# AVIK SARKAR

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## *Professional Summary*

Avik has **16 yrs** in Industry Experience in the field of Application Design, Development, and Maintenance. Avik has worked on different technologies like Python, Spark in Hadoop, AWS Code Commit, Code Deploy, ElastiChace, Glue, Athena, Jira, Jenkins, Docker, UNIX along with C++, Shell script , Core Java.

Avik has **3yrs** experience in Cloud technologies (AWS) and **1yr** experience in Solution Architect.

Skills: AWS Solution Architect, Python, Spark, TeamCity, Jenkins

- Currently employed with Cognizant Technology Solutions as a Manager from September, 2016.
- Previously employed with Cognizant Technology Solutions as a Senior Associate from 2nd March, 2011.
- Previously employed with IBM India Pvt Ltd as a Senior System Engineer from 14th June, 2004 to 25th Feb, 2011.

## *Certification*

AWS Certified Solutions Architect - Associate

Machine Learning by Stanford University

## *Skills Profile*

**Technical**

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| **Operating System** | Amazon Linux, Sun Solaris, HPUX, Windows, AIX |
| **Programming Languages** | Python, Core Java, C++, Shell Scripting, PL/SQL |
| **Database** | Oracle, SQL Server |
| **Tools** | PyCharm, Pandas, Numpy, BOTO3, SQLAlchemy, Redis, AWS Codecommit, Jupiter Notebook(iPython), TeamCity, GIT, SVN, Eclipse, Jenkins, SSMS, |
| **Cloud Technologies** | AWS S3, Elasticache(Redis Clauster), ELB, GLUE, Redshift, AWS DevOps Tool |

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| **Methodology** | Worked as part of Agile team member. Created User stories from Feature. Experience of Scram Meeting, Refinement Meeting, Sprint Retrospective Meeting |

**Functional**

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|---|---|
| **Management and Leadership Skills** | • Project Management & Delivery<br>• Team Management<br>• Resourcing and Forecasting.<br>• Account Relationship Management<br>• Offshore-Onsite Coordination.<br>• Client Relationship |

## *Project Summary and Professional Experience*

*APPLICATION – Data ware House Migration to AWS*

**Client: Ingersoll Rand**

**Application Overview:**

Ingersoll Rand is undergoing a separation and as a result is building a new Data Ingestion Application to populate a new, separate copy of its Enterprise Data Hub (EDH) to support the new entity.

Current System

The current EDH runs in a Cloudera Hadoop environment on an in-house data center along with, and fed by, thousands of Oracle and other application data sets. The nature of this solution allows the vast amount of data housed in the EDH to be dropped and reloaded daily – the current data ingestion process.

Future System

The new EDH is in the AWS Cloud while the application data sets will remain in the data center. Data ingestion will be re-architected to accommodate this change. AWS services will be incorporated into the new Data Ingestion Application where applicable.

Challenges

Hybrid architectures introduce higher data latency due to lower bandwidth between platforms. The increase in data latency will cause traditional load processes to miss their data's Service Level Agreement (SLA). The current drop and reload approach cannot support our future system. This drives our need for a new Data Ingestion Application.

Approach

Analyze and exploit the nature of the underlying data and technologies and challenge existing paradigms to more efficiently and effectively ingest data. Use agile techniques and tools to rapidly design, develop, and automatically test software.

Strategy

Develop a program that will identify and dissect large Data Sets (DS) into smaller Data Frames (DF), extracting only the DFs that contain changes to the data from previous extracts. Extraction will be performed on a continual schedule to satisfy the SLA of each DS and spread the load over a larger timeframe. This program will continually evaluate and update the metadata used to define the size and schedule extracts as necessary.

| **EDH Data Ingestion from On-Prem to AWS** | **Tech lead/Offshore Architect** |
|---|---|

- Platform
  AWS has been chosen as the cloud platform for the new EDH and all its component parts, including this project. In addition, Linux will be used wherever applicable as the OS layer.
- Database
  The EDH will continue to use Cloudera Hadoop; however, configuration will be required unlike the current, prepackaged, data center platform. Oracle will be used to store the inner framework and metadata components for the new Data Ingestion Application. While it will be running on Linux, it will be managed by AWS as an RDS instance making the OS largely irrelevant.

