

Due to file size constraints, few supporting documents have been included in the present document. However, all the reports relevant to the information provided in response to the metric 7.2.1, Best Practices, are available on the institute website.

### **Criteria 7.2.1 QIM**

#### **Best Practices at Vidyalankar Institute of Technology**

Vidyalankar Institute of Technology, over a period of 24 years, has developed many best practices which have enhanced the quality of teaching and learning, two of which are explained below:

1. Enhancing Technical Competency through Problem Based Learning
2. Enhancing Learning Experience through Lectures by Faculty of International and National Institutes and Experts from Industry

#### **1. Enhancing Technical Competency through Problem Based Learning**

##### **Brief Description of Practice**

At VIT, engineers are nurtured to be solution providers. Problem-based learning (PBL) is a learner-centric pedagogy prevalent at VIT in which our students learn technical concepts through the experience of solving an open-ended problem. In PBL, the teaching strategy is hands-on and experiential learning wherein the course instructor presents a problem to the learner for which a feasible possible solution needs to be generated. Through active learning, the students discover and work with content and technology that they determine is necessary to arrive at a solution. PBL emphasizes self-directed learning (as opposed to rote-learning and recall) and promotes groupwork.

##### **Process**

In the process, students are given a list of problems to choose from which are well-defined and carefully compiled by the course instructors. Problem statements are identified by current demands in research and industrial applications, and service to community. One major source of PBL statements are published hackathon statements, which are basically derived by industrial experts as per their requirements. The PBL methodology is implemented across all programs and in many courses. It is mandatory inclusion in almost all lab courses. Students discuss the chosen problem statement and list its significant parts and its possible solutions with use of appropriate technological tools. In the process, students gather information and learn new concepts, principles, or

## **NAAC Criteria 7 Criteria**

### **7.2.1 Best Practices**

skills as they engage in the problem-solving process. Their problem-solving skills are honed through internal hackathons.

#### **Outcomes**

PBL led to major significant reforms at VIT. By implementing PBL methodology, teachers are transformed to being “facilitators” rather than being mere “disseminators” who will help learners to develop intrinsic interest in the subject through problem analysis, discussion, and implementation of most feasible solutions. Learning through PBL results in enhanced creative thinking skills and enables us to probe the students for higher order thinking skills (like apply, analyze, evaluate, and create). Students get an opportunity to work on real life problems. The emphasis of content delivery is more towards an application-based approach instead of merely teaching theory. One of the outcomes of the implementation of PBL is that over the years, VIT students have been consistently bagging top prizes by winning various prestigious competitions at national level (Smart India Hackathon, Kavach, NABARD Hackathon, Technocians) while solving industry-level problems in software as well as hardware editions. Some examples on which our students provided award-winning solutions are “Financial inclusion in Remote Areas: Digital Financial services for unconnected Regions”, “Real time accident identification and alerting emergency systems” by Maruti Suzuki, “Lack of Information about Academic Activities on a single platform” by AICTE.

VIT is equipped with all the resources and the lab infrastructure required for the implementation of PBL which is now a well-established outcome-based and best practice at the Institute.

## **2. Enhancing Learning Experience through Lectures by Faculty of International and National Institutes and Experts from Industry**

#### **Brief Description of Practice**

VIT has always believed in providing an enriched learning experience for our student community. Guest lectures by experts from industry as well as other academic institutions are a well-established practice in the teaching-learning process at the

## **NAAC Criteria 7 Criteria**

### **7.2.1 Best Practices**

Institute. One guest lecture per course per semester is mandatory since 2014, which is a unique practice at the Institute. Taking this practice to the next level, VIT has initiated a practice of an entire course to be conducted by external instructors from universities abroad or prestigious academic institutions like IITs or NITs or by industry personnel to enable sharing of cutting-edge technology.

#### **Process**

Once the course and the appropriate external faculty are identified, the execution of the course is planned and the resources required are identified. The external faculty are supported by an internal shadow teacher, who is assigned to take responsibility for the course operational support and personalized learning assistance of the learners. In case the external faculty member is not always available, the shadow teacher steps in to support the learners in case of queries, assessment, or feedback on projects. The course may be conducted online, offline, or in blended mode. This practice was initiated in the Academic Year 2022-23 at the Institute, and is being implemented for students of second year, third year and final year of engineering.

For instance, the course "Analysis of Algorithm" was conducted by Prof. Dr. Rajiv Gandhi (Professor at Rutgers University) in online mode for the fourth semester students of Second Year Computer Engineering. On similar lines, the course Data Mining & Business Intelligence was conducted by Mr. Vishal Bhalla, CTO of a company based in the USA, in online mode for the sixth semester students of Third Year Information Technology. At the Institute level, the students' learning and assessment were supported by internal faculty from the respective Departments under the concept of shadow teaching for these two courses. As per the Institute's provisions of Autonomous rules and regulations, these faculty have changed the method of evaluation in tune with their pedagogical approach.

#### **Outcomes**

Such lectures by external instructors are an opportunity for learners to be acquainted with alternative technologies, diverse perspectives, information from varied sources, and sharing of professional experiences by experts. It also offers opportunities to the faculty members to collaborate with external resource personnel and enrich their academic preparation and get valuable exposure to industry applications and experiences. Students' feedback is also observed to be good with such initiatives.

**First Best Practice:** Enhancing Technical Competency through  
Problem Based Learning

Below Document contains the relevant proofs for the best practices  
implemented for Enhancing Digital Learning Resources

**First Best Practice:** Enhancing Technical Competency through Problem Based Learning

**Practical guidelines – Div A - B2 Software Engineering**

**Faculty – Dr.Sachin Bojewar**

**What is expected?**

Practical will be performed in group using PBL approach, activity-based and roll play learning. Within the batch a group of maximum 5 students will be formed. Groups will be paired and performed the following activities.

e.g Pair (G1, G2) G1 will act as client wishing to develop any software and G2 will act as developer, and vice se versa. Developer group need to perform following activities and submit it as project report.

