

# Sohel Khan (MS Computer Science)

## IT Architect/Developer

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### SUMMARY

Enterprise Architect and hands-on SOA Architect/Developer, leading complex IT transformation projects. About 19 years experience in developing enterprise solutions using J2EE, LAMP, Oracle SOA Stack, IBM SOA stack of products with current focus on Microservices, Lambda architecture and BlockChain.

### TOOLS AND TECHNOLOGY

SOA	IBM SOA Reference Architecture (Datapower, WESB, MQ, Websphere), Jboss, Oracle SOA Suite/OSB 12c, Weblogic Portal
COMPONENT PLATFORMS	ALSR, Coherence 12c, Hotcache, Akka, Kafka
SOFTWARE ENGG. TOOLS	COM/DCOM, J2EE, Servlets, Dot Net, Apache Tomcat, EJB Rational Suite, Requisite Pro, Eclipse, PSP, IBM Rational Software Architect, Oracle workshop, Eclipse
CONTINUOUS DELIVERY	Hudson/Jenkins, Maven, Buildforge, Puppet, Vagrant
LANGUAGES	C, C++, Delphi, Java, VB.Net, ASP.Net, Ruby, Scala
MARKUP/STANDARDS	XML, XMI, XSLT, Xquery, SOAP, WSDL, JAX-RPC, BPEL, AS2
FRAMEWORKS	MFC, Swing, SAX, DOM, JUNIT, ANT, Log4j, Spring, Drupal, GWT (Google Web Toolkit), Vaadin
MODELING & SIMULATION	Promella, CSIM, Spin, UML, ER/EER, Rational Rose, Borland Together, Enterprise Architect
DBMS	Oracle, SQL Server, DB2, MySQL, Golden Gate, Cassandra
OPERATING SYSTEMS	Windows 2k/NT, Linux 6.2, Solaris, Ubuntu, AIX
MOBILE	GWT, ODK(Open Data Kit), Eclipse ADT, Ionic, Android
BLOCKCHAIN	Ethereum, Solidity, Truffle

### TECHNICAL EXPERTISE

- Deep technical background and superior communication skills that enables me to provide innovative solutions to solve business problems
- Expertise in the development and communication of IT Strategy which balances the delivery, governance, innovation and addresses business needs
- Expertise in the planning and strategy of Enterprise Transformation projects
- Expertise in the entire IT lifecycle. Particular strength in combining different technology platforms to become an End-to-End solution
- Expertise in developing resource strategies across onshore, near shore and offshore partners.
- Hands-on experience leading all stages of strategy and execution across multiple companies, business units and regions
- Perform Technical Solution Assessments, document existing enterprise architecture and build transition architecture (TOGAF, IBM SOA Maturity Model)
- Architect functional solutions based on component-based architectures, frameworks satisfying the quality of service and non-functional requirements like security, performance, scalability, maintainability etc
- Use of modeling techniques for solutioning, performance analysis or communicating the solution to stakeholders using different views
- Apply IT Standards in Creation of Solutions using J2EE, Java, application servers, integration patterns and crowd sourcing

### CERTIFICATIONS

- OpenGroup TOGAF 8 Enterprise Architect Certification
- ITA Client Consulting
- PMP (Project Management Professional) from PMI in 2005
- SOMA (Service Oriented Modeling & Architecture) T3 Training
- Architecting-the-Enterprise TOGAF Gold Certification
- IBM SOA Foundation
- Oracle SOA Suite 11g Certified Implementation Specialist

## **PROFESSIONAL EXPERIENCE (SIGNIFICANT PROJECTS)**

**Co-founder/Architect pManifold InfoLabs**

**Jan 2018 to till date**

TECHNOLOGY Scala, Play, Cassandra, IONIC, Angular, Kubernetes, Solidity, Ethereum

- Consulting in Blockchain applications (Supply chain, Academic Transcripts, Escrow)
- Consulting for EA maturity assessment, DevOps and SOA/ERP implementation
- JANA (<https://neutraladvocate.com/>) is a collaborative platform to manage agreements between teams and build a network of empowered, accountable, and aligned teams. I built a DAPP and escrow smart contracts on ethereum platform to manage the payment in ECR 20 tokens (<https://escrow.dev.neutraladvocate.com>)
- Working on product development of a survey platform
  - Consult Engine (<https://app.consultengine.com>) – A consultation survey product for engaging stakeholders and collecting insights for decision support, policy advocacy, intellectual engagement of communities leveraging leading-edge technologies in mobile, AI and fast data. The application was designed on a RESTfull services layer build using Play/Scala and Hybrid client application (IOS/Android) using Ionic.