- Storage
  S3 will be the primary storage for exported data files produced by data ingestion processes. Beyond being stored in S3, these data files may be read and queried for comparison to newly updated data extracts.
- Compute
  Programs and scripts developed as part of the new Data Ingestion Application will be executed by AWS services. Most processes will run on EC2 instances while some non-traditional workloads will run on AWS Lambda for scalability.
- Language
  Multiple languages and tools will be used to develop the individual programs and scripts that will comprise the new Data Ingestion Application. SQL and Shell scripting along with a combination of Python and/or other related scripting languages. AWS SDKs and APIs will be used to standardize the development effort.

**Responsibilities Held**

- Work with AWS Architect team to Define implementation of Data feed from On-Prem Data Center. This involved implementation of Meta Data store. Data Pipeline setup using python.
- Imported data to Data Lake (S3) on Data frames and performed transformation and actions on DATAFRAME
- Developed Redis jobs to Ingest data.
- Lead offshore development and testing team.
- Coordinate with Customer on daily basis.
- Understand requirement and explain it to team.
- Ingested data need to be tested in Hive SQL using HUE.
- Develop architecture of future Data Analytics framework using Pyspark and Snowflake.

## *APPLICATION – Investment Banking Solution*

### Client: MetLife

### Application Overview:

Application provides a simple solution of a Complex problem of Allocation of amount between all Investors. Application tries to calculate Allocation % for all potential inverters, where chances of acceptance of the offer high. Also the allocation methodologies keep track of all Investors acceptance statics and provide reports.

| **Investment Banking Solution Services** | **Project lead** |
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**Description:**

Application Implementation process involves

- Define Architecture in Azure
- DB Design and Creation.
- UI design
- Performance monitoring

**Responsibilities Held**

- Work with Azure Architect team to Define implementation of Data feed from upstream application. This involved configuring Data factory to handle data transformation.
- Developing Spark programs using DATAFRAME
- Imported data from Data Lake on Spark Data frames and performed transformation and actions on DATAFRAME and finally loaded in PAAS SQL Server.
- Developed Spark jobs to PARSE JSON data
- Db design for SQL Server.

***APPLICATION – Front Office Solution Services***

**Client: Credit Suisse**

**Application Overview:**

FrontNet is an integration of more than thirty applications, which caters to client information. This platform is considered the backbone for Customer Relationship Management i.e. CRM, extensively used by the relationship managers. Different type of changes happen over four release cycles which needs high level as well as low level understanding for creating as well as implementing CR's.

The project aimed to develop batch jobs running in UNIX environment and scheduled by Control-M. These Batches process End of Day and updates RM activities in Front Office to Back end applications Batches run PL/SQL to perform all data migration activities.

Dev team was also involved in different DevOps activities. The code base as initially migrated to TeamCity and then Odyssey under Jenkins.

| **Front Office Solution Services** | **Project lead** |
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**Description:**

Worked in Zurich as onsite Coordinator initially. Later moved to Kolkata as leading offshore Team.

During construction, we need to address performance aspects of the high volume data migration activities from Legacy system to Oracle DB. In addition, post-production Oracle DB performance issues needs to be addressed and handled. Data Warehouse feed development and implementation along with DB development. Apart from this, there are requirements where we need to work on Oracle PL/SQL development for monthly reporting activities. Apart from this there are requirements where we need to work on shell script development to run the PL/SQL jobs for monthly reporting activities

**Responsibilities Held**

- Project Delivery
- Code review.
- Defect tracking.
- Resourcing
- Forecasting

***APPLICATION –PreP & PreP Demand***

## Client: Pizza Hut

## Application Overview:

**Prep**

All company units and many Franchise units of the company keep track of prep tasks requirements via the Prep application. The Prep application forecasts the quantity required for various prep tasks for future days. It also forecasts the amount of the finished products that need to be ready for revenue (R4R) in a time range (configurable).

