

Kamran Amini
Expert Software Engineer at TomTom

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SUMMARY

As a highly energetic and motivated expert software engineer with more than 10 years of technical experience 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 part of, include a wide range of technologies, patterns, and concepts based on embedded C, C++, Java, Scala, and Python. As a senior software engineer, I have strong hands on writing codes with various programming languages including C, C++, Java, Scala, and Python as well as Bash scripting while having the best design practices in mind. As a distributed system engineer, I've always encountered strict and tough functional and non-functional requirements like security, performance, data consistency, fault tolerance, and high availability which have always made me thrive and become even more experienced.

TECHNICAL SKILLS

- **Expert Level Prog. Langs:** C++11 (g++, clang++) - C11 (gcc, clang) - Java - Python
- **Some-Hands-On Prog. Langs:** Scala - x86-64 Assembly - Erlang
- **Debugging:** gdb - Valgrind (memcheck, massif, callgrind) - Clang ASAN & TSAN - JConsole - PDB - objdump
- **Paradigms:** Procedural - OOP - Functional - Aspect Oriented
- **Concurrency:** Multithreading - Multiprocessing - Event Driven Dev. (libuv, Java NIO) - Actor Model (akka) - Process and thread synchronization (mutexes, semaphores, condition variables) - shared memory - pipes
- **Data Stores:** PostgreSQL - MySQL - MongoDB - Redis - Cassandra
- **Computer Science:** Balanced Trees (AVL, B-Tree, RB) - Graphs - Index Trees - Tries - Sort & Search Algs - Compression Algs - Bit Matching Algs
- **Distributed and Enterprise Systems:** MQM - Microservices - DFS (Hadoop, Gluster) - Dist. Processing (Ignite, MapReduce, akka) - Dist. Caching - Dist. Key-Value Stores - Streaming - Microbatching - Event Sourcing - FT and HA strategies - DMQ (Kafka)
- **Serialization & RPC:** Protobuf - gRPC - ZeroMQ - Thrift - JSON over REST - Java RMI - XMLRPC
- **Specifications:** SUS - POSIX - PKCS standards - JavaEE (JPA, JSM, EJB, JavaServlets, JAX-WS, JAX-RS, etc) - RFCs (ASN.1, IP, TCP, UDP, DNS, HTTP, CMS, etc)
- **Cryptography:** OpenSSL - Symmetric Algs (DES, 3DES, AES) - Asymmetric Algs (RSA, ECC, DH) - SSL - PKI (CA, Digital Signature, PKCS certs, HSMs and Crypto. Tokens) - Hash Algs - MAC Algs - Error Detection (Crypto. Hashes)
- **Kernel Dev.:** Linux Modules - Linux SysCalls - FreeBSD Modules
- **Machine Learning:** CUDA Dev. - Tensorflow (C++ & Python) - DSP - OpenCV - Supervised & unsupervised learning - Reinforced Learning - Deep Learning - Locality Sensitive Hashes
- **Computer Networks:** OSI & Internet Protocol Suite, Packet Switching, Error Detection & Correction (Checksum, CRC, ARQ, FEC), L3 protocols (ICMP, IP) - L4 protocols (UDP, TCP) - Socket Programming - L3 programming (libpcap, jnetpcap) - Wireshark analysis - Penetration Testing - tcpdump
- **SCMs:** Git - Perforce - Mercurial - Subversion - TFS
- **Build Systems:** CMake - Ninja - Gradle - Maven - sbt
- **IDEs:** Vim as IDE (♥ ☺) - IntelliJ IDEA - Visual Studio
- **DevOps Related:** Bash Scripting - Perl - Python - KVM - Docker - Jenkins - Zabbix
- **Operating Systems:** Linux (Ubuntu, Red Hat) - UNIX like OSs (Mac OS, FreeBSD, QNX) - Windows
- **CI:** Jenkins - QuickBuild - Travis CI
- **Documentation:** Markdown - ~~LaTeX~~ - Ascii Doc - Doxygen
- **Scrum:** JIRA - Fisheye - Confluence - Bitbucket - Stash - Code Reviews - Pull Requests - Release Chain

CAREER

★ TomTom

Expert Software Engineer (Sept. 2017 - Dec. 2018)

Netherlands, Amsterdam

- NavKit Free Text Search Engine, Navkit Worker REST Services, POI Info Services
- C++11 (g++, clang) - gdb - Valgrind - Clang ASAN & TSAN - STL & Boost - Google Test - Protobuf - Java SE - JUnit - Spring Web - JAXB - JSON over RESTful API - Thrift - Python - Jenkins - QuickBuild - Docker- JIRA - Fisheye - Confluence - Bitbucket Stash - AWS/Azure based cloud

★ Jeppesen Systems (Boeing)

Expert Software Engineer (Feb. 2017 - Aug. 2017)

Sweden, Gothenburg

- Manpower Application
- C++ (g++) - Python - C#.NET - gdb - Valgrind (callgrind, massif) - PDB - STL & Boost - Google Test - XMLRPC - Jenkins - JIRA - Fisheye - Confluence

★ Sahab Pardaz Co.

Deep Learning Research Developer, Enterprise Software Architect (Jul. 2016 - Feb. 2017)

Distributed Systems Architect, Senior Software Engineer (Feb. 2015 - Jun. 2015)

Iran, Tehran

- DL based Network Traffic Analyzer - Network Anomaly Detector

- C++ (g++) - C (gcc, CUDA) - Java SE - Python - gdb - Valgrind - STL & Boost - Google Test - protobuf - gRPC - Tensorflow - Jenkins

- Zabbix - Redmine - GitLab - Github

★ Adro Co.

Senior Software Architect, Principal C++ Engineer (Jun. 2016 - Feb. 2017)

Iran, Tehran

- Real Time Bidding Engine

- C++ (g++) - Python - gdb - Valgrind - STL & Boost - libuv - Google Test - protobuf - Jenkins - Travis CI - Docker - JIRA - Fisheye

★ Noavaran Tejarat Gostar Naeem Co.

Chief Technical Officer, Chief Software Architect (Apr. 2015 - Oct. 2016)

Iran, Tehran

- ePassport Issuance System

- C (gcc) - C++ (g++) - Java - Python - gdb - Valgrind - STL & Boost - wxWidgets - Qt - Google Test - Jenkins - Docker - vSphere -

Gluster - Cassandra - Redmine - GitLab

- OpenSSL - PKCS (1, 7, 10, 12) - ICAO MRTD standards

★ Sharif CERT Center

Java SE/EE Engineer, C/C++ Engineer (Dec. 2011 - Jun. 2013)

Iran, Tehran

- Botnet Detection System - Sinkhole - DDNS as a FreeBSD module

- C++ (g++) - Java SE - Perl - gdb - JConsole - Valgrind - STL & Boost - Swing - Redmine

NOTABLE OPEN SOURCE PROJECTS

- **Hottentot**: A light-weight serialization and RPC framework for C++ and Java (github.com/labcrypto/hottentot)
- **Fence**: A durable queue with a centralized master node with C++, Java, and Python clients (github.com/labcrypto/fence)
- **Avicenna**: A light-weight Dependency Injector for Java (github.com/kamcpp/avicenna)

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

INTERESTS

- **Physics and Astronomy**: Cosmology, 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