**Solution Architect (Rogers)**

**Feb 2015 to Nov 2017**

### **Project title: EMC (Enterprise Middleware Cache)**

CLIENT	Rogers	DURATION	Nov 15 – Jul 16
ROLE	Middleware Architect	TEAM SIZE	10
TECHNOLOGY	Java, J2EE, Oracle Golden Gate, Coherence 12c, Hotcache, Weblogic JMS		

#### DESCRIPTION AND ACCOMPLISHMENTS

- Project EMC purpose was to build a cache for frequently used services and build a service layer based on existing contracts to serve the data from the cache.
- The system detects database changes from the systems of records and push the changes to the cache to keep up-to-date data in near real-time.
- Provide fast services for frequently used customer data, especially the customer data that is used to load the user dashboards.
- Provide the frequently requested customer data in near real time without any discrepancy from the system of records.
- Serve data from cache and reduce the load on back-ends for such frequently used data.

### **Project title: UTE (Unified Touch Experience)**

CLIENT	Rogers	DURATION	Feb 15 – May 15
ROLE	Middleware Architect	TEAM SIZE	20
TECHNOLOGY	Java, J2EE, Oracle Golden Gate, Coherence, Hotcache, Weblogic JMS, Kafka, Akka, Cassandra, Play framework		

#### DESCRIPTION AND ACCOMPLISHMENTS

- The existing web front end is not responsive because of dependency on middleware web services, hence we started looking into the "data factory" and "ExtremeBI" concept within the new Oracle Information Management Reference Architecture.
- We leveraged ExtremeBI, for structured relational sources, using Oracle GoldenGate and Coherence Hotcache to trickle-feed data of interest directly into a middleware cache as well as the Cassandra database at the front end.
- This provided a web cache for the revamped website which will provide data available 24/7
- Data moved close to the front end Play and Akka framework to reduce latency and response times
- Web/MW cache are updated via PUSH when changes to source system are triggered

### **Project title: BPM**

CLIENT	Rogers	DURATION	Jun 15 – Oct 15
ROLE	BPM Consultant	TEAM SIZE	5
TECHNOLOGY	Oracle BPM, SOA Suite, ADF		

#### DESCRIPTION AND ACCOMPLISHMENTS

- Modeling business process of middleware group from intake to execution of project
- Implementing the business process in Oracle BPM and integrating with existing systems

- Customizing the task forms using Oracle ADF, BPM workspace 11g.

## **Solution Architect (HCL)**

**Aug 2014 to Jan 2015**

### **Project title: RESP (Rogers Enterprise Service Platform)**

CLIENT	Rogers	DURATION	Aug 14 – Jan 15
ROLE	Solution Architect	TEAM SIZE	50
TECHNOLOGY	Java, J2EE, Oracle SOA Suite, Oracle Service Bus 12c, Weblogic JMS, IBM MQ, Tuxedo		

#### DESCRIPTION AND ACCOMPLISHMENTS

There are multiple (approx. 25) middleware platforms at Rogers at present leading to :

- ◆ Redundancy : Large number of unused services
- ◆ Duplicity: Duplicate services across various platforms
- ◆ Lack of standardization leading to increased complexity

SOA Reference Architecture based on Oracle Service Bus and SOA Suite was proposed to consolidate services deployed across multiple Middleware platforms into a unified Middleware Platform. The project is being executed in multiple release with a goal towards achieving

- ◆ Reduce complexity
  - ◆ Lower TCO
  - ◆ Improve security through integration with Layer 7
  - ◆ Help reduce time to market of new initiatives by speeding up delivery of Middleware solutions
- Designed a service hierarchy and service model based on eTOM to consolidate the application portfolio, reduce redundancy and simplify the complex business services.
  - Worked on Continuous Delivery and Integration of the solution
  - Performance analysis of time critical services and infrastructure tuning (SOA Suite, OSB) to meet the SLAs

## **SOA Consultant**

**Jun 2013 to Jun 2014**

### **Project title: CPSA**

CLIENT	InnovaPost	DURATION	Jun 13 – Dec 13
ROLE	SOA Consultant	TEAM SIZE	7
TECHNOLOGY	Java, J2EE, XSLT, Oracle SOA Suite, IBM Datapower, Weblogic JMS		

#### DESCRIPTION AND ACCOMPLISHMENTS

- To modernize the credit card payment architecture to provide higher system availability for credit card authorization by decoupling the pre-authorization process from SAP. Integrate with TD Online Mart. Insure compliance with regulatory requirements for credit card settlement process.
- Designed the interfaces in BPEL processes and mediators, implemented fault management policy, unit testing using SOA Suite testing framework, integration testing using SOAP UI.

