Kamran Amini
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IN SUMMARY

As a highly motivated and senior software architect, while having spent more than 12 years in developing and architecting enterprise and distributed software for international companies, my skills cover a wide variety of development tools and platforms. The enterprise projects which I've been involved include a wide range of technologies, patterns, and concepts based on embedded C, C++, Java, Scala, Python, relational and NoSQL databases, etc. As a senior software enigneer, I have strong hands on writing codes with various programming languages including C, C++, Java, Scala, Python, and bash scripting while having best practices and enterprise patterns in mind. As a distributed system engineer, I've always encountered with strict and tough functional and non-functional requirements in which security, performance, data consistency, distribution of resources, fault tolerance, high availability, authentication, and authorization have been among them. Recently, I've been working as an expert software engineer at TomTom as a part of Search team in order to make it better and give the customers a better search experience.

EMPLOYMENT

TomTom
Netherlands, Amsterdam
September 2017 - December 2018
Expert Software Engineer
- *As an Expert Software Engineer*: I was part of the Search team inside the Navigation PU. We were working on different search engines utilizing different kinds of maps, exposing search and POI information services as some RESTful endpoints (NavKit Worker) hosted on AWS/Azure cloud platforms, and as an embedded native engine (NavKit) for QNX, Andorid and iOS devices.

- *Development Environment*: Ubuntu, Mac OS, and QNX as operating systems - Perforce and git as SMC - Test development using JUnit and Google Test mixed with bash scripts to run tests- Jira, Fisheye, Confluence as scrum tools - C++ 11, Java, Scala, and Python as programming languages - AWS and Azure as clouding platforms - Spring Web and Security for cloud based NavKit Worker - Jenkins and QuickBuild as CI machinery

Modis
Netherlands, Amsterdam
September 2017 - Present
Senior Software Engineer/Architect Consultant
- TomTom has been the first client which I've been consulting them onsite as an Expert Software Engineer for 1 year and 4 months.

Jeppesen Systems (Boeing)
Sweden, Gothenburg
February 2017 - August 2017
Expert Software Engineer
- *As a Senior Software Engineer*: I was part of the Manpower team working on an application mainly used to optimize the resources, crews, training sessions, and budgets for an airline.

- *Development Environment*: RedHat as the operating system - Mercurial and git as SCM - Test development using Google Tests, Python unitests - Jira, Fisheye, and Conluence as scrum tools - C++11, Python, and C#.NET as programming languages - Jenkins as CI machinery

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Telescope Services

Sweden, Lund
January 2017 - August 2017
Senior Software Engineer/Architect

- Jeppesen Systems has been the first client which I've been consulting them onsite as a Senior Software Engineer for 6 months and then I moved to Netherlands.

Sahab Pardaz Co.

Iran, Tehran
July 2016 - February 2017
Deep Learning Research Developer, Enterprise Software Architect, Project Manager

- *Development Environment*: Debian based Linux distributions, Git, Redmine Issue Tracker, Test Driven Development, Free IDE, Agile based methodology, *gcc*, *g++* and *OpenJDK 8* compilers, *C++11* for back-end services, etc.

- *As a Deep Learning Research Developer*: Cooperation with researchers and other developers on design of deep models in order to overcome a specific problem; Development of designed Machine Learning and Deep models in various programming languages like C, C++ and Python; Gathering, preparation and refining train data and feeding to the model; Evaluation and updating model according to new train data; Measurement of different factors of a learning model like error rate in order to study model behavior; Working with various frameworks like TensorFlow, Torch, Theano, OpenCV, etc; Doing GPU and CPU computation using CUDA, Theano, TensorFlow, etc

- *As an Enterprise Software Architect*: Studying various aspects of a software in order to detect and design core interfaces, business boundaries, contracts and constraints in each subsystem; Use of state-of-the-art architectural patterns and technologies in order to have a modern and working software, Meeting with other architects in order to share knowledge and understandings about a problem and give solutions; Guiding senior developers and managers in order to have a clean and planned implementation

- *As a Project Manager*: Arranging different teams for a project like architects, developers, analysts, designers, testers, etc; Conducting sessions with stack holders and product managers in order to have a better understandings about the software; Preparing time schedules for supervisors; Assigning tasks to different teams; Monitoring and organizing activities from various teams to keep the progress up and running

Adro Co.