The Prep application uses historical sales quantity and guest check quantity for historical weeks and then uses forecasted guest check values to forecast Prep and R4R quantity for future days. The application also generates Prep, R4R, prep variance and historical sales quantity reports at the prep task level.

The Prep application allows the user to enter carryover amounts for prep tasks and the user can change the quantity needed for any prep task if required (this excludes parent prep tasks)

**Prep Demand**

Prep Demand is the application which gives users the ability to track/modify current day prep requirements. It displays the amount available, sold quantity, future demand, variance, and estimated time when current prep stock will get depleted. This gives store manager an insight into where they stand with the prep tasks for the current day. The store manager can increase/decrease the current day prep quantities depending on the requirements for the prep tasks listed in the Prep Demand screen.

| **PreP** | **Team lead** |
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**Description:**

Leading a team of 5 developers to implement Prep course correction.

**Responsibilities Held**

- Requirement Analysis of changes
- Project Planning.
- Implemented the requirement with Team-members
- Conducted Code Review for individual team member
- Reviewed unit test plan (UTP) and modified it according to Business changes.
- Reviewed System test plan and modified it according to Business changes.
- Execution of System testing.

***APPLICATION – Profit V6***

## Client: Papa Johns

## Application Overview:

Profit V6 is legacy POS system of the Company which currently running in their stores in US. This POS system is written in C++ (both Front end and Back end) and runs on Postgress DB server. The current system doesn't support touch screen functionality which is now a days common in POS system. PJI is implementing a hew POS system FOCUS in Java (As in Fort End) which will be enhanced version of Profit V6.

| **Profit V6** | **Team lead** |
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**Description:**

Worked with a team of 3 people to analyze and debug of C++ code to find some new bugs, to prepare documents of current functionalities and business logic, to identify integration point of Java front end to C++ backend. All these documents will be used to identify no of bug need to be fix, writing Test cases for the new system etc.

**Responsibilities Held**

- Code Analysis and debug.
- Document in client given format.

## *APPLICATION – Payment Gateway Product*

## Client: ACI Worldwide, Payment Gateway Service Provider for POS and ATM

## Application Overview:

Base24-EPS is an integrated payment engine that acquires, authenticates, switches, and authorizes financial transactions across multiple channels. It is the next-generation world-class payments platform.

This Product provides a full range of functionality to support payments – both traditional card, ATM, and bank branch transactions that institutions manage today, as well as the transactions of the future, such as mobile commerce and internet banking.

This Product UI is implemented with Java and Application is implemented with C++. It has capability to run in multiple environments like: IBM z-os, AIX, Sun Solaris, HP-NSK with DB support like DB2.

| **PROSA** | **Team lead** |
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**Description:**

Worked with a team of developers to implement technically complex CSMs (Customer Specified Requirement) with the help of HLD.

**Responsibilities Held**

- Requirement Analysis of changes
- Implemented the CSMs with Team-members

- Conducted Code Review for individual team member
- Reviewed unit test plan (UTP) and modified it according to Business changes.

| **2013 Q1 Retrofit for Partecis** | **Team Member** |
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Worked as a part of Base24-EPS Dev team in Mandate Retrofit implementations. The role involves:

- Retrofit Mandate Code in Partecis stream.
- UT execution of the changes

| **BASE24-eps 11.1 SIT** | **Team Member** |
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Worked as a part of Base24-EPS team in 11.1 SIT WO (12) 050513-02 (TS) BASE24 ISO Host 87 Interface Enhancements. The role involves:

- Configuring B24EPS interface with B24Classic interface in NSKi and Z-OS environment.
- Executing Test Cases form Test Specification.
- Tracking defect in Salesforce.

| **Cedicam Banknet SIT** | **Team Member** |
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Banknet does not send acquirer country code in online messages, but this is required by E-RSB interface. Rather Banknet provides the country code data in a refresh file. Thus for successful implementation of Cedicam E-RSB gateway to Banknet an enhancement needs to be done where Banknet would process the refresh file and store the country code data in a data-source. With every inbound transaction, Banknet would read the data-source OLTP and populate the country code based on the acquirer of the transaction.

The role involves:

- Executing Test Cases form Test Specification.
- Tracking defect in Salesforce.