1. Group information (Team leader + members)
2. Requirements Engineering tasks (List out activities performed to understand requirements)
3. SRS document
4. Analysis model (Use case diagram, Data flow diagram, Class diagram use any tool)
5. Design model (Database design, wireframe, architecture)
6. Planning (WBS, Estimation, Schedule – Gantt Chart, Network diagram)
7. RMMM plan
8. Prototype.

Each group will submit single soft copy of the document.

**Date of Submission 27<sup>th</sup> Oct 2023.**

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**PBLE ASSIGNMENT DATA STRUCTURES(CMPN) A.Y 2023-24**

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• **SOLVE ANY 2**

**Problem 1:**(a)[10 marks] Suppose the numbers 1, 2, 3, 4, 5, 6, 7 are inserted into an initially empty binary search tree in some order. (i) Which numbers if inserted in step 1, will imply that the final result tree will be not balanced? (ii) Which numbers if inserted in step 3 will imply that the final result tree will not be balanced? (iii) Which numbers if inserted in step 7 will imply that the the final result will not be balanced?

(b)[10 marks] In the code below which pointers are dangling pointers? Which pointers are such that the memory they point to will leak? Be precise: if  $v$  is of type  $A^*$ , then state clearly whether the memory for  $*v$  leaks or the memory for  $*(v->x)$ . Very little explanation, if any, is expected.

```
struct A{
    int *x;
    A(){ x = new int[10]; }
};
```

```
A* f(A* &u){
    A *p = new A, *q = new A, r;
    u = p;
    return &r;
}
```

```
int main(){ A *s, *t; t = f(s); delete t; delete s;}
```

**Problem 2:** A vector (from math) is *sparse* if only a small number of its elements are non-zero. In such a case it is useful to keep track of indices which correspond to the non-zero elements, and the values of those non-zero elements. In particular, the zero elements are not explicitly stored. It is natural to represent a sparse math vector using a map as follows.

```
map<int,double> v; // all elements considered 0.
v[10] = 3.5;      // v[10] becomes 3.5, others considered 0.
```

(a)[5 marks] Write a function `void print(map<int,double> v, int n)` which will print elements 0 through  $n-1$  on the screen. Note that a 0 should be printed for elements which were not explicitly assigned.

(b)[15 marks] Write a function `double dot(map<int, double> v, map<int,double> w)` which returns the dot product of the math vectors  $v, w$ . In other words, it should return  $\sum_i v[i]w[i]$  where  $i$  ranges over all valid indices. Minimize the work done by your function.

(c)[5 marks] A matrix is likewise considered sparse if it contains mostly 0s. Suppose we wish to represent sparse matrices in a manner similar to above. Further, to assign 3.14 to  $i, j$ th entry of matrix  $A$  we would like to write  $A[i][j] = 3.14$ . What would the declaration of  $A$  be?

**Problem 3:** Consider a vector class which has indexing, the usual push\_back operation and a new pop\_back operation, which causes the last element to be removed from the vector. Here is a possible implementation. At each point during the execution we will have allocated an array of some  $M$  elements. Of these, some  $N \leq M$  will be in use, to store the current vector. If we perform a push\_back, and the required length  $N + 1$  becomes bigger than  $M$ , we allocate a fresh array of size  $2N$ . We copy the vector elements into the newly allocated array, and delete the old array. If we perform a pop\_back operation, and if the new vector length  $N - 1$  becomes smaller than  $M/3$ , then we allocate an array of size  $N - 1$ , copy the vector into the new array, and delete the old array. And of course we update  $N, M$  appropriately.

Suppose some  $n$  operations are performed including creation, push\_back, pop\_back and indexing.

(a) [10 marks] Suppose the  $r$ th operation among these is a pop\_back and causes memory allocation and copying of  $Q$  elements. Show that for some constant  $c$ , the  $cQ$  operations preceding the  $r$ th operation do not involve memory allocation.

(b) [10 marks] Show something similar in case the  $r$ th operation is a push\_back.

(c) [5 marks] Using the preceding two parts, show that the total work for the  $n$  operations must be  $O(n)$ .

**Problem 4:**[20 marks] Suppose we have a binary search tree, in which each node has members value, left, right as usual, but in addition there is a member size which gives the number of nodes in the subtree of the node (including the node itself). Write functions to (a) insert a value into the tree, and (b) to determine the number of values in the tree smaller than a given  $x$ .

**Problem 5:**(a)[10 marks] What is the minimum number of keys that a 2-3 tree must have so that if a key is inserted its height increases to 3? Note that a tree of height 3 has 4 levels of vertices. Draw the picture of such a tree. Your tree must have distinct positive integers and you should minimize the largest integer in the tree. State what you insert and also draw the result.

(b)[5 marks] Suppose I have a 2-3 tree of height  $h$ . What is the minimum number of nodes it can have?

(c)[10 marks] What is the minimum number of keys that can be inserted into a tree of part (b) so that its height increases to  $h + 1$ ? Answer for  $h = 0, 1, 2, 3$  and see if you can infer a formula. You don't have to prove the formula, enough if it matches  $h = 0, 1, 2, 3$ .



Subject: Image Processing

SEM: V

Department: Electronics and Telecommunication

Problem: Face Recognition for Access Control

Scenario: Develop and implement face recognition algorithm to accurately identify and authenticate individuals for access control.