### **Project title: SOA Cache**

CLIENT	InnovaPost	DURATION	Jan 14 – Apr 14
ROLE	SOA Consultant	TEAM SIZE	5
TECHNOLOGY	Java, J2EE, XSLT, Oracle SOA Suite, IBM Datapower, Weblogic JMS		

#### DESCRIPTION AND ACCOMPLISHMENTS

- Built a mid-tier caching solution (Service Result Cache) for common business services to improve the performance of SOA applications using Oracle Coherence and Oracle SOA Suite.

### **Project title: B2B Integration**

CLIENT	InnovaPost	DURATION	Apr 14 – June 14
ROLE	SOA Consultant	TEAM SIZE	5
TECHNOLOGY	Java, J2EE, XSLT, Oracle SOA Suite, IBM Datapower, Weblogic JMS		

#### DESCRIPTION AND ACCOMPLISHMENTS

- Client uses IT services from different vendors(Wipro, CompuCom etc). As part of its business strategy client was outsourcing its IT service management to external vendors for different IT services.
- Each uses a different system (Pulse, InfoPACC, ServiceNow etc) to support its ITSM processes. In order to support an efficient interaction between the ITSM providers and automate the interface between the ITSM tools B2B Integration solution was built with SOA Suite and Datapower.
- B2B Integration supported exchanging information about Incidents, Problems, Change and Service Requests between PULSE and vendors ITSM systems.
- The SOA Suite Composites implemented the data and control flows. SMTP Relay was invoked by User Messaging Service for the purpose of sending notifications. JMS messaging was utilized for error handling and retries.
- The IBM DataPower was used to implement policies (e.g. authentication, encryption, throttling) for all web service calls outside Oracle SOA Suite.

**Project title: SILA(SAP Integration Layer Application)**

CLIENT	InnovaPost	DURATION	Aug 13 – Dec 13
ROLE	SOA Consultant	TEAM SIZE	7
TECHNOLOGY	Java, J2EE, XSLT, Oracle SOA Suite, IBM Datapower, Weblogic JMS		

**DESCRIPTION AND ACCOMPLISHMENTS**

- The SILA application aimed to provide a layer of availability to the underlying SAP infrastructure.
- The application was designed and implemented by taking advantage of Oracle SOA's message queuing abilities. SAP service invocations were stored for later batch processing in the event that SAP becomes unavailable. This ultimately allowed high-responsiveness applications that required SAP to continue processing normally; thus increasing the availability and reliability of these services.

**Project title: Instream Finance**

CLIENT	Instream	DURATION	Mar 13 – May 13
ROLE	IT Architect	TEAM SIZE	10
TECHNOLOGY	Java, J2EE, Jboss, iBatis, MySQL, Apache, JQuery		

**DESCRIPTION AND ACCOMPLISHMENTS**

- Implemented a web based multi-tier solution on Jboss using REST based service layer and Javascript(Jquery) AJAX based web front end for Instream Inc. The solution is part of a broader corporate initiative to create a more engaging user experience focused on Wealth Management and the Social Enterprise theme by monetizing the engagement via a marketplace, licensing agreements, and CPC/CPM models.

**International Business Machines (IBM) Canada ([www.ibm.com/ca/en](http://www.ibm.com/ca/en))**

**IT Architect**

**Mar 2009 to Apr 2013**

- Worked for GBS clients. Some significant projects are described below.

**Project title: IESO MDM/R**

CLIENT	IESO	DURATION	Mar 12 – Mar 13
ROLE	IT Architect	TEAM SIZE	30
TECHNOLOGY	Java, J2EE, Websphere Partner Gateway, Websphere Application Server, Oracle, DB2, Energy IP, AIX		

**DESCRIPTION AND ACCOMPLISHMENTS**

- The Independent Electricity System Operator (IESO) works at the heart of Ontario's power system. The IESO delivers key services across the electricity sector including: managing the power system in real-time, planning for the province's future energy needs, enabling conservation and designing a more efficient electricity marketplace to support sector evolution.
- Meter Data Management and Repository (MDM/R) solution is supporting all Ontario's local distribution companies which results in 4.5M residential meters. This results in over 95M updated meter intervals each day resulting in 250TB of data in ((seven)) environments. IBM was selected to enhance the overall performance of the MDM/R through new computing infrastructure, enhanced Web services facility to support increasing volumes of requests for consumption information, enhanced disaster recovery capabilities, and operational improvements with a focus on reducing risk and costs.

