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| Sarath Babu  Data Science and AI | [babusarath05@gmail.com](mailto:babusarath05@gmail.com)  +91-8148956716  Chennai, India |

7.5+ years of experience with Data Science and 1.5 years of experience with AI in building data-driven solutions for a variety of requirements in diverse domains. Proficiency in creating, developing, and deploying highly adaptive machine learning, deep learning and generative AI models and pipelines for various business solutions. Looking forward to opportunities to build my career and apply my skills in innovative ways.

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| **SKILLS** |

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| **Programming Languages** | | |
| * Python | * R | * PySpark |
| * SQL |  |  |
| **Domains** | | |
| * Statistics | * Machine Learning | * Deep Learning |
| * Image Analytics | * Text Analytics | * Generative AI |
| * Artificial Intelligence | * Product Affinity (Apriori) |  |
| **Data Visualization** | | |
| * Tableau | * PowerBI | * Looker |
| **Machine Learning** | | |
| * Descriptive Analytics | * Predictive Analytics | * Prescriptive Analytics |
| * Data Pre-Processing | * Data Cleaning | * Model Building |
| * Model Validation | * Hyper Parameter Tuning | * Model Deployment |
| * Regression | * Classification | * Clustering |
| * Time Series Analysis | * Time Series Forecasting |  |
| **Deep Learning** | | |
| * Artificial Neural Networks (ANN) | * Tensorflow | * Keras |
| * PyTorch |  |  |
| **Image Analytics** | | |
| * Convolution Neural Networks (CNN) | * Image Processing | * OpenCV |
| * Object Detection | * YOLO | * SSD |
| * Computer Vision | * Face Recognition | * Vision Transformers |
| **Text Analytics** | | |
| * Natural Language Processing | * Text Classification | * Word Embeddings |
| * Recurrent Neural Networks (RNN) | * BERT | * Wake Word Detection from speech |
| **Generative AI** | | |
| * Transformers | * Large Language Models | * Gemini |
| * GPT | * Llama | * Retrieval Augmented Generation (RAG) |
| * Speech to Text | * OpenAI Whisper | * Chatbot |
| * Langchain | * FAISS | * HuggingFace |
| **Cloud** | | |
| * Azure Databricks | * Azure Data Factory | * Azure Machine Learning |
| * AWS S3 | * AWS Athena | * AWS Glue |
| * AWS Sagemaker | * Snowflake |  |
| **Tools** | | |
| * Airflow | * Docker | * Git |
| **Back End** | | |
| * Flask | * Streamlit | * Flutter (Flet) |
| **Web Automation** | | |
| * Selenium | * Beautiful Soup |  |

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| **Work Experience** |

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| **Latent View Analytics** |

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| 10/2023 - Present  Domain:  **Computer Hardware** | **Gen AI Chatbot application for Data Analysis and visualization for an American Multinational Technology company**  ***Achievements:*** Incorporation of insights in decision making process for quality product managers   * Front End Development with Streamlit, Flask and Back End Development with Python. * SQL generation, summarization and visualization with GPT-4o, RAG with Sentence Transformer, FAISS and few shot prompts. |
| 07/2023 – 09/2023  Domain:  **Computer Hardware** | **SLM Chatbot application for all Laptop and Desktop users of an American Multinational Technology company with Retrieval Augmented Generation**  ***Achievements:*** Single Source of Truth packaged application deployed for all laptops and desktops   * Front End Development with Streamlit, Flask and Back End Development with Python. * Text preprocessing and Embedding search with Sentence Transformer embeddings on FAISS vector store. |
| 03/2023 – 06/2023  Domain:  **Subscription**  **Analytics** | **Churn Analysis for Search Engine of an American Multinational Technology Company**  ***Achievements:*** 3% reduction in churns on targeted demographics   * Customer profiling with Clustering and Feature importance using ensemble tree models with Azure Databricks and PySpark |
| 12/2022 – 02/2023  Domain:  **Data Engineering** | **End to End Data Pipeline Deployment for an American Software Company**  ***Achievements:*** Successful deployment of end-to-end pipeline   * Data Pipeline development and deployment with Airflow, Data Extraction with Snowflake, Data Transformation with Python and Data Visualization with Looker |
| 05/2021 – 11/2022  Domain:  **Supply Chain** | **Data Warehousing Development for Demand Planners for an American Multinational Technology Company**  ***Achievements:*** 50% Reduction in manual efforts for Demand Planners   * Front End Development with Excel and Tkinter and Back End Development with Python and Xlwings * Data Extraction from Teradata, AWS S3 & Snowflake |
| Domain:  **Supply Chain** | **Time Series Forecasting for Tablet Devices for an American Multinational Technology Company**  ***Achievements:*** Incorporation of Forecasting model as part of decision making   * Identification of closely resembling time series of other devices with DTW (Dynamic Time Warping) * Time Series Forecasting with Barycenter Averaged time series |
| Domain:  **Business Process**  **Re-Engineering** | **Incident Analysis with Machine Learning Models for an American Multinational Technology Company**  ***Achievements:*** 16-hour manual effort reduction for every quarter   * Incidents or Tickets visualization with Tableau Dashboards * Identifying factors which results in tickets with Feature importance and Feature selection with Machine Learning Models |