Steps:

1. Implement facial detection algorithms to locate faces in images or video streams.
2. Develop facial recognition algorithms to match detected faces with stored profiles.
3. Address challenges like variations in lighting, facial expressions, and angles.
4. Integrate the system into access control mechanisms for secure entry.
5. Consider ethical implications and privacy concerns related to facial recognition technology.

PBL experiment 3	Read twenty four temperature data values. Store these temperature data values in the data memory. Arrange all temperature values in descending order. Arrange all temperature values in ascending order as a separate block. Count how many temperature values are 20H and store the count in the data memory.
Domain	Micro-controller based application
Background	Micro-controllers are most common in the development of embedded systems. A system may read temperature data continuously and we can develop a program to arrange all temperature values in specific order. We can also identify how many temperature values are identical and variation in a temperature.
Required resources	<ol style="list-style-type: none"> <li>1. PC or laptop</li> <li>2. Software - Keil.</li> <li>3. Simulation tools of Keil.</li> </ol>
Key Points	<ol style="list-style-type: none"> <li>1. Read temperature values (looping)</li> <li>2. Store the values in data memory.</li> <li>3. Using sorting algorithm arrange all temperature values (loop inside loop).</li> <li>4. Generate a separate block to store temperature values in ascending order.</li> <li>5. Store the results in data memory.</li> </ol>
Expected Outcome	<ol style="list-style-type: none"> <li>1. Code in assembly language.</li> <li>2. Simulation results in Keil.</li> </ol>
Name of the Faculty:	Atul Oak Assistant Professor Department of Electronics and Telecommunication Engineering

PBL experiment 6B	ROT13 is a weak form of encryption that involves “rotating” each letter in a word by 13 places. To rotate a letter means to shift it through the alphabet, wrapping around to the beginning if necessary, so ‘a’ shifted by 3 is ‘d’ and ‘z’ shifted by 1 is ‘a’. Write a function called rotate_word that takes a string and an integer as inputs, and that returns a new string that contains the letters from the original string “rotated” by the given amount. For example, “cheer” rotated by 7 is “jolly” and “melon” rotated by -10 is “cubed”. You might want to use the built-in functions ord, which converts a character to a numeric code, and chr, which converts numeric codes to characters. You may assume that the input string is composed of lower-case letters [a..z].
Domain	Python Programming
Concept mapped	Input, output, variables, data types, operators, control structures and user defined functions in python.  Strings in python.
Required resources	1. PC – desktop or laptop. 2. Online gdb compiler for Python or Python installed on local machine.
Key Points	1. Accept string and integer for simple encryption. 2. Pass string and integer as a parameter to UDF. 3. Use standard library functions for doing encryption. 4. Display encrypted result.
Expected Outcome	1. Coding strings in python.
Demonstration/Results	1. Source code. 2. Execution results.
Name of the Faculty:	Atul Oak Assistant Professor Department of Electronics and Telecommunication Engineering

Second Best Practice: Enhancing Learning Experience through Lectures by Faculty of International and National Institutes and Experts from Industry

Below Document contains the relevant proofs for the best practices implemented for Capstone Projects

Note No.

284

Vidyalankar Institute of Technology

Department of First Year Engineering

FE  
 Dispa: 36547  
 Date: 06/09/23  
 Sign: [Signature]

Date: 02/09/2023

The Department of First Year Engineering propose Liberal Learning Courses during Odd Semester 2023-24.

Name of the event/activity: Liberal Learning Courses

Brief about the event/activity with outcomes

First Year Engineering proposes implementation of Liberal Learning Courses for First Year Engineering students in the period of Odd Semester 2023-24. There are a total of 8 courses in this category as given below. Each course suggested is for 2 credits and maximum of 30 hours. All the courses are choice based and have specific batch sizes depending upon the course

Proposed expenditure for the same is as below.

Remuneration/honorarium	Rs. 6,36,340/-
Food expenses	Nil
Travel expenses	Nil
Sundry	Nil
<b>Total</b>	<b>Rs. 6,36,340/-</b>

Budget Head Remuneration / professional charges to Visiting faculties

Amount available in budget head

Rs. 6,36,340/-  
 [Signature]  
 Endorsement by  
 A/c officer

[Signature]  
In-Charge, FE

[Signature]  
CAO

[Signature]  
COO  
6/9/2023

Principal

Submitted to the Director, VDT for sanction.

-----fill bottom part on completion of the event and submit it to the a/c section -----

The above event is completed. Kindly issue remuneration/honorarium to the experts.

Name of expert/s	Bank a/c	IFSC
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Other expenses may be paid as per the details appended with this note. (Append details)

Make. Please ~~can~~ attached cvs.



### Annexture

The course details for Liberal Learning Courses are as follows: -

Sr. no.	Name of the Subject	Resource Person	Profile	Honorarium	Total
1	Facets of Astronomy	Anurag Shewade	Astro photographer	2500/- per hr (2500x30=75000/-)	75,000/-
2	Indian Constitution	Ms Sucheta Joshi	Advocate	2500/- per hr (2500x30=75000/-)	75,000/-
3	Nutrition and Physical Wellness (Batch 1)	Ms Shushma Chaugule	Assistant Professor, BPCA	1000/- per hr (1000x30=30000/-)	30,000/-
4	Nutrition and Physical Wellness (Batch 2)	Dr Kishore Maru <i>Shushma Chaugule</i>	Assistant Professor, BPCA	1000/- per hr (1000x30=30000/-)	30,000/-
5	Wellness: Body, Mind and Spirit (Batch 1)	The Yog Institute	Yoga Trainer	2189/- per hr (2189x30=75000/-)	65,670/-
6	Wellness: Body, Mind and Spirit (Batch 2)	The Yog Institute	Yoga Trainer	2189/- per hr (2189x30=75000/-)	65,670/-
7	Various Dance Forms	Mr Pravin Nair	Choreographer	1000/- per student (1000x70=70000/-)	70,000/-
8	Exploring Indian Arts	In-Process	<i>Sampda Kamat.</i>	2500/- per hr (2500x30=75000/-)	75,000/-
9	Universal Human Values (Batch 1)	In-Process	<i>Dr Surendra Phad Patil.</i>	2500/- per hr (2500x30=75000/-)	75,000/-
10	Universal Human Values (Batch 2)	In-Process	<i>Vijayanka Shah.</i>	2500/- per hr (2500x30=75000/-)	75,000/-
Total					6,36,340/-

