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Weblinks: 1. <https://rpubs.com/biswajitghoshal>; 2. [BiswajitGhoshal \(Biswajit Ghoshal\) · GitHub](https://BiswajitGhoshal (Biswajit Ghoshal) · GitHub)

3. Blog: <https://biswajitghoshal1.wixsite.com/genai-for-public-dat/post/using-gemini-llm-for-rag-and-automated-data-query-and-visualization>

Profile:

A result-oriented software professional with 24 years of experience with CMMI Level 5 MNCs and Start-up companies. I have developed ML models for Clustering, Classification, Regression, AI (Neural Networks) and Text Analytics (NLP, ChatGPT and Google's Gemini Prompt Engineering). Developed RAG and automated secondary research utilities. I have extensive experience in estimation, financial budgeting, tracking and control. I have strong experience of forecasting and optimization techniques. I have designed and delivered AI-enabled applications in Healthcare, Telecom and Supply Chain Management areas (Retail, Shipping and Distribution) domains. I have led application development teams working on different technology areas in global delivery framework. With hands-on technical background, I have worked on Python, R, SAS, Java, C/C++ with RDBMS, columnar (InfoBright, Vertica) and document (mongoDB) databases. I take active part in leading GenAI idea and product-development activities for company-wide initiatives like Wincubate and Intrapreneur. Mentored writing whitepaper on Topic mining and trending, that won 1st prize.

I have led multiple SDLC projects, in collaboration with 3rd party vendors using both waterfall and agile methodologies. A hands-on problem solver with excellent communication skills and exceptional team-building, analysis, design and development skills, have good understanding of quality process models. Have played instrumental on-site customer-facing roles that resulted in developing Intellectual-property rights at client-offices in the UK, USA, France, Bangladesh and China.

Courses & Certifications:

1. **Advanced Management Program in Business Analytics** 1.5 years' course from **Indian School of Business (ISB)**, Hyderabad
2. **Machine Learning Specialist** (MOOC on Classification, Clustering, Regression, MapReduce, Text Analytics) from University of Washington through Coursera
3. Hadoop Foundations (2017); "Deep Learning with TensorFlow" (2019) from IBM's Cognitive Class
4. Base, Advanced and SAS Analytics with SAS Enterprise Guide - from NIVT
5. **ITIL v3** Foundation in Service Management (Exin)
6. **Project Management Professional (PMP)**, Project Management Institute (PMI)
7. **Post Graduate Diploma in Project Management**, Institute of Chartered Financial Analysts of India University, India
8. **Post Graduate Diploma** in Operations and Programming of Automatic Data Processing Equipment, **Indian Statistical Institute**, Calcutta, India
9. **B.Sc., Mathematics (Honors)**: **Calcutta University**, India

IT Skills:

Solution Architecture; Business Analytics; Consultancy, Estimation; Project Management.

Platform/OS: Azure-Databricks, AWS, WIN NT/2K/XP, HP-UX 11, HDFS, VAX/VMS 7.1.

Languages: Prompt Engineering, Python (openai, langchain, scikit-learn, numpy, matplotlib, pandas, Folium, Flask, TensorFlow, SQLite etc), Spark, PIG, Hive, R (Rstudio, ggplot2, knitr, Shiny, RevoScaleR, igraph etc), Java, C, C++, Octave.

DBMS: Oracle, MySQL, SQL-server, Vertica, InfoBright, MongoDB (NoSQL), CosmosDB.

Web Technologies: GenAI LLMs - ChatGPT, Gemini; JSP, Servlet, Oracle 9iAS, Apache 2.0, Tomcat.

IDE / Tools: Jupyter (Anaconda), R Studio, Databricks, VScode, SAS EG, Octave, Hadoop, Uniface, Excel Miner, GAMS, RPM, TOAD, Visio, MS-Project, Remedy, ManageNow, Engage, MLOps, HPSM.

Version Controller: Cloud repository – git-hub/bash, MS Visual Source Safe, WinCVS, Rational ClearCase; CMS (Code Management System) and CDD (Common Data Dictionary) on OVMS.

