Kamran Amini
Senior Software Engineer at **ActiveVideo BV**
High Skilled Migrant in Netherlands

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SUMMARY

With over 14 years of professional experience in various fields of software development, I've dedicated my past few years to creating cloud-based distributed systems. While always been a key contributor to the overall architecture and design, considering requirements like security, availability, robustness, fault tolerance, etc, I have always had a strong will to be part of the development team and code some of the critical key components. Hence, backed by my academic studies in computer science, I have had the pleasure of learning by coding and seeing serious corner cases and bugs in action. I have used many programming languages, but system languages like C, C++, Golang, and Rust have always been amongst the most loved ones. As part of my career, I have always tried to keep an eye on the DevOps side of things, therefore, I have gained invaluable experience in scripting and configuring Bash, Docker, Kubernetes, Helm, AWS resources, etc. I do love start-ups and the mindset around raising one, so Javascript and NodeJS technology is among the game-changers in that field and I've had the chance to use it extensively in different projects. Moreover, during the past few years, I have gathered a deep understanding of distributed ledgers and blockchains, so I have worked with various blockchain startups to develop their on-chain complex financial logic (smart contracts) using Solidity.

TECHNICAL SKILLS

- **Expert Level PLs:** C++14 (g++, clang++) - C11 (gcc, clang) - Java (openJDK, Oracle) - Python
- **Medium Level PLs:** Go - Scala - Erlang - x86-64 Assembly
- **Web:** HTTP - HTTPS - DNS - Apache httpd - NGINX - CGI (PHP, Python, Perl) - Java Servlets (Wildfly, Jetty, Tomcat, Glassfish) - Event Loops (libuv, Java NIO)- Spring MVC and Spring Boot - Akka HTTP
- **Concurrency:** Multithreading - Multiprocessing - Event Driven Dev. (libuv, Java NIO, Netty) - Actor Model (akka) - Process and thread synchronization (mutexes, semaphores, condition variables, spin locks, re-entrant locks) - shared memory - pipes
- **Debugging:** gdb - Valgrind (memcheck, massif, callgrind, helgrind, cachegrind) - Clang ASAN & TSAN - JConsole - PDB - objdump, nm, readelf
- **Data Stores:** PostgreSQL - MySQL - MongoDB - Memcached - Redis - Zookeeper - HBase - Cassandra
- **SCMs:** Git - Perforce - Mercurial - Subversion - TFS
- **Build Systems:** Makefile - CMake - Ninja - Maven - Bazel - sbt
- **DevOps Skills:** Bash Scripting - Perl - Python - Virtualization - Docker - Jenkins - Zabbix - Netdata
- **Distributed/Enterprise Systems:** MQM - Microservices - DFS (HDFS, Luster, Gluster) - Dist. Processing (Ignite, MapReduce) - Dist. Caching - Dist. Key-Value Stores - Dist. Configuration - Streaming - Micro-batching - CQRS - Event Sourcing - FT and HA - DMQ (Kafka)
- **Computer Science:** Balanced Trees (AVL, B-Tree, RB) - Graphs - Index Trees - Tries - Sort & Search Algs - Compression Algs - Bit Matching Algs - Time and Space complexities
- **Serialization & RPC:** Protobuf - gRPC - ZeroMQ - Thrift - JSON over REST - SOAP - Java RMI - XMLRPC
- **Standards:** SUS and POSIX - PKCS standards - JavaEE (JPA, JSM, EJB, Java Servlets, 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 Cyrpto. Tokens) - Wrap Keys - Key Derivation Algorithms - Hash Algs - MAC Algs - Error Detection (Crypto. 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
- **Kernel Development:** Linux Modules - Linux System Calls
- **Machine Learning:** CUDA Dev. - Tensorflow (C++ & Python) - OpenCV (C, C++, Python) - Supervised & Unsupervised Learning - Reinforced Learning - Deep Learning - Locality Sensitive Hashes - Iris Code - Gabor filter - Feature Selection & Extraction
- **Scrum:** JIRA - Fisheye - Confluence - Bitbucket - Stash - Redmine - GitLab -Code Reviews - Pull Requests - Release Chain

CAREER

★ **TomTom**
  Senior Software Engineer (*Sept. 2017 - Dec. 2018*)
  Netherlands, Amsterdam
  - Expert Software Consultant from Modis B.V.
  - NavKit Free Text Search Engine, Navkit Worker REST Services, POI Info Services
  - C++11 (g++, clang) - Java SE - JUnit - Spring MVC - JAXB - Spring REST - gdb - Valgrind - Clang ASAN & TSAN - STL & Boost - Google Test - Protobuf - Thrift - Python - Jenkins - QuickBuild - Docker- JIRA - Fisheye - Confluence - Bitbucket Stash - AWS/Azure based cloud

★ **Jeppesen Systems (Boeing)**
  Senior 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 - Jan. 2017)*
Distributed Systems Architect, Senior Software Engineer *(Feb. 2015 - Jun. 2015)*
Iran, Tehran
- DL based Network Traffic Analyzer - Network Anomaly Detector - Distributed Job Coordinator
- C++ (g++) - C (gcc, CUDA) - Java SE - Python - gdb - Valgrind - STL & Boost - Google Test - Protobuf - gRPC - Tensorflow -
Zookeeper - Memcached - Jenkins - Zabbix - Redmine - GitLab - Github

★ **Adro Co.**
Senior Software Architect, Principal C++ Engineer textsl(Jun. 2016 - Jan. 2017)
Iran, Tehran
- Realtime Bidding (RTB) Engine
- C++ (g++) - Python - gdb - Valgrind - STL & Boost - libuv - Google Test - Protobuf - Jenkins - Travis CI - Docker - JIRA - Fisheye

★ **Naeem Co.**
Chief Technical Officer, Chief Software Architect *(Apr. 2015 - Oct. 2016)*
Iran, Tehran
- **Projects:** ePassport Issuance System - Face Recognition System, Biometric Identification Sys.
- **Crypto.:** OpenSSL - PKCS (1, 7, 10, 11, 12) - ICAO MRTD standards - HSM - Key Mgmt. - PKCS11 Tokens
- **Stack:** C (gcc) - C++ (g++) - Java SE - Java EE - Spring MVC - Wildfly - Tomcat - Python - gdb - Valgrind - STL & Boost - wxWdigets
- Qt - Google Test - Jenkins - Docker - vSphere - Proxmox - Gluster - Cassandra - Redmine - GitLab

★ **Sharif CERT Center**
Software 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

FREELANCING CAREER

I have a single-person company (*ZZP Bedrijf*) registered in Netherlands. On a casual basis, I do the following as a freelancer in my free times:

- Authoring books and articles:
  The book **Extreme C** which is going to be published by **PacktPub** soon.
- Open Source Development:
  Netdata: Real-time performance monitoring engine written mainly in C [github.com/netdata/netdata]
  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]
- Software Development
- Software Design Consultancy
- Instruction and Lecturing

FOREIGN LANGUAGES

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

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 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