To manage the entire decorum of Liberal Learning courses and hospitality of the guest, kindly request an executive with MBA qualifications on an urgent basis.



**Note for Approval of Faculty on Visiting Basis**

Ref. No: - VIT/BIOM/VISITING FACULTY/2023/35523

Date: 9<sup>th</sup> June 2023

Department of Biomedical Engineering proposes the appointment of following faculty members on a visiting basis for teaching following subjects in the current semester A. Y 2023-24:

Nairie	Programme	Sem	No. of Batches	Course	Hrs /week	Remuneration/ Hr	Period From 17 July 2023 to 20 October 2023	Extra Hours	Total Hrs Allotted	Total Expenditure (Theory)	Total expenditure
Prof. Saikat Das	Biomedical	III	Theory	Human Anatomy & Physiology (HAP)	2 Hrs	2000 ₹	14 Weeks	Nil	39 hrs		
Dr. Sanika Suvarnapathaki	Biomedical	V	Theory	Tissue Engineering (TE)	3 Hrs	40 USD	14 Weeks	Nil	39 hrs		
Mr. Akshat karambe	Biomedical	VII	Theory	Bioinformatics (BI)	3 Hrs 1 Hr Tutorial	40 USD	14 Weeks	10 (MSE, ISA (Th & Lab) & ESE Evaluation)	39 hrs		

- Faculty members of Tissue Engineering & Bioinformatics are based in USA.
- 70% Students have opted for DLE: Tissue Engineering (Semester 5)
- 50% Students have opted for DLE2: Bioinformatics (Semester 7)
- Faculty Coordinator for above mentioned subjects are as follows:
  - HAPE (Sem III) - Prof. Neelam Punjabi
  - TE (Sem V) – Prof. Suvarna Udgire
  - BI (Sem VII) – Prof. Komal Lawand
- ISA (Theory), MSE & ESE Evaluation for HAPE & TE will be done by respective faculty coordinators.
- Lectures & Tutorials will be conducted in Online mode for all three courses.
- Time slot will be as per student's convenience.

*OK*  
*[Signature]*

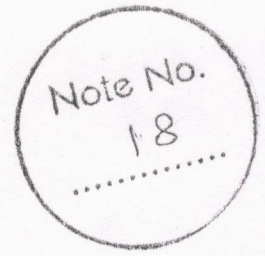
**Dr. Gajanan Nagare**  
HoD, Department of Biomedical Engineering

Encl:- CV

**VIT**  
Vidyalkar Institute of Technology  
BM  
Dispatch No. : 35523  
Date : 09.06.2023  
Sign. : AB



Vidyalankar Institute of Technology  
Office of the Chief Academic Officer



Ref. No:- VIT/CAO/GEN/2023/160  
Date: 20<sup>th</sup> January 2023

**Note**

VIT has invited Industry/Renowned Academician to take one course for our SE, TE, and BE Students to provide a valuable addition to their learning. The CAO office has finalized the following list of resource persons for the Even Semester 2022-23. Kindly consider the budget for your approval.

Sr. No	Semester	Subject	Department	Name & Association	Mode	Rate/Hour	Total
1	IV	Analysis of Algorithm	CMPN	Dr.Rajiv Gandhi Rutgers USA	Online	PC	PC
2	VI	IoT	CMPN	Mr.Pratik Mehar Sakura Biotech	Offline	2000*45	90,000
3	VI	Digital Forensic (Cyber Security Hon)	CMPN	Mr.Bhavesh Dhake (TA)	Offline/ Online	750*52	39,000
4	VI	Game Theory Using AI & ML (AI and ML Hon)	CMPN	Ms.Ishika Samani (TA)	Offline/ Online	750*52	39,000
5	VIII	Optimization in Machine Learning	CMPN	Dr.Ganesh IITB	Online/ offline	2500*45	1,12,500
6	VIII	AI & DS-1	IT	Mr.Vishal Bhalla Co-founder and CTO at SSyncSense, USA	Online	\$100*39	3,12,000
7	VI	DM & BI	IT	Mr.Vishal Bhalla Co-founder and CTO at SSyncSense, USA	Online	\$100*39	3,12,000
8	VIII	Finance Management ILE	ALL	Ms.Swati Kulkarni , UTI Fund Manager & Mr. Milind Limaya , Consultant	offline	1500*45*2	1,35,000
9	VIII	Project Management ILE	ALL	Mr.Shrikant Shirlakra TCS	offline	2500*45*2	2,25,000
10	VIII	Environment Management ILE	ALL	Dr.Minal Parab & Mrs Kiran Patel	Online	1500*45*2	1,35,000
<b>Total</b>							<b>13,99,000</b>

\*Payment will be made for actual hours engaged. These hours includes evaluation, extra classes, etc if needed.

