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Brief Bio

I joined the software industry in 1992 and have varied technical experience both in large companies like Hewlett-Packard, Cisco, Novell, Index Computing and some start-ups both in India and the United States. Currently, I am a freelancer undertaking assignments from Topcoder.com - which is based in the US. I operate in multiple roles ranging from technology recommendation, project requirement specification to developing ideas and architecture, coding and implementing the solution.

In Topcoder, I have worked in multiple functional domains including Banking, Insurance, Oil-Well logging operations and Windmill Power prediction. I have worked with IBM Cloud/Cognitive AI solutions where I proposed ideas and specified application prototypes / POCs to IBM. Some of the other technology areas I have worked in are Data Science, Machine Learning and Blockchain.

While working with companies like HP and Cisco, I have done multiple projects spanning the software life-cycle in different domains. Besides delivery, I have also presented at conferences in the US and France and filed patent applications both in the U.S and India.

Some projects/platforms I have worked in:

As employee of companies:

Index Computing (now called ANZ-IT)

- As a software engineer, I worked for three years in distributed Retail Banking applications in COBOL on the AS/400 platform and NCR mini computers. I was part of implementation teams in Nairobi, Bahrain and Colombo.
- I prototyped a banking component system (Statement storage) on OS/2 using the System Object Model of OS/2.

Novell

- As a Software Development Manager, my main areas of responsibility were defining and developing tools for the developer community, providing components (ActiveX controls and JavaBeans) in the areas of NDS and LDAP for Visual Basic and Java, scripting tools for rapid web application development on the NetWare platform.
- As a Software Engineer, I worked on GroupWise (a groupware product) and the Arabic and Hebrew version of WordPerfect (a word-processing application).

Redwood Systems

- As part of the Realtime Reuters Financial News feed- Text processing engine team, I was responsible for the architecture, design and algorithms for ranking the results, company name recognition as well as project management and coding of critical modules. Technologies used were J2EE EJBs, JMS, Database, XML.

Cisco + Andiamo Systems (taken over by Cisco)

- Technical architect responsible for schema definition of the Storage Management system, module interface design, design and algorithms of the core modules of the system like high-availability, SAN configuration and recovery, performance and failure impact analysis.
- Architect, design and implementer of embedded CIM instrumentation for the Cisco SAN switch.

Hewlett-Packard (India Software Operations)

Technical architect in the Storage division of HP, responsible for instrumenting EVA and other Blade storage products for Enterprise Device management systems.

Projects as a freelancer at Topcoder:

- Build a coverage optimization tool for an Insurance Provider. The problem was to analyse the variability of parent products with reference to the unique child products formed due to benefits customizations, especially "free-format" text fields. This was implemented in python 3.6 and Linux.
- Build a POC blockchain solution for an Insurance consortium to detect frauds and to enable claims processing in relation to unclaimed amounts. POC used IBM Hyperledger.
- Analyse performance of a global wealth management bank's Financial Analysts (FAs) to determine the features that strongly correlate with increase in amount of managed wealth or “New Net Money” (NNM) based on data collected over several years. Implemented in Python and Linux.
- Build a predictive analytics algorithm to predict potential closing bidders for a global investment bank. Built in Python.
- Develop approach and program design to extract relevant data of interest from SEC reports that are in the form of unstructured HTML documents. Relate numeric data to other figures and report various ratios and absolute figures.
- Approach and design for a Data Convergence Analysis tool that will match data from disparate sources and suggest duplicates or related items.
- Built an intelligent data generation tool based on a schema to model "clusters" of relations in data. This is to simulate real, unknown temporal correlations that may exist in the original data. Built in Python.
- Formulated the problem, specified modules and ran a series of POC contests for IBM cognitive Discovery and NLU systems, including news feeds and chatbots. The POC system was a basketball player analysis system using text/ news stories.

Platforms: IBM AS/400, NCR minicomputer, Linux, Windows, OS/2, IBM Cloud.

Languages: Java, COBOL, Python, C/C++, Node.js, JavaScript, Octave

Highest academic degree:

In 1992 I obtained a Master of Computer Applications degree from Department of Computer Science, University of Poona, the pioneer of the MCA program in India, which was then ranked as the top institution for MCA. I finished the course at the top of the class.

Some relevant online courses completed:

- Natural Language processing (Stanford) by Jurafsky and Manning with a grade and certificate.
- Neural Networks by AI guru Jeffrey Hinton (Univ of Toronto*). Did not pay the fees, so no certificate.*
- Machine Learning with Python-From Linear Models to Deep Learning by MIT*. Did not pay the fees, so no certificate.*

Intellectual Property

Patent applications

1. Partitioned Data Management Cache

To increase the throughput of a CIM[1] resource provider, the idea is to combine a time-based periodic refresh with an on-demand cache refresh when a CIM request is received by the CIM Server/Provider based on certain CIM classes.

2. Data processing method and apparatus thereof

This idea proposes a domain-independent and protocol independent cache that could be used across different providers that use CIM as its object-model.

3. Apparatus and method for processing management requests

A mechanism to assign priority to a CIM request in CIM/WBEM[2] applications.

https://patents.google.com/?inventor=Shivkumar+KANNAN

Research Disclosures (at HP):

1. Authentication and Authorization in multi-tenant CIM Objectmanager
2. An approach to generate CIM Lifecycle indications.
3. A method to reduce the discovery cycle time in CIM client applications

Publications (at HP):

Presented a short paper titled “A generic CIM cache to scale proxy providers” at the 1st International DMTF[3] Academic Alliance Workshop on Systems and Virtualization Management: Standards and New Technologies held on 23, 24 October 2007 at Toulouse, France.

https://www.dmtf.org/sites/default/files/PreliminaryProgram-16-10-07.pdf

Book (at Novell)

-I was paid by Wrox Publishers, UK, to co-author a book on Programming to the Novell Directory Service in 1999 (along with 4 other technical personnel from UK and Europe). (ISBN-13: 978-1-86100-396-6)

https://www.loot.co.za/product/shivkumar-kannan-professional-nds/srks-178-gaa0

(The book did not get published by Wrox for "marketing reasons" after all contents were submitted and reviewed).

IETF Draft (at Novell):

In July 2000, I submitted a draft to the Internet Engineering Task Force (IETF) on transaction services for the Directory titled "An approach to enable directory transactions".

https://tools.ietf.org/html/draft-shivkumar-ldapext-dirtxn-00

Standards representation (at Cisco and HP):

DMTF/SNIA[4]:

- I represented Cisco in the Fibre Channel Network Management Technical Working Group at SNIA (2005-06) and contributed to the Virtual Fabrics and Switch Partitioning sub profiles in the SMIS (Storage Management Interface Specification) specifications for Fabric and Switch profiles.
- I represented HP in the CQL working group at the DMTF from November 2007.

Glossary:

1. CIM - Common Information Model (a DMTF standard)
2. WBEM- Web-Based Enterprise Management
3. DMTF: Desktop Management Task force
4. SNIA- Storage Networking Industry Association