Methodologies: QMS (CMM Level V, ISO: 9001:2000), SDLC – Waterfall, UML, RUP, OOP, OOAD.

Career history:

a. 01/2021: WNS Global Services India (Gurgaon), Group Manager, Data Science

Leading a team of data scientists and cloud engineers developing multiple data science applications and analytical reports for a leading global **healthcare** (pharmaceutical and consumer product) manufacturer. I developed applications that use Text Mining and Machine Learning. Estimate efforts, help commissioning cloud components and developing the solution, track and report progress, etc. Playing instrumental role in developing NLP and GenAI capabilities. Projects managed are as follows:

- i. **Text-analytics (NLP)** based and applications: Delivered custom listening priority based analysis and report generation and dashboarding. Developed back-end data-pipeline and front-end applications for text-search in a pool of documents; thematic-search tool of Medical information for Healthcare professionals (HCP); Social media data analytics (e.g. sentiment, emotion, concerns, influence-level) on various owned and competitor products; document-clustering utilities for leaders of medical representatives. The applications are on Azure with NodeJS UI interacting with the AI-engine developed using Python over Flask framework. Developed utilities through prompt engineering in GenAI and QA-chatbot, topic-wise sentiment detection, text-classification, topic mining and clustering utilities using Langchain framework with openai (prompting ChatGPT). Developed RAG based applications and automated utilities for querying databases and code generation for visualizations using Gemini LLM. Developed Workflow jobs for implementing data-pipeline.
- ii. Developed a data analysis platform, **AIWB (AI Workbench)** for finding insights from data collected from patients on oral-health in collaboration with a European university, which will be used for consumer-products. The product provides tools for implementing data pipeline, stewardship, analysis and automation of analysis, English language-querying by business-users and is developed on Azure Databricks platform. The Analytical tools are built using R and Python on Azure.

b. 09/2019 – 05/2020: AIngenious Consulting (ex-713 Technologies), Principal Consultant

713 Technologies is a start-up company developing chatbots, serving US-based clients (**University and Retail**). It develops, customizes and deploys AI based NLP chatbot product. As solution architect, I designed and developed the core AI model that predicts intent of a user-given utterance and suggests next set of question/s for the chatbot.

Worked with Karmick Solutions Pvt Ltd. And DCC India as a freelancer Analytics Consultant for developing and deploying forecasting model for demands, stock and receipts using Python with Flask and MySQL on GCP and visualization and ETL project, using Tableau, Python and OracleDB, on short term project basis.

c. 05/2017 – 08/2019: Worked as a freelancer data science consultant. Completed AMPBA course from ISB. Also took part in various machine learning competitions.

Ranked 68th (out of 3448 participants) in QuantumBlack hackathon on **data summarization** (Public leaderboard URL: <https://datahack.analyticsvidhya.com/contest/quantomblack-online-hackathon/lb>)

Ranked 135th (out of 3740 participants) in **loan-default prediction** ML competition (Public leaderboard URL: https://datahack.analyticsvidhya.com/contest/india-ml-hiring-hackathon-2019/pvt_lb)

Ranked 321st (out of 2083 participants) using OpenCV, in an **AI computer vision hackathon for Ship-image classification** by Analytics Vidhya, using CNN, RNN and LSTM (Public leaderboard URL: https://datahack.analyticsvidhya.com/contest/game-of-deep-learning/pvt_lb)

d. 08/2015 – 05/2017: Ideation Technology Solutions, Technical Director

Ideation is a small start-up company working in Analytics domain. As **account manager** (reporting to the CEO) with P&L responsibility, I managed delivery of a 100% offshored, 24-member team of developers and team-leaders using SAS (base, DI, DM), Tableau and .Net-framework to develop a multi-tenant MVP (Minimum Viable Product) Theon – a US **Healthcare** Analytics product for Geneia (a subsidiary of CBC), which caters to all the health-care stakeholders like, provider, payer and patient. I ensure that the overall performance of the team exceed client's expectation by setting governance processes and structure in consultation with the client's managers and other 3rd party managers.