CAO, VIT

COO, VIT

Director, VIT





## Milind Hanumant Karande

[milindkarande@gmail.com](mailto:milindkarande@gmail.com) | [cloudexperts22@hotmail.com](mailto:cloudexperts22@hotmail.com) | Mobile No - 9920636908

### Professional Synopsis :

- Result-oriented Senior Technology Evangelist experienced in steering large technology; Cloud transformation and software implementation programs focused on achieving strategic enterprise goals. I have a positive attitude, high business acumen and thought leadership and in constant pursuit of knowledge & excellence.
- Holding 23+ years of rich IT experience in Consulting, Project & Program Management (5 yrs), Enterprise Architecting, Cloud Architecting, Solution Architecting, Governance, Risk, Compliance (8 yrs), designing, development, implementations, migrations & upgradations for CRM, ERP, Databases / BI / Warehouses, E-Commerce solutions for global clients (10 years)
- Involved into complete life cycle of Cloud services from analysis, designing, architecture, migration plan, managing various cloud services using different vendors like GCP, AWS & Microsoft Azure
- Holding sound expertise in application / database designing, development, administration, maintenance, production support & performance tuning using Microsoft Visual Studio, J2EE, Oracle Forms & Reports using databases Oracle, MS SQL Server, MySQL, MongoDB.
- Involved into all technical Project management activities including Planning and Defining Scope, Activity Planning and Sequencing, Resource Planning, Developing Schedules, Documentation, Risk Analysis, Managing, Monitoring and Reporting Progress, Team Leadership, Business Partnering, Scalability, Interoperability and Portability Analysis.
- Performed IT capability maturity assessment, IT operating model design, IT organization structure design Adept in designing Business Architecture, Information Systems Architecture and Technology Architecture for organizations in line with industry standards like TOGAF
- Comprehensive experience in managing overall service delivery frameworks (Onsite and Offsite Infrastructure Management Services) for large enterprise applications involving scoping, initiating, high level design & architecture of products, resource mobilization, technical support, execution within operational best practices as well as various Project Life-cycle Models like Agile.
- Domain expertise in Insurance, Retails & Manufacturing (all phases of Supply Chain Management), BFSI, Credit services, Tours & Travels, Education, Telecom, Healthcare, Public & Private Sectors, Real Estates.

### Technical Knowledge Purview :

▪ Enterprise Architecture Framework	:	TOGAF® 9.0
▪ App Servers	:	Hybris Server, Weblogic, Tomcat, JBoss, AEM
▪ Platforms	:	Linux, Ubuntu, Unix, Windows, Sun Solaris
▪ RDBMS	:	PostgreSQL, Oracle 6–12c, MySql, MS SqlServer
▪ Cloud Architecture	:	AWS, GCP, Azure, Oracle Cloud
▪ IDE's	:	Eclipse, JDeveloper
▪ GUI	:	Developer 2000, Forms, Reports, Visual Studio, Java
▪ DBA Tools	:	Toad, SQL Developer, Spotlight, OEM, QPA
▪ Business Process Model	:	Archimate
▪ Issue / Project Tracking Tool	:	JIRA and ITSM tools
▪ Governance Practices	:	Cobit®5

### Organization Experience. Sr. Technical / Solution at Equifax Software Systems Pvt Ltd, (Current company)

#### Roles & Responsibilities

- As Sr. Solution & Technical Architect leading Technology and Development Team at Equifax India Mumbai office.
- Responsible for Architecting, design, Tuning and implementation of all core bureau products, analytics, Risk Scores, Search Match (Identify Matching)
- Migration of old monolithic legacy Application to scale-out micro-service based architecture
- Developing Cloud reference architectures, governance policies, security models, and providing best practices on both AWS & GCP platform.
- Produced a comprehensive strategy using AWS Identity and Access Management (IAM) Role for community platform systems and successfully implemented the same setting precedence for other teams to follow suit.
- Performed high level requirements gathering and solution design for clients as per different product requirement
- Providing technical expertise and ownership in the diagnosis and resolution of an issue, including the determination and provision of workaround solution or escalation to service owners



- Serving as Chief Cloud Architect in planning, architecting, migrating all non-legacy / legacy applications / databases on to AWS & GCP platform for Project Luminate Fraud, KFE, Ignite, Data Fabric.

#### **Role / Responsibilities : Sr. Cloud Architect (Equifax Software Systems Pvt Ltd) For Project Luminate Fraud**

- Create repeatable architecture pattern for dominant services and technology stacks
- Collaborate with other engineers and architects to establish the framework and patterns for Bi-Modal IT
- Define and execute cloud automation strategy for enterprise applications and application components
- Communicate and evangelize process for decomposable architecture and usage based sizing
- Hands-on experience in building applications and infrastructure in cloud and migrating applications to AWS or GCP
- Hands-on experience with creating, configuring and implementing and continuous improvement of Automation, Orchestration, CI/CD systems and tools
- Experience with Docker and/or other container technologies
- Working knowledge of configuring infrastructure components in the cloud: API gateway, Compute, Network, Storage, Database, Virtualization, AMQP, IAM, Security
- Working knowledge of authentication and authorization technologies: SAML, OAuth, OKTA
- Ability to align technology recommendations with measurable business value
- Responsible for developing and reviewing key architecture deliverables, preliminary and high-level architecture models for solutions under development. Develop and review architecture artifacts and manage adherence to architecture standards