- Product was architected for single tenant and we applied wrappers, tools, and process to support **multiple tenants**
- Helped in analysis to address the challenges related to scalability, DB growth, infrastructure provisioning, data quality and the drive to "operationalize" the delivery to meet extreme SLAs.
- Solutioning for automation and monitoring of complete distributed platform using **Jenkins**, custom plugins and python scripts.
- Working on a **multi-threaded archiving solution** in Java based on **IBM's Business Intelligence methodology**. It provides for a multi faceted solution that will contain data sourced from the operational systems database. The archival processes move select operational data into long term off line storage in a program agnostic format; once complete it then removes the selected data from the oracle operational data store. Threads are created per table to do row level operations against production database to keep load on system low.

**Project title: EIF (Enterprise Integration Framework)**

CLIENT	Rogers Communication	DURATION	Mar 09 – Jan 11
ROLE	IT Architect	TEAM SIZE	25
TECHNOLOGY	Java, J2EE, Oracle Service Bus, Weblogic Integration, MQ, Oracle Service Registry, Oracle Enterprise Repository, Amdocs OSS, eTOM		

DESCRIPTION AND ACCOMPLISHMENTS

- Rogers is a Canadian Telecommunications and Media company that started the Business Transformation (BT) initiative to enable single customer, product and billing for all customers (wireless, cable TV and phone)
- The program was divided into 4 transition architectures spanning 3 releases
- The first release was to focus on the replacement and decommissioning of the current Cable Supersystem (SS) and SGI systems. Market conditions of new Wireless entrants forced Rogers to implement Cable's 'Triple Play' (Television, Internet and Rogers Home Phone) on the new BT enterprise- wide platform as quickly as possible.
- The **EIF (Enterprise Integration Framework)** provides an Enterprise Service Bus used to integrate many of the application components impacted by BT. The integration is service oriented (SOI) and supports web services based interfaces (XML messages over the SOAP/HTTP communication protocol) and message based interfaces (XML over JMS, and fixed format over MQ).
- The focus of required Integration architecture was on the replacement of SS/SGI 'as-is' functionality by implementing Amdocs 7.5, a Commercial off-the-shelf (COTS) solution, and by creating interfaces to peripheral systems as required. There were three transition architectures defined at enterprise level to migrate completely to new Amdocs applications. Between the final "to be" architecture and **Transition Architecture 1** the Integration layer had to manage the old as well as the new interfaces and route accordingly.
- Worked with Rogers Architects/Application owners and Amdocs application architects to define the Interface Specification design template and capture all interfaces (between legacy MQ based interfaces, Amdocs webservice and EJB based interfaces and other API based interfaces)
- Reviewed the Roger's **IT Architectural principles** and **integration patterns** to apply with the selected middleware, mainly **Oracle Service Bus, Oracle Service Registry, Weblogic Integration and Websphere MQ**.
- Helped to create detailed design template and guidelines for interfaces and finished the detailed design of all interfaces.
- Worked on the **SOA testing strategy** and tool selection for Integration testing
- Designed and implemented OSB services, BPEL processes in SOA Suite, x-queries, MDBs/EJBs in J2EE (weblogic), web services and other development tools along with unit testing and integration testing
- Implemented **Continuous Integration Environment** with complete automation of build, deploy and test cycles using Maven, Hudson/Jenkins and custom scripts. Also **virtualized** the build environment for cloud deployment.
- Successfully delivered 3 releases over a period of 2 years in production and worked on other support functions like **Disaster Recovery tests, JVM Tuning, High availability and Performance testing**

**Project title: ITSM Integration**

CLIENT	Rogers Communication	DURATION	Feb 11 – Feb 12
ROLE	IT Architect	TEAM SIZE	25
TECHNOLOGY	Java, J2EE, Oracle Service Bus, Oracle SOA Suite		

DESCRIPTION AND ACCOMPLISHMENTS

- MF Remedy was the Outage Reporting client. It interfaced with Rogers legacy billing system (SuperSystem : mainframe application). SuperSystem managed the capability for Outage Management. In Proposed new Rogers BT Solution, Outage Management capabilities (like Create, Modify,Cancel & Close Outages) were to be ported from SuperSystem to ARM (Amdocs Resource Management) via EIF. EIF facilitated transition from SuperSystem to ARM. In phase TA2, when SS is not decommissioned, all the Outage Request were to be forwarded to SS by EIF. Once Outage is mastered in SS, Outage information will use to populate ARM outage request and this request will be posted to ARM input JMS queue.
- All the business processes were modelled and implemented as long running BPEL processes in SOA Suite.

