

# Premangshu Mitra

Principal Data Scientist

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- An accomplished and forward-thinking Principal Solutions Architect offering an 18-year trajectory of success in Design Thinking, Strategic Project Management, and Innovation Projects in the areas of AI/Data Science.
- Highly adept in CX and Data Analytics across sectors including Marketing, Manufacturing, BFS & Insurance areas, identifying customer pain points and solutions. Worked in HR and People Analytics projects.
- Demonstrable competence in Statistical Data Analysis, Machine Learning (ML) algorithms, Natural Language Processing (NLP), and Computer Vision.
- Proven leadership in crafting data-intensive solution architectures and guiding data engineering, ML engineering teams, deploying AI/ML models, in On-Premises, AWS and Azure cloud, and architecting Mlops for end-to-end workflow deployment.
- Core programming experience in Python, R, SAS based application development.

## Certifications

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- AWS Certified Cloud Practitioner CLF-C01, AWS Architect Certified Associate
- Deep Learning certified by DeepLearning.AI
- Base SAS certified A00-211
- ITIL Foundation 4 certified
- Azure AZ-900, AWS DP-100 Certified
- AWS Machine Learning Specialty, Snowflake and Databricks

## Skills

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**Algorithm Development:** Proficient in formulating and implementing machine learning algorithms for diverse applications.

**Programming Languages:** Highly skilled in Python, R, SAS, SQL, and Git, with practical experience in test-driven development.

**Data Visualization:** Proficient in leveraging PowerBI for effective data visualization and insights presentation.

**Cloud Platforms:** Extensive experience in deploying ML models to AWS and Azure.

**Solution Architecture:** Expert in designing data-intensive solution architectures for comprehensive data workflows. Adept at building automated CI/CD pipelines for optimized development and deployment processes.

**Statistical Data Analysis:** Highly capable of performing statistical analysis on large datasets.

**NLP and Computer Vision:** Specialized in NLP techniques and computer vision applications using Large Language Modeling, pretrained models, and Vision Transformer models.

**Communication:** Exceptional presentation and communication skills, proficient at elucidating complex concepts to non-technical stakeholders.

**Leadership:** Robust leadership skills with a track record in team management and project coordination.

## Academics

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2007-01 - 2009-07      **Post Graduate Diploma in Business Administration: Finance**  
*Symbiosis - Pune*

2000-01 - 2003-01      **Bachelor of Science: Computer Science, Statistics and Mathematics**  
*Bangalore University, Acharya Institute of Management Sciences - Bangalore*

## Projects

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**a) Applied Materials SPD Metrology - Wafer defect detection using YOLO/SSD**

- Architected and led a 7-member team to develop an end-to-end solution using state-of-the-art YOLOV8 and SSD for wafer defect detection.
- Developed anomaly detection logic for identifying production anomalies.

**b) Step Cycle Time Prediction for Applied Materials**

- Worked on refactoring Python Code and leveraged LGBM classification model for predicting step cycle times in semiconductor manufacturing processes.
- Incorporated Test-Driven Development using Python for comprehensive CI/CD onto Jenkins Jabba.

**c) Content based Recommender System for Football Association (Thefa) & Ebay USA**

- Architected & developed content and collaborative filtering-based recommender systems.
- Developed a predictive analytics product for sales forecasting and inventory optimization.

**e) Market Basket Analysis, Customer Journey Mapping and attribution Analytics, RFM Modeling, MM models for Stater Bros**

- Enhanced marketing strategies by assessing the impact of various marketing channels on sales. Achieved a 78% improvement in marketing ROI through strategic budget reallocation.

**f) Consumer Buying patterns and Sentiment Analysis of a CPG company**

- Developed ML models for predicting consumer buying patterns using MBA and RFM models.
- Implemented NLP techniques using pretrained deep learning models for analyzing consumer reviews and feedback.

## Work History

2022-12 - Current

### **Principal Data Scientist – Generative AI Projects, Hyper Personalization, AI Solutions Lab**

*Nihilent Technologies, Pune, Bangalore*

- Spearheaded a variety of R&D initiatives aimed at optimizing AI, ML, NLP, GPT, and computer vision models, resulting in enhanced problem-solving capabilities and the creation of pioneering algorithms.
- As a strategic leader, guided a team of data scientists, fostering a collaborative environment that ensured the successful completion of project milestones within predetermined timelines.
- Expertly harnessed statistical modeling techniques to dissect massive datasets, uncover patterns, and generate actionable insights, driving data-driven decision making.
- Designed and deployed sophisticated predictive models and algorithms that significantly boosted the efficacy of data science, AI, NLP, and computer vision systems.
- Fostered cross-functional collaboration with fellow data scientists, software engineers, and product managers to conceive and execute innovative solutions for complex challenges.
- Actively engaged with clients and stakeholders, translating their requirements into robust solutions, and fostering strong relationships based on mutual trust and satisfaction.
- Cultivated a culture of innovation by staying abreast of the latest advancements in NLP, GPT, and computer vision, leveraging new tools and techniques to continuously improve model and algorithm performance.

2016-11 - 2022-12

### **Lead Data Scientist / Senior Architect – Manufacturing & SCM**

*Cognizant Technology Solutions, Bangalore*

- Developed architecture & application code for data engineering, machine learning predictive modeling, and analytics using Python and R.

