Curriculum Vitae

Kamran Amini

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Contents

1 Overall Information

1.1 Personal Information

Name: Kamran
Family: Amini
Birth date: 1987 Apr 25
Birth place: Tehran, Tehran, Iran
Nationality: Iranian
Current living place: Tehran, Tehran, Iran

1.2 Contact Information

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Sourceforge Address: `https://sourceforge.net/u/kamranamini/profile/` **GitHub Address**:   `https://github.com/kamcpp`

1.3 Last Employment

Organization: Mojtama E Fanni E Tehran (Tehran Institute of Technology), Vanak delegacy
Webstie: `http://www.mftvanak.com`
Roles:
    Director of Web and Development Department
    Software Architect, Software Developer
    Instructor and Teacher
Since: 2011 December
Working experience: About 7 years
Recent worked technologies: Java SE, Java EE Specs and Implementations, Spring MVC, Spring Security, Spring WS, PostgreSQL, Ubuntu Linux, Eclipse, IntelliJ IDEA, Shell Scripting, C/C++, Microsoft Visual C#.NET 2012 (.NET Framework 4.5)

1.4 Desired Employment as Software Architect or Developer

Desired working fields: Network Programming, Security Implementation and Programming, Cryptography, Algorithms, Studying and implementation mathematical aspects of algorithms and cryptography algorithms, Network traffic analysis, Information analysis, Kernel Module Development, Unix and Linux Kernel Development, Driver Development
Desired technologies: C/C++ and Java in Linux environments, Kernel Development using C
Roles: Software architect, Software developer, Software designer, Instructor

Desired salary: Hourly and negotiable
Type of cooperation: Hourly
Days of week: Maximum 3 days of week
Monthly working hours: Negotiable
Start date: As soon as possible
Insurance: Yes

1.5 Educational Information

- High school Diploma in Mathematical Sciences, Sanie-far High school, Finished at 2005 with GPA 19/20

- Studied Bachelor in Software Engineering, University of Isfahan, started at 2005 September and left at 2008 September with 99 completed course units out of 141 course units and GPA 14.28/20

1.6 Speaking languages

Persian : Native
English : Fluent
French : Intermediate in Reading and Listening, Beginner in Writing and Speaking
Japanese : Lower Intermediate, Studied for JLPT N1 but ceased now
German : Beginner

1.7 Hobbies and Interests

Mathematics Linear and Abstract Algebra, Probability Theory, Information Theory
Philosophy Western Philosophy, Socilogy, Economics, Politics and Humanities
Physics Quantum Physics, Quantum Mechanics, Particle Physics, Relativity, Theory of Everything, Photonics
Cryptography Information Security, Network Security, Security Algorithms, Quantum Information Theory, Quantum Key Distribution, Quantum Cryptography
Telecommunications Modulation, Multiplexing, Codes, Telecommunication circuits, Photonics and optical fibers, IEEE 802.3 Protocols, Information Theory, Coding Theory, Computer Networks, etc
Music and musicology Classic, Rock, Metal, etc

2 Scientific Career

2.1 Interests

- Algorithms, Information Theory, Cryptography, Quantum Information Theory, Quantum Cryptography

2.2 Memberships

- 2012 May, Member of Technical Team, CTF Competitions, Iran's Second National Hacking Contest, Sharif University of Technology. Designer and Auditor of Java Secure Coding Question

- 2013 Feb, Member of Technical Team, CTF Competitions, Iran's Third National Hacking Contest, Sharif University of Technology. Designer and Auditor of C++ Secure Coding Question

2.3 Co-author

- 2007 Co-author for Master Thesis "Pattern Recognition using Feature Extraction for R6 robots.", Islamic Azad University, Science and Research

- 2010 Co-author for Master Thesis "Author Verification using Letter Features in Persian Alphabet", Tarbiat Modares University

- 2013 Working as co-author and simulator programmer for a Master Thesis about Quantum Key Distribution, Islamic Azad University, Science and Research

2.4 Projects

- InfoSim: A Java based simulation framework which is written for simulating Information Theory problems and scenarios. It allows you to create Channels, Codes, Modulators, Multiplexors all along with telecommunication standards and protocols. It also has a rich and powerful mathematical framework containing packages related to Abstract Algebra, Linear Algebra and Probablities.