### **Project title: Asynchronous logging framework**

CLIENT	Rogers Communication	DURATION	Jun 11 – Feb 12
ROLE	IT Architect	TEAM SIZE	25
TECHNOLOGY	Java, J2EE, Oracle Service Bus, SOA Suite		

#### DESCRIPTION AND ACCOMPLISHMENTS

- The solution needed highly efficient logging, error handling and monitoring support with minimal impact to transactions passing through EIF, yet provide a high visibility to data.
- The error handling framework was implemented with OSB and some custom J2EE components for asynchronous logging.
- The logs statements in all OSB services send logs asynchronously (with Publish action) to a common logging service in OSB. This common logging service sends log with a Java call out to Log Publisher that publishes logs to a Distributed Queue. An MDB EIF Log Recorder reads the logs from queue and stores in a database.
- Rogers MSIT Log Viewer (Web application) displays all logs for every environment correlating all related logs with a transaction id

### **International Business Machines (IBM) India ([www.ibm.com/in/en](http://www.ibm.com/in/en))**

#### **IT Architect**

**Sep 2006 to Feb 2009**

- Worked as Solution Architect for AIS (Nokia's DRM application, AstraZeneca's Infrastructure platform, Downer EDI Rail, FCC Canada and ITE Singapore)
- Worked as Solution Architect for a Pharmaceutical company's RFI. It involved transitioning the existing IBM software based solution to an updated messaging platform built on SOA principles and Oracle-BEA SOA stack (Aqualogic Servicebus, Tivoli monitoring products and Amberpoint SOA governance products on AIX.). The new platform was to be deployed on their existing 3 Datacenters in different geographies. Business Goal was to improve the speed and productivity of its R&D activities and expand its presence in new geographies with the new system.
- Architected the SOA based solution for Nokia involving DRM (Digital Rights Management) and integrating with other Nokia systems.
- Assisted in defining the Software Factory model of development and RMC plug-in for the same.

### **Project title: Digital Motor Register (DMR)**

CLIENT	European Govt	DURATION	Jan 07 – Dec 08
ROLE	IT Architect	TEAM SIZE	40
TECHNOLOGY	Java, J2EE, BEA SOA products (Aqualogic Service Bus, Aqualogic BPM, Weblogic Integration, Weblogic Portal), RuleBurst Business Rule Engine, Oracle		

#### DESCRIPTION AND ACCOMPLISHMENTS

- Worked as an Application Architect of SOA based engagement for European Govt vehicle and tax department. The client manages the vehicles data (3.5 millions vehicles), their registration, inspection, taxation and offers business services to vehicle dealers, citizens, 100 vehicle importers, 2000 plate operators and 63 insurance companies.
- I started this multivendor engagement with **Technical Viability assessment** of Infrastructure Platform (provided by first vendor) with respect to availability, scalability, performance & operational aspects, security and its implications on **Application Architecture**.
- I created the architectural work products mainly component model (ARC-108), architectural templates (ARC 107), architectural decisions (ARC 100), architecture Fit Gap Analysis and reviewed others like **Operation model** and Conceptual Data Model.

- As the technology and product stack proposed was new, never tested before and the scope of project was significant we (Architecture Board) decided to define and test end to end architectural templates to reduce the technical risk and also ease the development.
- The architectural templates were tested with POCs across the three main architecture layers, mainly Weblogic Portal, Aqualogic Service Bus, Weblogic Integration and Weblogic server.
- As the microdesign finished I started with **RSA code transformations** to develop MDM (**Model Driven Development**) plugins on RSA and BEA workshop. These were used in subsequent projects to generate service model from WSDL and complete code from the service model.
- I defined the development guidelines across all layers of the architecture, mainly weblogic portal, aqualogic servicebus, Weblogic integration and application server to enable the Factory Model of development. Release based strategy was proposed to reduce risk.
- I worked on design and coding of technical components in Java/J2EE like logging, error handling and service container framework mainly to implement some NFRs like **Exactly Once QOS**, audit & history requirements and compensation webservice requirements. Some components were also developed on the ALSB for uniform error handling and message transformations.
- Assisted in **Performance modeling** using the RHUMPUS framework to analyse the NFRs required from system and verify the capacity of platform that was provided by client.

**King Fahd University of Petroleum and Minerals, Saudi Arabia ([www.kfupm.edu.sa](http://www.kfupm.edu.sa))  
Faculty and Software Consultant **Jan 2004 to Aug 2006****

- KFUPM is an internationally recognized university of higher education and ranked one of the best in Middle East for its excellence in science and engineering programs and accredited by the American Accreditation Board of Engineering and Technology (ABET).
- Worked as faculty in software engineering program and consultant in sponsored software and research projects.
- Presently working as a Technical Consultant in Strategic Planning group of university wide ERP implementation (SCT Banner and Oracle E-Business Suite).

**Project title: Business Process Automation**

CLIENT	<b>Mass Media Pvt. Ltd.</b>	DURATION	<b>May 04 - Dec 04</b>
ROLE	<b>Project Manager</b>	TEAM SIZE	<b>7</b>
TECHNOLOGY	<b>ASP.Net, Oracle, Code Charge Studio, Enterprise Architect, MS Project</b>		

**DESCRIPTION AND ACCOMPLISHMENTS**

- Project involved automation of the media company's business process and integrated information system across all divisions in the country using ASP.Net and Oracle.
- Elicited and modeled the business and technical requirements from the three major stakeholder groups. Challenge was managing the coding that was outsourced to Software Company based in Nagpur, ASDRC ([www.asdrc.net](http://www.asdrc.net)).
- Initiated the use of code generator for prototyping, accelerating the requirements specification and reducing the development time.
- Managed the project from inception to closure, identifying potential usability issues, managing scope and ensuring that an appropriate level of application quality was maintained at all times.

**Project Title: Software Quality Assurance Tool**

CLIENT	<b>SABIC</b>	DURATION	<b>Feb 04 - May 06</b>
ROLE	<b>Project Manager</b>	TEAM SIZE	<b>16</b>
TECHNOLOGY	<b>Java, SAX, DOM, SableCC, XMI, XSLT, PSP, Eclipse, Websphere, IBM Rational Software Architect, Bugzilla, Requisite Pro</b>		

**DESCRIPTION AND ACCOMPLISHMENTS**

- OOMeter is an enterprise level software metrics and quality assurance tool to measure various metrics from software design and code. The languages supported are C #, Java and UML designs stored in XMI format. It also includes a web service implementation.
- Envisioned the product, wrote the technical and cost proposal for this project that won funds of 250,000 SAR from SABIC ([www.sabic.com](http://www.sabic.com)), the Middle East's largest petrochemical company. Designed a highly extensible architecture for the tool.
- Organized and mentored the teams, motivated them to use PSP (Personal Software Process) and TSP (Team Software Process), performed the code reviews and configuration

management. Provided technical strategy for the development of parsing modules (XMI Parser using SAX and Java Parser using parser code generator: sablecc).

**Project Title: Material Management System**

CLIENT	<b>MMG Pvt. Ltd.</b>	DURATION	<b>May 05 – Nov 05</b>
ROLE	<b>Project Manager</b>	TEAM SIZE	<b>7</b>
TECHNOLOGY	<b>VB.Net, SQL Server, MS Project</b>		

DESCRIPTION AND ACCOMPLISHMENTS

- MMG ([www.mojilgrp.com](http://www.mojilgrp.com)) is one of the leading companies of the region that provides a wide range of services to the Oil & Gas and Petrochemical Industry. They required a new Material Management System to provide inventory visibility throughout different processes at headquarter, client site and storage units.
- Worked with the business and technical units to elicit and refine the requirements. Successfully managed project estimation, change management and closing-out of the project with knowledge transfer to client's IT staff.
- This system saved huge revenues by optimizing the inventory decisions, improving planning and improved quality of service by providing better control on inventory.

**Computer Science Department, KFUPM, KSA**  
**Research Assistant**

**Jan 2001 to Dec 2003**

- Developed a heterogeneous cluster computing environment. Worked on research projects like "Performance Optimization of PC Router", "Parallelization of MRI Application" & other projects as summarized next.
- Worked on e-learning projects, helped to define roles & procedures, identified and prioritized e-learning functions for programming courses. Undertook market research on Learning Management Systems like Moodle, Webcourses and related tools of interactive learning like Authorware.

**Project Title: Software Standards Selection**

CLIENT	<b>Saudi Telecom Corp.</b>	DURATION	<b>Jan 2003 – Dec 2003</b>
ROLE	<b>Technical Consultant</b>	TEAM SIZE	<b>9</b>
TECHNOLOGY	<b>IEEE Software Engineering standards, SUN J2EE standards</b>		

DESCRIPTION AND ACCOMPLISHMENTS

- Project involved assessing and proposing software process standards and best practices for software development at STC ([www.stc.com.sa](http://www.stc.com.sa)). The tools for implementation of standards were also proposed.
- Selected and helped to draft department-wide templates for software acquisition, software configuration management and software metrics collection based on IEEE Software Engineering standards.
- Evaluated and selected tools and environments to automate software development processes.
- Evaluated and selected software development tools for coding standards implementation and unit testing.

**Project Title: SIS Housing module**

CLIENT	<b>KFUPM</b>	DURATION	<b>Apr 2002 – Sep 2002</b>
ROLE	<b>Team Leader</b>	TEAM SIZE	<b>10</b>
TECHNOLOGY	<b>ASP.Net, DB2</b>		

DESCRIPTION AND ACCOMPLISHMENTS

- Student Information System is the technological backbone serving 10,000 students of the university. It acts as the central repository for all student information. The primary call for a new web based module came from the desire of Housing Department to improve its services and automate the room allocation and back office operations like accounting, reports and HR.
- Designed the overall architecture and selected the technology for the web based system and middleware.
- Led the development of web based application in ASP and some third party components, designed the database and migrated old schemas to DB2
- Challenge was dealing with scalability and performance issues especially at the start of semester and interfacing with the legacy system (SIS).



### **Project Title: Parallelization of MRI (Magnetic Resonance Imaging)**

CLIENT	<b>KFUPM</b>	DURATION	<b>Sep 2002 – Mar 2003</b>
ROLE	<b>Research Assistant</b>	TEAM SIZE	<b>3</b>
TECHNOLOGY	<b>C, PVM (Parallel Virtual Machine), Windows, Linux, Solaris, BSD</b>		

#### DESCRIPTION AND ACCOMPLISHMENTS

- Magnetic resonance imaging is based on the absorption and emission of energy in the radio frequency range of the electromagnetic spectrum. MRI produces images based on spatial variations in the phase and frequency of the radio frequency energy being absorbed and emitted by the imaged object.
- Designed and coded the program in c to exploit the inherent parallelism and successfully demonstrated the performance gain on a heterogeneous cluster of 4 machines.

### **Icode Software Pvt. Ltd., Bangalore. ([www.icode.com](http://www.icode.com))** **Software Engineer**

**Feb 2001 to Aug 2001**

- Icode Software Pvt. Ltd is a multinational software company based in Bangalore. It is now renamed as Everest Software after its most successful product, "Everest" an integrated 'all-in-one' business management software for small and mid-size businesses.

### **Project Title: Everest**

CLIENT	<b>Icode Pvt Ltd</b>	DURATION	<b>Feb 2001 – Aug 2001</b>
ROLE	<b>Software Engineer</b>	TEAM SIZE	<b>120</b>
TECHNOLOGY	<b>Delphi, SQL Server, COM, DCOM, ASP</b>		

#### DESCRIPTION AND ACCOMPLISHMENTS

- Everest is the Enterprise solution for companies with 1 to 2500 employees that provides a complete business operating system in one, easy to use, software. It integrates a powerful e-commerce site with the back-end operations. The web transactions automatically go through the same Everest processes as other back-end transactions.
- Worked in product development of EVEREST (Winner of 'Best Software Product' Award at The System Builder Summit and Microsoft 'Small Business Solution Of The Year' Award. <http://www.icode.com/company/awards/index.asp> )
- Designed and Coded Business and Data Objects (DCOM) for Integration of Crystal Reports.
- Analyzed and solved the client server issues of Remote Report Execution

### **Freelance Software Developer**

**Sep 2001 to Jan 2002**

- Worked as freelance software developer for projects in VC++ and Delphi.
- Developed web components in Delphi IDE to automate creation of JavaScript based web menus to be used in web development for client Danish Media Research ApS. (<http://www.dmr.dk/>)

### **Novatech Software Pvt. Ltd., Nagpur. ([www.novatechsoftware.com](http://www.novatechsoftware.com))**

**Software Engineer**

**Feb 2000 to Feb 2001**

- Novatech Software Pvt. Ltd. is one of the leading software companies of Central India.
- Worked as Software Engineer in product development of various products mainly for the client TechnoSolutions Inc.( [www.technosolutions.com](http://www.technosolutions.com)), USA

### **Project Title: Unify**

CLIENT	<b>TechnoSolutions Inc</b>	DURATION	<b>Mar 2000 – Oct 2000</b>
ROLE	<b>Software Engineer</b>	TEAM SIZE	<b>10</b>
TECHNOLOGY	<b>Delphi, Oracle</b>		

#### DESCRIPTION AND ACCOMPLISHMENTS

- Worked in the Application Server development team for UNIFY (now sold as TopTeam, [www.technosolutions.com/products.html](http://www.technosolutions.com/products.html)). UNIFY is a Software development Project management tool. It facilitates routing, discussions groups, etc. within a project team to share knowledge, ideas and resolving project related issues. A newsgroup reader is also built-in for downloading articles from the newsgroups from Internet newsgroup servers.
- Utilized multithreaded architecture to improve efficiency of query execution at application server.

## **Project Title: Response**

CLIENT	<b>TechnoSolutions Inc</b>	DURATION	<b>Oct 2000 – Feb 2001</b>
ROLE	<b>Software Engineer</b>	TEAM SIZE	<b>10</b>
TECHNOLOGY	<b>Delphi, Oracle</b>		

### DESCRIPTION AND ACCOMPLISHMENTS

- Worked as developer for the customer relationship management product (CRM) RESPONSE using Oracle, Delphi and some third party components.
- Designed and developed the Knowledge Base Management Module and the Knowledge Base Search Algorithm.

### EDUCATION

<b>Course/Degree</b>	<b>College</b>	<b>Attendance</b>	<b>%</b>	<b>Division</b>
MS (Computer Science)	KFUPM, Dhahran, KSA. <a href="http://www.kfupm.edu.sa">http://www.kfupm.edu.sa</a>	(2001-2003)	3.89 GPA	Distinction
BE (Electronics Design Technology)	R.K.N.E.C, Nagpur <a href="http://www.rknec.edu">http://www.rknec.edu</a>	(1995-1999)	65%	First
HSSC	Hislop College, Nagpur <a href="http://www.hislopcollege.ac.in">http://www.hislopcollege.ac.in</a>	(1993-1995)	77%	Distinction
SSC	SFS School, Nagpur	(1983-1993)	75%	Distinction

### AWARDS AND ACCOMPLISHMENTS

- IBM Canada Service Excellence Award 2010
- Rogers Telecommunications Maestro Award 2011
- Presented the current experience and SOA challenges faced in the IBM Regional Technical Exchange 2007 in Bangalore, titled "To BEA or not to BEA: Experience of implementing SOA with BEA's solution stack".
- Selected for presenting the Algorithm and Software on "Solution of Rubik's cube" using C++, in the National Level Software Design Contest at IIT (Indian Institute of Technology), Roorkee.
- Awarded Research Assistantship at Information and Computer Science Department, King Fahd University of Petroleum and Minerals in 2001

### PUBLICATIONS

1. "Modeling and Formal Verification of DHCP Using SPIN", International Journal of Computer Science Applications, May 2006 (<http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.95.5651>)
2. "OOMeter: A software quality assurance tool", Proceedings of the Ninth European Conference on Software Maintenance and Reengineering (CSMR). IEEE Computer Society, March 2005. (<http://portal.acm.org/citation.cfm?id=1049023>)
3. "Measuring Architectural Stability in Object-Oriented Systems", Proc. UML'03 Stability Workshop, San Francisco, Oct. 2003. (<http://www.engr.sjsu.edu/~fayad/workshops/UML03/UMLDocs/UML-Proceeding-fnl.pdf>)
4. "Modeling and Formal Verification of IMPP", Software Engineering Research and Practice, 2003, Las Vegas, Nevada, USA ([http://sceas.csd.auth.gr/php/search.php4?author\\_id=360231](http://sceas.csd.auth.gr/php/search.php4?author_id=360231))

### PUBLIC PRESENTATIONS

- Grid: The Next Generation Computing, Sept 2002, Gulf-Internet, Saudi Chambers of Commerce.

### PROFESSIONAL MEMBERSHIPS

- Member: Project Management Institute (PMI)
- Member: 1175 IEEE Working Group "Recommended Practice for CASE Tool Interconnection"
- Member: GGF (Global Grid Forum)
- Member: Open Group, Cloud Computing Working Group

### INSTRUCTION

- Conducted short course on "Practical Software Engineering" in 2005
- Conducted SOMA 3.0 training for Architects in Pune in 2008