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| **Tiger Analytics** | |
| 10/2020 - 02/2021  Domain: **Retail** | **Pipeline Creation using Azure Data Factory for an American Pet Care Company**  ***Achievements:*** Automation with QC eliminated major manual intervention   * Migration from Pandas to Pyspark and data flow using Azure Databricks. * Assembled the pipeline for ETL & End to End deployment in Azure Data Factory. |
| 04/2020 - 09/2020  Domain: **Retail** | **Product Affinity Model Development for an American Food Corporation**  ***Achievements:*** Identified Paired Products and incorporated into Marketing Strategy   * Created modules and libraries for Apriori algorithm on Big Data in a   Non-PySpark environment   * Product Affinity on county, state and national level and visualization of results using Tableau |
| 01/2020 - 03/2020  Domain:  **Transportation Engineering** | **Accident Visualization using Dashboard and Storyboard for an American State Transportation**  ***Achievements:*** Identified County locations for major resource allocation   * Dashboard with Tableau, PowerBI and Storyboard with Tableau |
| 09/2019 - 01/2020  Domain: **Insurance** | **Churn Possibility Prediction of High Premium Customers for an American Insurance Company**  ***Achievements:*** Identified features which got incorporated into Marketing Strategy   * Feature Selection using Embedded methods. * Predictive modeling using Ensemble models. |

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| **TATA Consultancy Services** | |
| 05/2019 - 09/2019  Domain - **Banking** | **Response Classification using Topic Modelling for an American Multinational Bank**  ***Achievements:*** Reduction of Manual efforts for classification   * Implemented combination of Topic modeling methods (LDA & LSA). * Response classification using Machine Learning Models. |
| 02/2019 - 05/2019  Domain - **Engineering & Technology** | **Oil Rig Pipeline Corrosion Detection for an American Technology Company**   * Image acquisition and processing with OpenCV. * Image thresholding, Pooling and Flattening using Python. * Corrosion detection using Machine Learning models. |
| 09/2018 - 02/2019  Domain - **Powerplant Engineering** | **Reduction of NOx and CO Emissions for a Japan based Thermal Power Plant**  ***Achievements:*** 5% reduction in emissions   * Data visualization and Outlier elimination. * Machine Learning Model Selection and Hyper-Parameter Tuning. * Created a unified model for NOx and CO predictive analytics. |
| 02/2018 - 08/2018  Domain - **Powerplant**  **Engineering** | **Clustering Analysis of Coal Feed for a Japan based Thermal Power Plant**  ***Achievements:*** 5% cost optimization   * Data visualization and Outlier elimination. * Clustering to classify coal based on qualities. |
| 06/2017 – 01/2018  Domain - **Retail** | **Data Visualization at Transactional Level for a UK based Retailer**  ***Achievements:*** Insights incorporated into Decision Making   * Data visualization using Matplotlib, Seaborn and Plotly. |

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| **EDUCATION** |

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| 06/2014 - 09/2016  Applied Electronics | **Master of Engineering**   * PSG College of Technology, Coimbatore |
| 08/2009 - 04/2013  Electronics and Communication Engineering | **Bachelor of Engineering**   * Thanthai Periyar Government Institute of Technology, Vellore |

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| **ACHIEVEMENTS** |

* Published LLM based paper [BIRD: Business Insight and Recommendation Developer](https://doi.org/10.36227/techrxiv.170594587.74941582/v1) in TechRxiv (IEEE Preprint).
* Featured in Worldwide Google AI competition: [BIRD: Business Insight and Recommendation Developer](https://ai.google.dev/competition/projects/bird)
* Runner up in All India Google AI Exchange competition: [ARI: Audit Report Interpreter AI](https://github.com/babusarath05/ARI-testing)
* Featured in Worldwide Databricks AI competition: [Nalanda Educational AI](https://github.com/sarathbabu-latentview/Nalanda_Educational_AI)
* Fine tuned SLM on HuggingFace: [GK\_10000](https://huggingface.co/Sarathbabu-Karunanithi/GK_10000)
* Cleared level 3 of Google FooBar challenge (Google Employment Eligibility)
* Ranked 42 in Machine Hack World Rankings: [MachineHackLeaderboard](https://machinehack.com/leaderboard)
* Developed and published 4 PyPi packages.

1. [multicorr](https://pypi.org/project/multicorr/)
2. [metrictable](https://pypi.org/project/metrictable/)
3. [largeproductaffinity](https://pypi.org/project/largeproductaffinity/)
4. [cipherLV](https://pypi.org/project/cipherLV/)