

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 them 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

- **Programming Languages:** C++ (14, 17, 20) - C - Golang - Rust - JS (ES5, ES6) - Java (11+) - Python (2, 3)
- **Blockchain Development:** Solidity (EVM chains) - Solana - web3 (ethers.js, web3.js) - Hardhat
- **Architecture Concepts:** ACID - CAP - In-memory and Dist. caches - Distributed key-value stores - Replication - Fault tolerance - Leader election - Dist. locks - Dist. file systems - Streaming - Micro-batching - CQRS - Event Sourcing - Message Queues - Green threads - Event loops and async programming - Load balancers
- **Data Storage:** PostgreSQL - MySQL - MongoDB - Redis - Dist. ledgers (blockchains)
- **Kubernetes:** kubectl - k9s - Helm - Kustomize - Configuring resources such as ingress, pod, deployment, replica set, secrets, pod security policies, pod security admission (PSA) as of 1.25 - Migration from earlier versions to 1.23 and 1.25
- **Amazon AWS:** awscli - eksctl - Configuring resources such as EC2 instances, EBS volumes, EFS, S3, ALBs, EKS, IAM, etc
- **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), ERCs (20, 721, 1155, 165, 2981, 2535, ...)
- **Cryptography:** OpenSSL - Symmetric algos (DES, 3DES, AES) - Asymmetric algos (RSA, ECC, DH) - SSL - PKI (CA, Digital Signature, PKCS certs, HSMs and Crypto. Tokens) - Wrap Keys - Key Derivation Algorithms - Hash algos - MAC algos - Error Detection (Crypto. Hashes), studying for CISSP certificate
- **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

CAREER

★ ActiveVideo BV

Senior Software Engineer (April. 2019 - Feb. 2023)

Netherlands, Hilversum

- CloudTV: TODO
- AppCloud: TODO
- Member of Tech Council: TODO
- Founding member of Security Guild: TODO
- C++17 (g++, clang) - Python - AWS - Kubernetes (EKS) - TODO

★ TomTom BV

Senior Software Engineer (Sept. 2017 - March. 2019)

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 (a Boeing subsidiary)

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

Sweden, Gothenburg

- Manpower Application
- C++11 (g++) - Python - C#.NET - gdb - Valgrind (callgrind, massif) - PDB - STL & Boost - Google Test - XMLRPC - Jenkins - JIRA - Fisheye - Confluence

★ 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

Technical authorship

- **Extreme C:** My first book was published in October 2019 by Packt Publication.
- **Linux Two-Step Authentication with Rust:** A liveProject published by Manning Publications that walks through the students and makes them able to use Rust to develop a two-step verification system for authentication services.

FOREIGN LANGUAGES

Persian (**Native**), English (**Fluent**), French (**A1**), Dutch (**A2**)

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

PERSONAL 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