3 Professional Open Source Developer

- Sourceforge developer at `https://sourceforge.net/u/kamranamini/profile/`

- GitHub developer at `https://github.com/kamcpp`

- Open Source development tools: SVN, Git, Maven, Gradle, etc

4 Activities as Instructor

4.1 Mojtama E Fanni E Tehran,MFT

- Mojtama E Fanni E Tehran,MFT(2011 to present) at Tehran, Iran

- Algorithms, Object Oriented Paradigm, OOP in C++, C#.NET

- C++ in Linux and Windows

- Java fundamental and Java advanced topics

- JEE architecture and technologies: CDI, Servlets, JDBC, EJB, JCA, JPA, JAX-WS, JAX-WS, etc.

- Web Services (SOAP and RESTful)

- JDBC, JPA and Hibernate, TopLinks.

- JVM Technologies: Groovy, Scala, Naashorn Engine

- Linux Essentials

- Development in Linux

- Microsoft C#.NET(.NET Framework Foundation and Framework Design)

- ASP.NET WebForms and MVC

- Microsoft SQL Server 2008 and 2012(Design, Maintenance and Administration)

- MySQL and PostgreSQL DBMS

- CIW Web Foundations (Network, Design and Develop)

- Web development with PHP

4.2 Novin Parsian Master Educational Institute

- Novin Parsian Master Educational Institute(2009 to 2012) at Tehran, Iran

- Microsoft C#.NET Programming

- Microsoft SQL Server 2005, 2008 Design and Administration

- Oracle 10g Design and Administration

4.3 Padideh Educational Institute

- Padideh Educational Institute(2006 to 2012) at Tehran, Iran

- Software related academic courses e.g Algorithms, Data Structure, Algorithm Design, etc.

- Payam Noor University Master Degree, Database Systems(Based on C.J.Date book)

4.4 Iran Khodro Co.

- SeptaNSF Framework as the Framework Specialist and Architect from Septa Co.

5 Professional Career as Software Developer/Designer

5.1 Mojtama E Fanni E Tehran, Vanak delegacy

- Director of Web and Development department

- Working on an educational system called EduSys

- It was Service Oriented. Service layer had been written using Spring WS framework.

- It was Java based and written using Spring frameworks. Client applications were being developed using C#.NET. They had to use web services to communicate with service layer.

- Another web based interface were also being written. Spring MVC and Spring Security frameworks were used.

- Working with XSD and WSDL files

- Working with SoapUI as an investigator for Soap connections.

- PostgreSQL were used as our database management system.

- Ubuntu Server distribution were used as our server environment.

5.2 SharifCERT (APA Sharif)

NOTICE : Projects and their details are confidential and I can't mention them here. So, a general overview on used technologies will be given.

- SharifCERT(APA Sharif) (2011 December to 2013) at Tehran, Iran

- Network security related applications written using Java, C and C++ under Linux environments

- Using SVN and Git alongside Eclipse IDE for Java development

- Using Test Driven Development technique for application development

- Research and develop about Network Security concerns (L2 and L3)

- Working with algorithms and data structures which are involved in security related topics.

- Malware analysis, Traffic analysis, Attack analysis

- 2012 May, Member of Technical Team, CTF Competitions, Iran's Second National Hacking Contest, Sharif University of Technology. Designer and Auditor for Java Secure Coding Question

- 2013 Feb, Member of Technical Team, CTF Competitions, Iran's Second National Hacking Contest, Sharif University of Technology. Designer and Auditor for C++ Secure Coding Question

5.3 Gostaresh Faryanad Sharif Co. (SEPDCo.)

- Gostaresh Faryanad Sharif Co.; SEPDCo. (2011 October to 2012 June) at Tehran, Iran

- **SEPDCo Gas Network Simulator System**
  A gas network and pipeline designer and simulator application written entirely in C++ using Qt framework. I was developer for the desktop application which was written in C++ and Qt View Framework. I used Qt View Framework classes like QWidget, QMainWindow, QGraphicsScene, QGraphicsView alongside signals and slots with all other needed concepts in Qt. The application had no database and everything was serialized using XML or Binary formatters and written to a file. We were using Microsoft Visual Studio 2008 for developing the project.