#### **Role / Responsibilities : Sr. Solution Architect (Equifax Software Systems Pvt Ltd) For Project Ignite**

- Coordinate the design, maintenance, enhancement, communication and governance for solution architecture
- Perform risk analysis, industry and technical trend analysis, vendor selection and oversight, and assist in defining strategic direction.
- Responsible for architecture leadership and must be able to expose and communicate enterprise opportunities across multiple corporate initiatives, provide leadership to the broader architecture community and to vendors, communicate at all levels of the organization and be a trusted advisor at the senior leadership levels of the company
- Design and develop re-usable components and operational strategies in the cloud to support scalability, high availability, performance, monitoring, backup, restore, etc
- Serve as the senior solution architect on a given full Software Development Life Cycle project and vendor work; developing, maintaining and reviewing application architecture throughout the project.
- Participate in the design review process and support the overall Enterprise Architecture Management process
- Also, influence and drive change to architecture processes, strategies and standards, as needed

#### **Roles / Responsibilities : Sr Cloud Architecture (Equifax Software Systems Pvt Ltd) For Project IWN**

- Create or review IT plans that manage clear and realistic expectations of what technology can offer in terms of products, services, and delivery mechanisms
- Research and facilitate the development and review of solution, integration, workflow and web service standards
- Define and execute cloud automation strategy for enterprise applications and application components
- Collaborate with the broader architecture community to provide input into IT strategies and standards
- Selection and review of structural elements and their interfaces, by which a system is composed

#### **Roles / Responsibilities : Technical Architect (Deloitte India Pvt Ltd)**

- Partners closely with Product Managers, Architects, and Engineering Directors to refine and deliver on a multi-phase program that transitions AspenTech products for consumption as SaaS
- Advises the Product Engineering organization on the re-architecture of existing software products to microservice design patterns
- Leads assessments and identifies remediation actions required to achieve GRC compliance in the cloud
- Follows emerging technologies/trends and defines best practices/standards for modern application design and delivery



- Applies competency and focus on scalability, performance, resilience, security and deployment in a private, public and hybrid cloud environment
- Executes POCs and feasibility studies to validate next-gen product concepts and technologies. Uses POC results to guide business and technology decisions
- Ability to align technology recommendations with measurable business value
- Excellent interpersonal, communication and presentation skills
- Demonstrated ability to convey complex information in a clear and concise manner

**Roles / Responsibilities : Sr. Project Lead (Deloitte India Pvt Ltd)**

- Served as backup DBA for 1500 databases across 25 production servers containing 250TB
- Created complex T-SQL stored procedures to manipulate data in real time in large, highly transactional
- Worked with programmers and project managers to create data models for new features
- Created and optimized indexes and queries to ensure peak performance at all times
- Directly responsible for driving Logical and Physical Data Model deliverables while managing deployment of production, development and validation environments for Healthcare Master Data Management system.
- Accurately documented ETL strategy, then captured and documented detailed design specifications for the ETL process.
- Provided valuable input into project plans and schedules, translating business requirements into conceptual, logical and physical data models.
- Delivered regular status updates to project manager and technical manager; consistently completed project elements on time, adhering to all strict project requirements.
- Enforced naming standards and data dictionary for data models.
- Developed data migration and data validation PL/SQL scripts from old system to new system.
- Performed SQL Query performance analysis using Toad Client software for Oracle / DB2 / SQL Server.

**Roles / Responsibilities : Sr. Offshore Lead (Systeme India Pvt Ltd)**

- Focused on helping organizations manage, expand, and optimize their infrastructure, mainly responsible for leading initiatives that establish company standards, service level expectations.
- In-depth experience establishing best practices and guidelines for selecting, developing, and implementing information systems within enterprise.
- Worked closely with project managers, developers, and focus groups to avoid redundancy, minimize expenditures, and improve overall synergy within organization.
- Extensively engaged in Client/Onsite Co-ordination, Communication, Presentations and Expectations Management.
- Prepare project plan with scope, time, resources and published for implementation projects. ☑ Defining, monitoring build activities and DB development processes.
- Producing, Creating & Executing the Backup plan of the releases.
- Offshore build manager has additional responsibility to ensure that Development & Test builds and related processes are agreed upon and followed.
- Leading Oracle DBA team to perform daily database activities for clients located worldwide.
- Interact with business users to understand their requirements to provide them roles based on global, countries or business unit. ☑ Propose database architecture and create ERDs for new initiatives.
- Monitoring the process, quality and execution of deliveries and releases for Global corporate landscape; liaising with various global teams partner and infrastructure management teams, functional teams and other stakeholders for project operations. ☑ Build knowledge repository - ensure that knowledge is validated and updated from time to time when incidents are being handled.
- Ensure deliverables are being delivered within stipulated time frame
- Integrates technical expertise and business understanding to create superior solutions.
- Independently resolves highly complex technical issues within a given technical area.
- Proactively searches for issues and provides solutions to prevent problems from recurring in area of responsibility.
- Performs assigned tasks and duties with a sense of urgency befitting a production technical role.
- Ensure effective communication between onsite and offshore teams for delivery dates and issues resolution

**Job Details :**

- Equifax India : From June 2019 till date, Sr, Technical / Cloud Architect
- Cloud Consulting Firm : From Nov'2016 till May 2019, IT Consultant (Freelancer for Cloud Managed



#### Services)

- Deloitte India Pvt Ltd : From Oct 2011 till Oct'2016, Senior Specialist, Enterprise Architect
- Systeme India Pvt Ltd : From July 2007 till Sept 2011, Senior Tech Lead, Oracle DBA
- Consulting Firms : From 1998 till 2007, Oracle Database Administrator

#### Academics :

- Currently pursuing Masters degree M.Tech in Digital communication from RJPV college, appearing for SEM III
- Completed Master's Degree (PGDSCM) in Supply Chain Management from Symbiosis Institute of Management, from University of Pune in Year Nov '2014 (67%)
- Completed Bachelor of Engineering (Degree- Electronics) from Vivekanand Education Society, Institute of Technology, Chembur, University of Mumbai in Year Jun '1998 (60%)

#### Other Highlights :

##### Trainings undertaken / imparted / major project deliveries:

- Conducted training on Oracle Database, Cloud managed services, Oracle Fusion Middleware Technologies, Content Management, Oracle Databases/ Apps, RAC, ITIL (all tracks), Prince2, AWS Soluton Architect Associate, AWS, GCP all managed services, TOGAF.

