

# Shivanand Velmurugan

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## Overview

Product owner and architect with 17+ years of experience in design and development of enterprise and telecommunications applications. Adept in building and working with high-performing engineering teams.

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

### May 2017 to present - GE Digital, Burnaby, Canada

- Owning and driving product requirements for security and data management for two key GE Digital products: Predix Studio and Predix AppEngine.
  - Target markets include GE business verticals of power, mining, aviation and healthcare.
  - Total addressable revenue potential: 100M+
- Championing adoption of cloudfoundry security model resulting in integration with other GE products targeting 100M+ potential revenue.
- Initiated and drove the adoption of GE security policies reducing number of security issues from 1000+ to under 10.
- Instituted data-driven approach to product roadmap definition and planning
- Channeled all engineering teams' focus to improve product quality. Reduced from 3000+ bugs to less than 200.
- Reduced operational cost by streamlining product infrastructure, testing practices and instituting CI/CD. Reduced bug incidence during regression by ~300% YoY. (tracking this over the last 3 quarters)

### Jan 2016 to May 2017 - HCL Axon Technologies (for Ericsson Inc.), Burnaby, Canada

### Aug 2007 to Dec 2015 - Ericsson Inc., Burnaby, Canada

#### As a product owner

- 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 projects.
  - Prioritized and shaped requirements from multiple stakeholders, including: developers, system managers and product sponsors within Ericsson.
  - Built and mentored four agile product development teams across multiple sites and time-zones.
- 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 months to days.

### **As an engineer/architect**

- 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.
- 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).
- 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 management, 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, JSON, REST
- N/W tech : NETCONF, RESTCONF, SNMP, L2 and L3 protocols
- Cloud Tech : UAA, Cloudfoundry, several AWS and Azure products

## **Education**

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