5.4   Septa Co.

- Septa Co. (2009 September-2011 August) at Tehran, Iran

- We used Microsoft Visual Studio 2008 as our primary development IDE and Microsoft Visual Source Safe 2005 for our source version control system. Project types were varied from Windows From applications to ASP.NET Web Forms and WCF Services.

- **SeptaNSF; A .NET based Framework**
  This was a .NET based framework implemented for internal usages and later became a product. It also had a code generator which was able to generate Business Logic Layer entities and their adapters. It was entirely written in C#.NET 3.5 and I was one of its developers and designers. I was developer and designer for classes related to WCF services, classes related to Inter-Process Communications like Sockets, Pipes and classes related to mathematical concepts related to cryptography.

- `www.1st.ir` **B2B Portal**
  It was one of the first Iranian Business 2 Business portals. Written in ASP.NET C#.NET 3.5, using a Microsoft SQL Server 2008 R2 database. All parts relating to WCF web services were developed by me. Also, portal integration with other products using web services were mine.

- **PayamGostar Application**
  A business directory desktop application written entirely in C#.NET 3.5 and it was using a Microsoft SQL Server 2008 R2 database. It allowed people to search, save and edit their customers and it had a bank of businesses information called business directory. It was integrated with 1st portal (previous section) and bought application instances had to be activated via portal. It was checking user's activation status using WCF web services over a HTTPS channel. In addition, new information for businesses could be synchronized with `www.1st.ir` portal using WCF web services.

- **Septa Update Center**
  An update/patch system integrated with development procedures to provide updates for company's products. It was entirely written in C#.NET 3.5. An updater service with a desktop updater application were given to clients for updating their product instances. It was fully designed and implemented by me and now it is working as the main update/patch package for Septa Co. products. It is implemented using WCF technology for downloading patches, updates, checking activation and subscription status and deactivating product instances.

- **Septa Automation System**
  It was an internal ASP.NET C#.NET 3.5 website for entrance system, salary calculations, product instances, serial code generation, tracking sold products, etc. It was all implemented by me. It was using ASP.NET membership bundle as its authentication system.

5.5 Shabakeh Pardaz Rayaneh Co.

- Shabakeh Pardaz Rayaneh Co. (2009 June-2009 September) at Isfahan, Iran

- **Isfahan Province Electricity Distribution Center, 121 Call Center**
  This was the same project at previous company, Aramin IT, which was transferred to Shabakeh Pardaz Rayaneh Co. and I moved to new company to continue to work on the project.

- **Recording and Archiving System at Isfahan Central Jails Organization**
  The archiving system was implemented using C#.NET and Microsoft SQL Server 2005. Many database related issues like heavy loads and load balancing, partitioning, indexes, etc were encountered and studied.

5.6 Aramin IT Co.

- Aramin IT Co. (2008 March -2009 June) at Isfahan, Iran

- **Isfahan Province Electricity Distribution Center, 121 Call Center**
  This was a set of projects using Visual C++ and C#.NET which they were responsible for handling calls at Isfahan Electricity Distribution Center. There was a service written in C++ which it had to monitor a Panasonic TD 200 call center. The service was using TAPI API for controlling the call center. Also, there were some desktop applications written in C#.NET which they allowed human agents and managers to monitor, accept, reject and redirect the calls. Database system used for this project was Micrsoft SQL Server 2005.

6 Fields of Expertise

6.1 Source Version Control Systems

- SVN (Command line and GUI interface)

- Git (Command line and GUI interface)

- Microsoft Visual Source Safe 2005

- Microsoft Team Foundation System

6.2 Programming and Scripting Languages

- **C, C++**

  - I've started using C++ since high school in a 2D Soccer Simulation Robocup team.
  - I've worked with `gcc` and `g++` in Unix-like operating systems like Linux Fedora, Linux Ubuntu and FreeBSD.
  - I've written some projects with C++ using MS Visual Studio 6.0 and MS Visual Studio 2008 in Windows environments. I've used C++ CLI too but I prefer standard C++.