- Demonstrated expertise in understanding the client's data landscape and facilitating effective communication between key stakeholders to identify machine learning opportunities.
- Created comprehensive solution architecture documents and collaborated with key stakeholders to review and refine them.
- Developed action plans to mitigate risks in decision-making processes, ensuring increased business opportunities by leveraging data science and ML into data products.
- Utilized Python, Azure Machine Learning Studio, and Azure cloud services to analyze data, identify data anomalies, and provide clients with prescriptive measures and opportunities for improvement.
- Built classification models using various ML/DL frameworks to achieve business objectives, employing best practices of continuous integration and deployment.
- Implemented Mlops practices to automate the end-to-end machine learning workflow, from data ingestion to deployment, ensuring efficiency and scalability.
- Developed algorithms leveraging NLP and deep learning techniques for object detection and segmentation tasks.
- Provided training and mentoring to the business unit group on deep learning principles and applications.
- Led the adoption of Mlops practices, reducing the time-to-deployment for machine learning models by 50% and enhancing overall operational efficiency.

**2015-12 - 2016-10**

## **Lead Consultant – Marketing Analytics**

*Infosys , Bangalore*

- Defined and developed a comprehensive program for metrics creation, data collection, modeling, and reporting to effectively measure and optimize operational performance of client projects.
- Collaborated cross-functionally with teams to define problem statements, collect relevant data, build analytical models, and provide strategic recommendations.
- Led the development and implementation of a data aggregation and automated machine learning program, supporting the optimization of manufacturing processes for Philips inject molded products.
- Actively participated in strategic initiatives focused on incubating and developing innovative AI and data science solutions and accelerators for the organization.
- Worked closely with a team of analysts, data scientists, and strategy managers to drive tactical initiatives and deliver impactful results.
- Proactively engaged in client interactions to deeply understand their business challenges and requirements, providing machine learning solutions

tailored to their specific needs.

- Regularly communicated development status and plans to senior leadership, ensuring transparency and alignment across the organization.
- Provided strong leadership and mentorship to other members of the team, fostering their growth and professional development.

**2015-03 - 2015-11**

### **Deputy Manager – BFSI Analytics**

*WNS , Bangalore*

- Furnish leadership team and client with insights, analytics, reports and recommendations across insurance products of Top Insurance company in Australia
- Developed statistical algorithms based on deep-dive statistical analysis and predictive data modeling that were used to deepen relationships, strengthen longevity and personalize interactions with client
- Analyzed and processed complex data sets using advanced querying on Teradata, visualization and analytics tools using R and SAS
- Identified, measured and recommended improvement strategies for KPIs across all business areas
- Achieved 85% renewal rate (15% above goal) in 2015

**2014-02 - 2015-03**

### **Project Leader – HR, Comp & Benefits Analytics**

*Mercer Consulting, Bangalore*

- Support development of Data Science Team - Compensation and Benefits analytics through mentoring and development of junior members of team
- Lead a team of 7 in C&B analytical projects for APAC and TRS Projects with continuous client & stakeholder engagement
- Monitoring team members on deliverables and manage priorities and workload of data scientists.
- Developed predictive analytics models on Talent acquisition, Performance management analytics, Workforce planning applications, C&B analysis.
- Mentoring and coaching team members on SAS and R
- Track all activities against plan and provide summary status to all stakeholders
- Observed progress of each project, examined risks and coordinated contingency plans
- Track and make suggestions for ways to improve upon KPIs (Key Performance Indicators)
- Performed large-scale data analysis and develop effective statistical models for segmentation, classification, optimization, time series, etc.

**2011-10 - 2013-10**

### **Assistant Manager – Media Research and Analytics**

*Genpact Analytics, Bangalore*

- Developed predictive models on Advertisement Sales data for top media

client

- Leveraged statistical and estimation techniques using predictive methods of Regression and Non Linear Regression
- Developed churn models and Lifetime value of client customer base
- Decile Analysis and projection of YoY growth, trends and enabling forecasting techniques to predict sales
- Mentored team members on SAS and R related coding issues
- Conducted weekly staff meetings to motivate staff members, address concerns and questions, plan improvements, and evaluate progress of team members towards set goals
- Work with team members to identify key performance metrics and benchmarks related to user behavior, user segmentation, and user retention
- Planned team-building exercises to increase team performance and morale

**2006-08 - 2011-10**

### **Senior Analyst – IT MICS Reporting and Analytics**

*HSBC Electronic Data Processing India Limited, Kolkata*

- Managing IT Finance related queries, Capacity Plans for HSBC Data Centers, creation of MI and chargeback reports using Excel, Tableau and reporting on all IT budgets & spends pertaining to the HSBC Bank Plc. in UK
- Monitored and analyzed trends in cost center spending in order to make recommendations and to identify areas for possible savings in asset optimization
- Additionally involved in coordinating with the Company Management & Vendor for the development of software applications
- Developing and sharing analytical trends & insights generated from IT Finance data with the stakeholders
- Used SAS JMP to generate statistical summaries of data , perform regression analysis and time series reports for the client on demand prediction

**2004-08 - 2006-08**

### **IT Infrastructure Engineer**

*Wipro Technologies, Kolkata*

- Support development of a Management reporting framework on call center data and Avaya reports
- Sharing Analytics and trends on call center quality metrics, Statistical Analysis and automation of such reports
- Developed proposals for clients outlining project scope and timeline.
- Evaluated existing procedures and made proactive adjustments to meet changing demands
- Collected information and created presentations and excel reports
- Worked closely with client and other stakeholders to determine planning, implementation and integration of IT projects

# Languages

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English



Advanced

# Interests

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Blogging on AI, Programming Photography

# Visa

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Valid US (H1B), UK and AU