

# Shivanand Velmurugan

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## Overview

Product owner and architect with 15+ years of experience in design and development of applications on networking devices. Adept in helping build and work with high-performing engineering teams. For the last six years, I have been delivering transformational software infrastructure for the IP operating system (IPOS) for Ericsson networking devices.

In addition to my day job, I sometimes dabble in solving programming problems for fun. Some of them can be found at [github.com/shiva](https://github.com/shiva).

## Experience

### Aug 2007 to present - Ericsson Inc., Vancouver, Canada

*HCL Axon Technologies acquired Ericsson Vancouver effective Jan 2016.*

- **Current designation:** senior technical architect
- **Current role:** product owner for IPOS infrastructure
- **Previous roles:** senior software engineer, software designer and technical lead

## Recent achievements

- Defined vision, strategy and roadmap for next-gen declarative application development on IPOS product line.
- Secured executive buy-in and investment in multi-year infrastructure project.
- Built and mentored four agile product development teams across multiple sites and time-zones.
- Designed and developed Managed Data Infrastructure (MDI). MDI is a set of components for managing schema-based data using a high performance database in carrier-class router operating system.
- Migrated six router applications within three months resulting in
  - reduced code base by 70 to 80 per cent;
  - increased developer productivity by two to three times; and,
  - improved time to market from multiple weeks to a few days.
- Prioritized and shaped requirements from multiple stakeholders, including: developers, system managers and product sponsors within Ericsson.
- Evangelized software design practices within the IPOS organization.

## In the past

- Created a meta-data aware, non-transactional cache with eventual data consistency.
- Created a high-density, low-latency, transactional datastore with record-level locking.
- Shortened development cycle from hours to seconds by redesigning build infrastructure for IPOS platform and components.

- Wrote a custom DSL to provide Object Relationship Mapping (ORM) between two proprietary data-definitions languages.
- Designed common models for IPOS and evangelized Ericsson Common Information Model (ECIM) and its adoption across IPOS features. This included setting standards, establishing a technical council of developers proficient in modeling, training and mentoring them to work with IPOS feature teams.
- Implemented python and javascript apps to demonstrate MDI's abilities as a ecosystem for rapid app development (using SWIG and FFI).
- Created a portable framework for developing C applications on embedded devices.
- Replaced CORBA-based legacy fault management implementation with pub-sub.
- Provided support for several networking features in Netop product, including: Dot1q, Bridging, L2/L3 VPN, etc.

#### **Dec 2006 to Jul 2007 - Novell, Bangalore, India**

- Developed cross-platform component for boot-time remote view of end-hosts.
- Drove case study for technology support for hardware by multiple vendors.

#### **Nov 2002 to Dec 2006 - HCL Technologies (Cisco Partner), Chennai, India**

- Designed and developed a cutting-edge Topology display framework in javascript.
- Designed and built a highly scalable system for monitoring traps from access-layer devices to track end-hosts in a network.
- Created a popular client utility to aggregate end-host information.

#### **May 2001 to Oct 2002 - Intec Solutions, Chennai, India**

- Created management application for several products used for industrial automation.
- Created components to interact with micro-controllers using MODBUS and CANBUS in ATL COM.
- Implemented standard development processes, including: documentation, version control, static analysis, code-reviews, etc.

### **Skills**

Experienced in product architecture and design of high-performance and high-scale databases and IP operating systems. Experienced in leading teams to design and build network management solutions. Expert in C and C++, with an emphasis on development in embedded systems.

- Languages : C, C++, Java, Javascript, Python, BASH scripting, Perl, Ruby, Go, Rust, Nimrod, Terra
- Build Tools : CMake, Make
- Source Control : Git, CVS, SVN, Mercurial, Clearcase
- Miscellaneous : XML, XSLT, SOAP, XQUERY, SWIG, ANTLR, Flex/Bison
- N/W tech : NETCONF, SNMP, L2 and L3 protocols

### **Education**

Bachelor of Technology (Electrical And Electronics Engineering)  
 Pondicherry Engineering College, Pondicherry, India  
 Graduated in 2001