- I've worked with `boost` and `Qt` frameworks alongside `STL` in various projects.
- Also I have done some windows desktop applications using Visual C++ 6.0 and above.
- C++ secure coding according to CERT C++ Secure Coding.
- I've taught C++ programming for more than 4 years

- **Java**

  - It is since 2011 which I've started Java seriously as a major part of my career. I was familiar with Java since high school but the professional career has been started since I joined SharifCERT.

  - Most of my projects were written using J2SE framework and with help of other frameworks like Apache Common, Log4J, etc. I've recently gained valuable experiences about J2EE development. I've been using JBoss and Tomcat as my J2EE Application Servers. I've also implemented applications using HornetQ as their underlying messaging system.

  - Currently, studying and using Spring framework and its Web MVC framework as my main method for web development using Java. Also, as a security solution I'm studying and using Spring Security framework for securing my web and desktop applications.

  - I really like the idea of `Dependency Injection` and I use it a lot while I'm designing an application. It has influenced my way of thinking and I use it even I'm using other languages like C++ for development.

  - Recently I'm using Test Driven Development paradigm. I've found it very useful while using Agile methodology. I use JUnit framework for implementing test units.

  - I use Hibernate (JPA annotation based and XML based configurations) as my persistence framework.

  - I use Maven build system as my primary solution for compiling and publishing java applications. I've also worked with Ant build system. I've used even `Makefiles` to compile Java applications.

  - I use Apache Tiles framework as my View framework while using Spring or other Web MVC frameworks.

  - A bit experience with Seam framework.

  - I've used `jnetpcap` library as the only available Java solution for capturing and analyzing individual network packets.

  - I've used Java NIO as a solution for implementing massive IO operations. I've used it to open multiple TCP and UDP ports in not blocking mode.

  - Most of my projects have been written in Ubuntu and Mint using Eclipse IDE (Kepler edition).

  - Most of the projects were server side and they had to be written very carefully. They had to work under heavy loads, they had to respond to many requests in a little fraction of time and most of them were 24/7 services.

  - I've worked with `java` and `javac` as Java command line launcher and compiler.

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– Java secure coding according to The CERT Oracle Secure Coding for Java is also part of my career.

– I've used Spring-WS for creating web services.

- **C#.NET**

  – I've written several applications using C#.NET 3.5 both Windows Form and Web applications.

  – I've developed various projects with ASP.NET Web Forms.

  – I've written some projects using C#.NET 4 but I'm more experienced in C#.NET 3.5.

  – I've taught C#.NET for 2 years based on MCTS Standard.

- **Perl**

  – It is since 2011 which I have started programming with Perl. I've worked with versions 5.8 and 5.14.

  – I've used Perl to write an Apache HTTP module. Then it became a web MVC framework called OpenPerl::MVC. It is not completed yet but once it gets ready I'm going to publish it on CPAN archive.

- **PHP**

  – I've done some websites using PHP but all of them were for testing purposes. Honestly, this was my first server-side programming language and I changed it to Perl or Java on Linux environments. I've used PHP alongside with MySQL as its database system.

- **Unix/Linux Shell Scripting**

  – I do all of my OS related jobs using shell scripts under Linux environments. Installers, Package preparations, Folder layout makings and many other tasks can be done using shell scripts. I use them heavily while I'm working on a project. They are great alongside Perl scripts and give you a lot of power to automate and centralize system routines.

6.3 Operating Systems

- **Ubuntu,Debian**

  – Version 10.x and 11.x

  – Programming with C, C++ and Java

  – Shell Programming

  – Socket programming

  – Kernel module programming

  – Character devices programming

  – 24/7 active daemons using Java and C++

- **CentOS,Fedora**

  – Version 5.x and 6.x

  – Programming with C++ and Perl

  – Shell Programming

  – Socket programming

  – Web applications using Perl

- **FreeBSD**

  – Version 8.4

  – Programming with C

  – Kernel module programming

  – Character devices programming

  – Socket programming

- **Microsoft Windows**

  – XP, Vista and 7

  – Programming with C++ and C#.NET

  – Socket Programming

6.4 Database Systems

- **PostgreSQL**

  – PostgresSQL 8.4 under Ubuntu and Debian environments

  – Configuring database engine using configuration files like pg_hba.conf, etc.

  – Used as database systems with Hibernate framework in Java projects.

  – Used `psql` client admin tool alongside shell scripts to automate database installation and import steps.

- **Microsoft SQL Server**

  – 2005 and 2008 Versions

  – Database design and Implementation

  – I've taught Microsoft SQL Server 2008 Design and Administration for 2 years based on MCTS Standard.

- **MongoDB**

  – Version 2.0.5

  – Recently I've started a project which uses MongoDB as its noSQL and document oriented database management system.

  – I've used MongoDB C# wrapper which allows you to use MongoDB in C#.NET projects. Also have used its C++ driver and wrapper which is MongoDB's first default wrapper.

- **Oracle**

  - Oracle 10g and 11g
  - Database design
  - A little experience about administration. I've taught some courses related to Oracle Database Design and Administration.

6.5 APIs and Frameworks

- **Telephony API**

  - TAPI 2.0 and TAPI 3.0
  - Used with C, C++ and C#.NET
  - Programming with WAPI (Wave API) alongside TAPI for voice recording and IVR(Interactive Voice Response) systems
  - Familiar with JTAPI (Java Telephony API)

- **Packet Capturing**

  - libpcap with C++ in Ubuntu distribution
  - JNetPcap, a Java wrapper for libpcap, in Ubuntu distribution
  - Used in applications for Network Traffic and Packet Flow analysis

- **Qt C++ Framework**

  - Used Qt data structural and common classes like `QList`, `QMap`, etc
  - Socket programming
  - GUI programming, worked with `QWidget` objects, Signals, Slots, etc

- **Boost C++ Framework**

  - Familiar with data structures and common classes

- **O/R Mappers**

  - LLBLGen
  - Microsoft Entity Framework
  - Hibernate for Java (Used with PostgreSQL and MySQL)

- **Windows Communication Foundation(WCF)**

  - Transport and Message security models
  - IIS Hosting and Windows Service Hosting
  - Basic and WS bindings, Custom bindings

- **Microsoft Hooking framework**

  - Dll injection
  - Writing hooks for monitoring and redirecting Windows Calls.

7 Worked Projects

This is the table of projects which I've done or been a part of it in my professional career. They can be defined and started whether by companies or by myself. Each project has an index which can be used for reading below table.

Table 1: Worked Projects

Project Index	Languages	DBMS	Roles	Libraries
1	C++,C#.NET	SQL Server	Developer, Designer	TAPI 2.0
2	C#.NET	SQL Server	Developer, Designer	-
3	C#.NET	-	Developer, Designer	
4	C#.NET	SQL Server	Developer	WCF Services, ASP.NET
5	C#.NET	SQL Server	Developer, Designer	WCF Services, Interop
6	C#.NET	SQL Server	Developer, Designer	WCF Services, Compression
7	C#.NET	SQL Server	Developer, Designer	ASP.NET
8	C++	-	Developer, Designer	Qt Framework
9	C++	-	Idea Owner, Developer and Designer	
10	Perl	-	Idea Owner, Developer and Designer	
11	C++	MongoDB	Idea Owner, Developer and Designer	Qt, Boost
12	Java,C,C++	PostgreSQL	Developer, Designer	libpcap, J2EE, Qt

1: Isfahan Province Electricity Distribution Center, 121 Call Center

2: Recording and Archiving System at Isfahan Central Jails Organization

3: SeptaNSF; A .NET based Framework

4: 1st.ir B2B Portal

5: PayamGostar Application

6: Septa Update Center

7: Septa Automation System

8: SEPDCo Gas Network Simulator System

9: ImgProcLib; A C++ Image Processing Library

10: OpenPerl::MVC web framework

11: MafiaClub; An online multiplayer game

12: SharifCERT projects