispars.com): using adobe flash and AS3

Lacsim 3d flash website: using adobe flash and AS3 and away3d libraries

Conceptualized, designed, and modeled exhibition stands for Poliran Company: using 3dmax

([Simia Studios Link](#))

Shobeir (Tehran, Iran, OnSite, Fulltime) – **Flash AS3 Developer, Photoshop Artist**

May 2008 – August 2009

Company's website flash templates: using adobe flash and AS3

Interactive advertisement and presentation application: featuring custom Flash content, using Adobe Flash and AS3!

2 graphical billboards: using adobe photoshop ([Shobeir Full Link](#))

EDUCATION

• Sadra Institute of Higher Education, Tehran, Iran – Bachelor's Degree (Software Engineering)

September 2012 – May 2015

We successfully held four classroom conferences on various topics. To support these events, I designed and developed two custom presentation applications as alternatives to PowerPoint (Using AS3 + Adobe Air), which were well received by our professors.

I proposed using stack-based approaches as an alternative to recursive functions in algorithm design to improve performance, which was appreciated and encouraged by my professor.

I also collaborated with Professor Khorsand on organizing, integrating, and enhancing the understanding of advanced algorithm lecture materials.

Additional Academic Activities (Associate & Bachelor's Degrees in Software Engineering):

- Co-developed a Tehran Stock Exchange Simulator as a 3-person team project for the Software Engineering Lab course, gaining practical experience with Entity Framework.
- Authored and presented a research paper on Big Data and NoSQL technologies for the Database Systems course under the supervision of Prof. Kaveh Ahmadi.
- Developed a Real Estate Information Management System using SQL and .NET as the capstone project for the Associate's degree (2008).
- Collaborated on a game development project during the summer of 2007 as part of the University's Scientific Core program (Associate's degree).
- Completed specialized coursework in Visual Basic, Object-Oriented Programming (C#), and Web Design through the University Scientific Core program.

Designed an interactive Adobe Flash application to visualize trigonometric curves (Sine, Cosine, Tangent, Cotangent) for the undergraduate Mathematics course. ([Link](#))([Link](#))

• Tahlil Dadeh Academy, Tehran, Iran – Certified in Software Architecture, Microservices, DDD, Saga, CQRS, Clean, Onion, Design Patterns, Solid and ... [Link](#)

December 2023 – June 2024

• In addition, I have completed these self-study courses completely:

Both volumes of the books: Deitel & Deitel, How to Programming C++!

Over than 300 hours of C++ Video tutorials such as: Daniel Gakwaya Udemy C++ Masterclass course

And Udemy LEETCODE In C++ DSA Coding Interview Questions for FAANG 2023 contains 49 interview questions of Tech giant companies like Google, Apple, Microsoft, ...

TECHNICAL SKILLS

C++ 98/11,14,17, 20, Qt, QML, Boost, CMake (in progress for C++ 23, 26, ...), MQL5 (In Meta Trader)

Golang, gRPC(Google Proto Buffer), Node.js (JavaScript), Nginx/Openresty/Lua

Postgres, MySQL, MongoDB, Redis, JSON, XML, Git

Software Architecture, Microservices, Distributed Systems, CQRS, SOA, Event-Driven, Saga pattern, OOP,

Solid Principles, Design Patterns, Clean, Onion, DDD, MVC, MVP, MVVM, UML

Python (Jupyter), (AI is my next target)

Linux (Ubuntu Client/Server), (Docker in Progress)

Nginx, OpenResty, Lua

Others (Scrum, Clean Code, Flash, AS3, HTML , CSS, Photoshop, Figma, UE4 (Blueprint), Unity3d (C#),

Visual Studio C#.net, PHP, Java)

ADDITIONAL (Personal/Other)

- Good collaboration in the team, eager to solve problems and help others, eager to learn
- Teaching Programming in public social media back in 2009 [Link](#) | [Link](#)
- To view books, educational materials, and publications, please visit my website blog: [link](#)
- Interests: Charity, AI, Games, Learning, Teaching, Improvement and Progress,
- Languages: English, Persian

For more information of my experiences, please visit my [Website](#) or [LinkedIn](#) account.