Developed Ideal **Retail** MVP (a BI-analytics SAAS product, hosted on AWS) with about 150 KPIs, dashboards (with charts and predictions), reports for the multi-store retail organizations.

e. 05/2010 – 04/2014: IBM India Pvt. Ltd., Project Manager

Managed transition from development team to offshore support team for a **Telecom** BI project (Vodafone Netherlands). Used tools like Engage, Remedy, Sharepoint, Service Manager, Quality Center, RPM, MS-Project (MPP) and RTC for implementing CI/ CD pipeline. Did release management during steady-state and reported on "7 keys of success". Worked as IBM's onsite single point of contact and managed end to end projects starting from preparation of investment proposal, solution architecting, raising RFPs, approval by various stakeholders to initiation, planning, execution, financial and progress monitoring and closure. Managed stage-gates, go/no-go meetings, production deployment, hyper-care and steady-state phases for new SI applications acting as client's PM for National Grid (**onsite at UK**). Set-up end to end offshore Application Management Services for large **retail, telecom and Utility** clients, managed delivery, program governance and quality audits. Provided Vendor Management Consultancy for Qantas (an Australian airlines company) analyzing performance of its vendors for its RFS. Contributed in developing licensable Project Management Methodology (WWPMM) of IBM and implementing Lean in the program.

f. 07/2005 – 04/2010: IBM India Pvt. Ltd., Associate Project Manager

Transformed Change Management into a service-oriented ticket-based practice on Mainframe, AS400 and NT and also System Assurance (Testing) for offshore Mainframe, AS400 and NT applications for implementing CI/CD (continuous improvement and continuous deployment) for AmerisourceBergen, 3rd largest **drug-distribution** company. Managed delivery of a 10-member team. Used ManageNow, HP-QC, Websphere, RPM. Acquired PMP, ITIL and PGDPM certifications. Worked as a Business Analyst and on-site coordinator (**in Beijing, China**) for .Net and SQL server based new application development and SI project for Maersk Line (2nd largest **shipping** company). As the IBMer at client's office, I was the single point of contact for both the offshore delivery team and the client's managers. For sizing and effort estimation I used Use Case model and Function Points. Prepared and managed Business Continuity Plans and Disaster Recovery plans. Managed account level audits, implemented Lean, setup project-teams as per the client's demand pipeline, resourcing and billing of large account (130 member) as part of Account Mgmt Team of CMA CGM (largest **shipping** company) project.

g. 10/1999 - 06/2005: Atos Origin (Sema Group), Senior Software Engineer

Developed application for Investicel product of SGCM using Uniface, Cobol, Oracle RDBMS in Paris (onsite France). Returning to India, developed and lead a team of Java programmers. Did Business Analysis and designed Sales Administration System, an **SCM** application interfacing with **telecom** billing system (BSCS) in **Dhaka**, Bangladesh (onsite). This was partly COTS and partly SI project. Estimated and evaluated software, budgeted, planned and resourced multiple projects. Customized Payment-module of BSCS for a COTS project. Used JBuilder for JSP, Servlets on MVC architecture (struts framework) on 9iAS application server, HP-UX, C/C++ and Oracle RDBMS. Participated in ISO 2000 and CMM level 4 certification processes.

h. 04/1997 - 09/1999: Digital Globalsoft (HP, Compaq), India, IT Specialist

Joined as a consultant for remote support of IS applications on VMS Cobol, C, RDBMS, DEC Scheduler and Purveyor Web Server. Received spot recognition award for solving a production problem overnight. Went to USA (onsite) for service transition and knowledge transfer from US resources to offshore for a **Data Warehousing** application and on returning to India, trained the team. Developed many customized complex reports from the data warehouse as per request of the user groups. Participated in ISO 2000 certification process.

i. 08/1996 – 04/1997: ITC Limited, Kolkata, India; IS Trainee

Maintenance of **Retail** MIS applications for Sales DB, Forecasting and Budgeting in VAX and NT platforms, using Cobol, C, Oracle RDBMS, dBase, MS Access and Excel.