***APPLICATION –Global Customer Service System***

**Client: Maersk Line**

**Application Overview:**

The system is also called an Order Handling System. The implementation of GCSS supports and enables the vision of Container Business: To create opportunities in global commerce. GCSS is a key element in offering second-to-none transportation solutions. It offers integration, automation, transparency and exceptions management.

GCSS covers the full lifecycle of transport (shipment) of goods, from when the customer orders the transport of goods until they are

delivered at the destination. The system contains an activity plan feature that helps users to follow Maersk Standard Operating Procedures. Additionally the system generates all required outputs in the form of prints, faxes and e-mails.

Technically GCSS is divided into two parts:

- **GCSS Frontend:**

  This is the GUI for GCSS. The users interact with GCSS using Frontend. After validation, it passes all the input data to GCSS Backend for further processing.

  GCSS Frontend was developed in VC++. Frontend-Backend communication is performed thru a GCSS own data structure CBC.

- **GCSS Backend** –

  GCSS Backend consists of source codes implementing Business Logic and Database. It processes the input request from Frontend, performs database operation and sends back proper response to Frontend.

  GCSS Backend is maintained by Tuxedo in UNIX environment (Sun Solaris 10). In GCSS, Binaries are called Tuxedo Server. GCSS Backend runs on multiple Tuxedo Servers. The Backend has multiple interfaces with other applications thru MQ.

  GCSS Backend was developed in C++. It interacts with database thru Pro*C. Oracle 9i is used as Database.

  Rational Clear Case is used as a SCM Tool for both Frontend and Backend.

  IBM MQ series is used to communicate with other Application Interface.

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| **GCSS Release 12.0**<br>**GCSS Release 13.0**<br>**GCSS Release 14.0** | **Application Developer** |

**Description:**

Worked on some simple CRs and also part of some complex changes. Implemented different Features in the Application with the help of Macro Design and got expertise on that Features Area.

**Responsibilities Held**

- Analysis of changes
- Implemented the corrections according to requirements
- Developed and conducted unit testing

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| **GCSS Release 16.5**<br>**GCSS Release 17.0**<br>**GCSS Release 18.0**<br>**GCSS Release 19.0**<br>**GCSS Release 20.0**<br>**GCSS Release 21.0**<br>**GCSS Release 22.0** | **Senior Developer** |

**Description:**

Worked together with designer to implement Macro Design (Technical Design) from the Feature Design document (Business specific Design). And headed a team of developers to implement technically complex CRs with the help of Macro Design.

Worked with Testers to review Test Scripts of corresponding Feature Area.

Started to work in GCSS Frontend on Visual Studio .Net environment.

**Responsibilities Held**

- Requirement Analysis of changes
- Implemented Macro Design
- Implemented the CRs with Team-members
- Conducted Code Review for individual team member
- Reviewed unit test scripts (TPP) and modified it according to Business changes.

## *APPLICATION – CSCS*

### Client: Maersk Line

### APPLICATION Overview:

GCSS Contingency (CSCS) is an extension to the GCSS Export System. The essential functionality of the contingency system is to replicate the GCSS Export database. In case of the GCSS Export Production database being unavailable for any reason, the GCSS Export Production application functionality will then be available through usage of the replicated GCSS data on the contingency system.

In order to reduce the dependency on GCSS the idea is to create a Contingency Solution with a subset of GCSS functionality as a separate application and database. This application will be used as fall-back if GCSS become unavailable for a longer period of time.

CSCS is basically a limited copy of GCSS. The copy is modified to fit the requirements for Contingency. Functionality has been added to receive shipment and transport document information from GCSS and send the modified data back when GCSS is ready to be used again. These two areas have been named GCSSFeed and CSCSRecovery respectively.

| **CSCS Baseline** | **Team Member** |
|---|---|

**Description:**

CSCS application mainly got Three Sections: Feed, Online and Recovery.

I was working in Feed Section. This project is to modify each section to synchronize with each other and to enable all GCSS features which is required in Contingency.

Feed Section works to get GCSS data properly, analyze them and put them properly in CSCS DB.