##### Major strategies evolved / SLA's / procedures established:

- Created Estimation Template for Implementation of Enterprise Content Management.
- Successfully implemented ITSM, Jira, Aha roadmap process into organisation

##### Major infrastructure related issues / major business analysis / research issues:

- Excellent and instrumental in attending technical / functional challenges and investigating solutions
- A robust component based rule engine validation framework using Nucleus components & architecture design of schedulers in ATG, implementation of automated code review tools
- Designed the office extension with hardware & devices required for the extension, Achievement of real time integrating of Head Office & Manufacturing unit for exchanging data.

#### Professional Enhancements (Trainings & Certifications) :

- Microsoft Azure Architect Technologies ( Expert track – 303 )
- Microsoft Azure Architect Design ( Expert track – 304 )
- Certified TOGAF® 9 The Open Group Architecture Framework
- Amazon Web Service (AWS) Certified Solutions Architect Associate
- Certified Agile® PM Project Management
- Google Cloud Certified – Professional Cloud Architect
- Google Cloud Certified – Professional Data Engineer
- Certified Cobit®5 Foundation
- Certified Prince2® Registered Practitioner
- Certified Prince2® Foundation
- Certified Six Sigma Green Belt
- ITIL Foundation Certificate in IT Service Management
- ITIL Service Design Certificate
- ITIL Service Operation Certificate
- ITIL Service Strategy Certificate
- ITIL Service Transition Certificate
- ITIL Operational Support and Analysis Certificate
- ITIL Managing Across the Lifecycle Certificate
- ITIL Expert Certificate in IT Service Management
- Certified Cloud Computing
- Certified Oracle 10g Database Administrator Certified Professional
- Certified Oracle 10g Database Administrator Certified Associate
- Oracle PL/SQL Developer Certified Associate
- Sun Solaris System Adminsitration 9.0

# AKSHAT KARAMBE

Boston, MA | (857)-269-6259 | [karambe.a@husky.neu.edu](mailto:karambe.a@husky.neu.edu) | [www.linkedin.com/in/akshatkarambe](http://www.linkedin.com/in/akshatkarambe)

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## EDUCATION

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**Northeastern University, Boston, MA** **September 2017 - June 2019**  
*Master of Science Degree - Data Analytics Engineering* **GPA: 4.0**

**Vidyalankar Institute of Technology, Mumbai, MH** **September 2009 - May 2015**  
*Bachelor of Engineering - Biomedical Engineering* **GPA: 3.6**

## TECHNICAL SKILLS

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**Statistical Packages/ Languages:** R, Python, Advanced SQL, SPSS, VBA, PowerShell  
**Cloud & Databases:** Azure, AWS, MS SQL, MySQL, Oracle, PostgreSQL, Toad Data Modeler  
**ETL Tools & Visualization:** SSIS, SSAS, SSRS, Tableau, Power BI, Excel, R Shiny  
**Machine Learning:** Linear Regression, Logistic Regression, LDA, CART, SVM, KNN, Naïve Bayes

## PROFESSIONAL EXPERIENCE

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### Sanofi-Genzyme, Framingham, MA

**Research Associate I** **December 2019 - Current**

- Performed exploratory data analysis & worked with machine learning technique on Single Cell PBMC, Brain and Multimodal Reap-Seq data; Also applied existing algorithms to analyze genomic data quality and reviewed results
- Created reproducible R analysis pipelines with R Markdown and knitr which increase productivity by **20%**

**Data Analyst - Bioinformatics** **August 2018 - December 2018**

- Extracted, manipulated and integrated the data to transform raw data into meaningful, actionable information
- Applied feature scaling and feature extraction techniques and performed cluster analysis on significant PC's
- Automated cell type annotation for the clusters formed which improved time efficiency by **80%**
- Visualized the clusters generated in tSNE to compare the distribution of gene expressions in both RNA and Protein

### Biogen, Cambridge, MA

**Bioinformatics Developer** **September 2019 - November 2019**

- Developed Python application to automate image processing; The application helped to eliminate manual work by 99% by discarding the use of software like MATLAB and ImageJ thus increasing time efficiency by over 80%
- Functional programming in R and Python as per requirements of study or analysis –including shiny dashboards
- Performed mining, cleaning, and analysis of genomic data and metadata; Facilitated collaboration between research, computational biology and scientific computing

### The Indo Medical HealthCare, Mumbai

**Business Data Analyst** **June 2015 - July 2017**

- Conducted data mining, data modeling, statistical analysis, business intelligence, trending, and customer analysis
- Provided data analytics support decisions for initiatives like product development, customer service improvement
- Collected, cleansed, modeled and provided analyses of structured data used for major business initiatives which helped in **20%** reduction in production and **10%** reduction in transportation cost, resulting in a **25%** annual savings
- Completed focus group and BI research that boosted sales in the region by **40%** and acquired **30%** new clients
- Created visually impactful dashboards in Excel and Tableau for data reporting by using pivot tables and VLOOKUP

## ACADEMIC PROJECTS

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### Northeastern University, Boston, MA

**Data Warehouse & Business Intelligence (CMS: Medicare/Medicaid Data)** **February 2019 – April 2019**

- Gathered requirements, developed a star schema data warehouse and deployed it on Azure SQL Database
- Created source-to-target data mapping, data dictionary and data transformation rules in an agile environment
- Extracted, transformed and loaded data (ETL) using SSIS; Implemented sequence containers in SSIS to automate which enhanced the efficiency of the workflow by **25%**; Built multidimensional OLAP cubes using SSAS
- Generated dashboards and stories in Tableau to provide BI insights and showcase KPIs and performance matrix

**Developed and Populated Application Store Database** **February 2018 - April 2018**

- Modeled database in Toad Data Modeler; Defined entities, attribute, keys and constraints to satisfy business rules
- Implemented complex SQL queries, Stored Procedures to extract information and triggers for automation

## Contact

[www.linkedin.com/in/shiralkar](http://www.linkedin.com/in/shiralkar)  
(LinkedIn)

[amazon.com/author/swshiralkar](https://amazon.com/author/swshiralkar)  
(Other)

[sapexperts.wispubs.com/Search](http://sapexperts.wispubs.com/Search)  
(Other)

[www.facebook.com/ITthruEL](http://www.facebook.com/ITthruEL)  
(Other)

## Top Skills

Innovation

New Business Development

Supply Chain

## Publications

A Practical Guide to SAP NetWeaver  
Business Warehouse 7.0

Demand Planning with SAP APO -  
Concepts and Design

Empower Decision Makers with SAP  
Analytics Cloud

SAP NetWeaver BW 7.3 — Practical  
Guide (2nd Edition)

SAP Business Warehouse 7.4 -  
Practical Guide

## Patents

Evaluating Initiatives

Computer Implemented Application  
Portfolio Optimization

PERFORMANCE ASSESSMENT

SYSTEM FOR MANAGING  
ELECTRONIC ASSETS OF A  
SOFTWARE SERVICE DELIVERY  
ORGANIZATION

# Shreekant Shiralkar

Engineer | Author | Inventor | Game-based-approach proponent  
Mumbai, Maharashtra, India

## Summary

A seasoned professional with celebrated outcomes throughout career.

Demonstrated leadership in managing business functions as well as technology consulting by;

Establishing the Public Service business in India for a global professional services company, Launching & growing, the 'LP Gas' business in India for a JV of Shell, AND growing the SAP Technology business for a global leader in IT services, digital, and business solutions. Played pivotal role(s) in acclaimed organizational restructuring and transformational program(s) at Oil Company.

Mentored Authors and published best-selling books on technology. Conceived and realized Innovative solutions including Patents.

Passionate about the application of Game-based-approach & Experiential learning for Organizational Change , Education & Exceptional outcomes.

Specialize in Realizing concepts to value creation stage, Innovation & Transformation, & Building Organization.

Know more <https://www.amazon.in/Shreekant-W-Shiralkar/e/B00UMPZSTQ>

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## Experience

Tata Consultancy Services

8 years 5 months

Portfolio Management

October 2020 - November 2021 (1 year 2 months)

Mumbai, Maharashtra, India



Formulate Strategy for the newly formed unit (Intelligent SAP Operations).  
Conceive & Create Innovative Offerings based on AI/ML technologies. Manage  
Sales & Solutions for the unit with focus on exponential growth.

Head - India Solution Center for SAP

July 2017 - September 2020 (3 years 3 months)

India

Responsible for leading the team of Solution Architects designing solution  
applying SAP technology to business situations. Enable growth of SAP  
technology across Geographies & Industry Verticals. Support technical  
assessment for innovative application of technology.

Lead @ Centre of Excellence - SAP Analytics

July 2013 - June 2017 (4 years)

Mumbai Area, India

Consolidating and growing SAP Analytic service portfolio. Contributed to  
Innovation and Thought leadership by mentoring new authors and creating  
Intellectual Property. Conceived & developed Innovative Solutions & Service  
Offering for business growth.

**SKILLNET & TEKLINK [ & FOUNDER - SKILLNET EDUCATION  
SERVICES]**

ADVISER

May 2012 - June 2013 (1 year 2 months)

Advised niche companies on growth strategies, created a new business unit  
to serve education sector in India. Partnered with a management Institute to  
impart Industry relevant skill.

Delivered a preparatory program for a group of company embarking on ERP  
project.

Authored 2 technical books.

Accenture Services Pvt Ltd

Managing Director

September 2008 - April 2012 (3 years 8 months)

Launch & grow Public Services business in India, Identify strategic revenue  
streams, manage alliances.

Develop new & innovative offerings, deploy delivery excellence in execution.

Tata Consultancy Services Ltd.

Principal Consultant

June 2006 - July 2008 (2 years 2 months)

Grow SAP Technology business thru development of new & innovative service offerings.

Deploy delivery excellence in execution, set-up delivery organizations for strategic clients, Manage alliances with Product companies and other SI's.

Establish new business unit focused on strategic growth from Energy, Resources and Utilities Industries.

Bharat Petroleum Corporation Ltd.

17 years 10 months

Manager-ERP

August 1988 - May 2006 (17 years 10 months)

Key member of many transformation programs including launch of new business for joint venture with Shell and highly acclaimed ERP implementation, followed by highly referenced and benchmark, Business Intelligence & Supply Chain solutions on SAP platform.

Manager Supply Chain Task Force

2005 - 2006 (1 year)

Develop Supply Chain Strategy and realized immediate cost optimization

Bharat Shell Ltd.

Manager - LPG

April 1995 - January 1999 (3 years 10 months)

Launch and develop Shell Gas business in India for the JV between Shell Investments BV & Bharat Petroleum Corporation Ltd.

Tide Water Oil Co. (India) Ltd

Executive

1987 - 1988 (1 year)

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## Education

Malaviya National Institute of Technology Jaipur

BE, Mechanical Engineering · (1981 - 1986)



Miss Hills School

Miss Hills School