Iran, Tehran
June 2016 - February 2017
Senior Software Architect, Senior C++ Engineer

- *Projects*: Real Time Bidding (RTB) Engine serving millions of requests from Supply Side Platforms (SSP) and other RTB Engines.

- *Development Environment*: Ubuntu Server, *g++*, *gdb*, *valgrind* memory profiler, *CMake*, *git*, *TFS*, etc.

- *As a Senior Software Architect*: Providing design and architecture of the RTB engine serving more than 200 million requests (advertisement impressions) per day; Introducing scalability and HA featurs to an existing RTB engine; Conducting architectural sessions in order to provide a fine solution to sudden issues; Guidance through the selection of development and build tools; Providing safe solutions to transactional and financial operations.

- *Technologies*: Asynchronous IO and IO event driven development using *libev* and *libuv* libraries; HAProxy; Linux Virtual Server (LVS); Real Time Kernel; OpenRTB Specification; Multithreading; Redis; Deep Packet Injection; Nginx load balancing; Gatling; *libeio*; *libcares* for Asynchronous DNS Resolving; *systemd* and *journald* services; *libnuma* for Non-Uniform Memory Access; *TCMalloc* for thread wise buffer caching

Noavaran Tejarat Gostar Naeem Co.

Iran, Tehran
April 2015 - October 2016
Chief Technical Officer, Senior Software Architect, Senior C/C++ Developer

- *Development Environment*: Ubuntu Desktop; Ubuntu Server; *git*; Jenkins; Redmine Issue Tracker; Test Driven Development; Free IDE; Agile based methodology; *gcc*, *g++* and *OpenJDK 7* compilers; *C++11* for back-end services; Python 2 and 3; etc.

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- *As a Chief Technical Officer*: Managing and coaching more than 15 software and hardware developers organized in 6 different teams; Strategic decision making for company's technical future; Cooperation with and coaching research teams operating in *Image Processing, Machine Learning, NLP, Security, Hardware, Cryptography, Mathematics* fields; Supervising all data structures and algorithms proposed by research team and coaching developers and architects through implementation phase; Conducting sessions with academic people and using the top most national knowledge to supply the research teams

- *As a Senior Software Architect*: Service Oriented Architecture; Micro Service Architecture; C/C++ based Architecture; Java SE/EE based Architecture; Distributed Architecture; Clouding strategies like SaaS, IaaS, PaaS; High performance message queues; Micro-batching and stream processing; Durable queues; Supervising testers and designed test scenarios; etc

- *Technologies*: PKI; Design of CA Infrastructure; ICAO CSCA and DS Arhcitecture; NFC tags and chips; NFC readers and writers; ICAO Documents 9303; Biometric algorithms and engines; Architecting ABIS; Distributed processing and data storage like Hadoop, XtreemFS, Gluster, etc; Architecting Network Analysis engines; Huge data structures; In memory data structures; Query languages using Yacc and Lex; Apache Hadoop Family; Apache Cassandra; Redis; Apache ZooKeeper; MemCached; Bloom Filters; Apache Kafka; Apache Storm; Apache Spark; Apache Ignite; Relational PostgreSQL; Object Oriented PostgreSQL; PL/PgSQL; Hottentot RPC Framework; PKCS12; PKCS11 API; PKCS10; PKCS7; etc

- *Hardware*: Security Tokens and Cryptographic Chips; NFC reader and writer devcies; Embedded Programming; Raspberry Pi 2; Arduino Boards; ARM MCUs; etc

- *Projects*: Kawthar Geographically Distributed ePassport Issuance System; NETWE Network Analysis Engine; Distributed Crawler Engine; Consular Portal for Iran's Ministry of Foreign Affairs; ABIS Engine; Biometric Data Enrolment Applications; Query language for NETWE using Yacc/Lex

Sahab Pardaz Co.
Iran, Tehran
February 2015 - June 2015
Distributed Systems Architect, Senior Java SE/EE Engineer, C++ Engineer

- *Development Environment*: Ubuntu Desktop; Ubuntu Server; *git* and Mercurial; Jenkins; Gerrit; Redmine Issue Tracker; Test Driven Development; Free IDE; Scrum methodology; *gcc, g++* and *OpenJDK 7* compilers; etc.

- *As a Software Architect*: Focusing on scalable systems with high throughputs and balancing the load among many nodes; Participation in architecting sessions; Supervising C/C++ and Java developers; Designing tests and test scenarios; Maven-based versioning system for writing embedded stubs for facilitate test scenarios

- *Technologies*: Apache Hadoop Family; Bloom Filters; Apache ZooKeeper; Apache Cassandra; Redis; MemCached; Apache Kafka; Apache Storm; Apache Spark; Apache Ignite; RPC solutions like GRPC (Google RPC); ZeroIce; etc

Sharif CERT Center
Iran, Tehran
December 2011 - June 2013
Java SE/EE Engineer
C/C++ Engineer

- *Development environment*: Ubuntu Desktop, Ubuntu Server, SVN, Git, Eclipse IDE, Agile based methodology, *gcc, g++ and OpenJDK 6* compilers, Test Driven Development, etc.

- *As an developer/architect*: Research and develop on Network Security concerns (L2 and L3), Working with algorithms and data structures which they are involved in security related topics, Malware analysis, Traffic analysis, Attack analysis

- *Technologies*: C/C++, Java 6, PostgreSQL, MySQL, JNetPcap, tcpdump, tcpreplay, etc

- 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

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FOREIGN LANGUAGES

Persian(**Native**), English(**Fluent**), French(**Intermediate**), Dutch(**Intermediate**)

EDUCATION

- 2017 - Present
  The Open University
  Bachelor of Science in Physics (Astronomy and Planetary Science)

- 2004 - 2008
  University of Isfahan
  Isfahan, Iran
  Bachelor of Software Engineering

SCIENTIFIC AND PROFESSIONAL SKILLS

- *Computer Science*: Data Structures, Algorithm Design, Automata Theory, Turing Machine and Computation Theory, Linear and Abstract Algebra, Information Theory, Cryptography, Quantum Cryptography and Key Distribution, Quantum Computation, Public Key Infrastructure, Artificial Intelligence and Machine Learning, Relational Databases, Graph Databases, Key-Value Databases, File Systems, Operating Systems, Kernel Architecture, Logical Circuits, Digital Circuits, Analogue Circuits, etc

- *Data Science and Machine Learning*: Reinforcement Learning, Classification and Clustering techniques, Deep Learning, Neural Networks, CNNs, RNNs, Training Models, Learning Theory, etc

- *Programming Languages*: C, Embedded C (ARM, AVR), C++, Java, Scala, Python

- *Databases*: PostgreSQL (Relational and OO), Oracle RDBMS, MySQL, MongoDB, Apache Cassandra, Neo4j, Redis, etc

- *Operating Systems*: Linux (Ubuntu, Debian, CentOS), Mac OS, FreeBSD

- *Source Version Controls*: Git, Perforce, Subversion, Mercurial

INTERESTED IN

- *Physics and Astronomty*: Consmology, Astronomy, Quantum Physics, Quantum Mechanics, Particle Physics, Special and General Relativity, Theory of Everything, Photonics.

- *Mathematics*: Linear and Abstract Algebra, Probability Theory, Information Theory

- *Cryptography*: Information Security, Network Security, Security Algorithms, Quantum Information Theory, Quantum Key Distribution, Quantum Cryptography

- *Philosophy*: Western Philosophy, Sociology, Economics, Politics and Humanities

- *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, Extreme Metal, Alternative Metal, Progressive Metal, Alternative Rock, etc