**Responsibilities Held**

- Analysis of changes.
- Implemented the corrections according to requirements.
- Developed and conducted unit testing.

## *APPLICATION – BLISS (Business Local Integrated Support System)*

**Client: AT&T**

**APPLICATION Overview:**

ADL application I was working provides automated ordering and provisioning capabilities along with associated support functions for local service offers.

It provides a "rules" or "table" based environment (i.e. administration front ends and relational tables) to support local service market entry specific business rules, as well as generic operations, administration, and maintenance requirements.

It provides an automated workflow capability to allow some level of configuration of work center order flows, status and tracking flows, metric recording and reporting.

It manages and provides access to the following logical databases of record:

Local Service Customer Order database including new, in-progress, canceled, and completed Customer Orders;

Supplier Order database containing all supplier orders decomposed from CO's; and Inventory database containing a current view.

It was developed using standard AT&T internal technologies, proven AT&T internal architecture, and third party tools including Inconcert Workflow, Oracle RDBMS system, Connect:DIRECT, CSF Datacomplete etc.

| **System Security Government Data Access** | **Developer** |
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**Description:**

Project for Security of US Government data in BLISS. This project identifies data in inventory, which is related to US Government and restrict them to be open to unauthorized user.

**Responsibilities Held**

- Analysis of changes.
- Implemented the corrections according to requirements.
- Developed and conducted unit testing.

**Environment:** HP-UX with C++, Oracle 9i, TIBCO InConcert.

| **Application Access Control** | **Developer** |
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**Description:**

Project is the second phase of System Security Government Data Acc. It enhances the features. It helps System to be more secured.

**Responsibilities Held**

- Analysis of changes.
- Completed Design Document.
- Implemented the corrections according to requirements.
- Developed and conducted unit testing.

**Environment:** HP-UX with C++, Oracle 9i, TIBCO InConcert.

| **Voice LD and Local Physical Inventory Retrieval** | **Developer** |
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**Description:**

Project is a part of the Inventory Lookup project.

Inventory Lookup provides AT&T the ability to lookup Customers and their associated Inventory and also to initiate the retrieval of Inventory process.

The user can initiate the Customer and Inventory Lookup process from the accounts screen. This process is actually a series of queries that are run by the user to gather account and inventory information from the AT&T legacy systems.

Our Application is one such legacy system which maintains an inventory of ADL Customers and as a part of this project system will be providing the inventory feed to another repository system where all the inventory data are stored from where AT&T user will be retrieving the data.

**Responsibilities Held**

- Analysis of changes and designed accordingly.
- Implemented the corrections according to requirements.
- Developed and conducted unit testing.

**Environment:** HP-UX with C++, Oracle 9i, TIBCO InConcert.

| **Eliminate HRID Dependency** | **Developer** |
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**Description:**

Human Resource (HR) system that generates the HRID for the Company Employee is scheduled to be retired 1/1/2007, as the logic will be absorbed into the (SBC) HR system. As our application is fully dependent on HRID of user, it replaces all HRID to New Id system.

**Responsibilities Held**

- Analysis of changes.
- Implemented the corrections according to requirements.
- Developed and conducted unit testing.

**Environment:** HP-UX with C++, Oracle 9i, TIBCO InConcert.

| **Software Currency** | **Developer** |
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**Description:** This Project upgrades Software. Under this

1) Orcle8i will be upgraded to Oracle9i
2) Inconcert will be upgraded
3) Tibrv will be upgraded

**Responsibilities Held**

- Analysis of changes.
- Implemented the new environments (Server Configuration) with upgraded version of Third Party Tools.

- Completed code modification and conducted unit testing on the new platform.

**Environment:** HP-UX with C++, Oracle 9i, InConcert.

## *Education*

| *Degree* | *Board/University* | *Year of Passing* | *Marks Obtained* |
|---|---|---|---|
| B.E. | University of Burdwan | 2003 | 73.6% |
| Higher Secondary | W.B.C.H.S.E. | 1998 | 72.6% |
| Madhyamik | W.B.B.S.E. | 1996 | 74.11% |

## *Personal Details*

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Marital Status: Married
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Signature:
Date: