**Hansa Perera**

**Principal Engineer – Nagarro, Data and AI Technopreneur**

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**Professional Summary**

* Experienced Data and AI Architect offering 13 years of extensive experience in successfully designing and developing Data related solutions, especially for manufacturing, retail, banking and insurance industries following their enterprise grade development processes while adhering to data governance practices.
* Although primarily recognized as a technologist, works as a consultant and evangelist assisting businesses in maximizing the potential of data and AI by establishing a data strategy and road map and implementing data solutions and products both on- and off-premises using both proprietary tools and open-source data technologies.
* Professional trainer and a lecturer for Data and AI, conductiing trainings for corporates, start-ups, and delivering lectures for undegraduate and master’s degree level(both state universities and private institutes). Currently conudcting SLASSCOM Machine Learning Boot Camp series and a Generative AI Training Series for a mid level software engineering services company.

For more details please follow [Hansa Perera | LinkedIn](https://www.linkedin.com/in/hansa-perera-26ab8b95/)

**Academic**

Post Graduate Master of Business Administration, Australian Institute of Business (2017)

Graduate Bachelor of Science (Specialized in Mathematics), University of Sri

Jayewardenepura (2009)

**Skill Set**

* Areas of competencies for data engineering includes data integrations, ETL designing, data cleansing, data staging, data warehousing, business intelligence, data analysis and dataops.
* Areas of competencies for data science and machine learning includes advance statistical inferencing, design of experiments, data mining, feature engineering, operations research, mathematical modelling, statistical modelling, predictive modelling, prescriptive modelling and mlops.
* Areas of competencies for Artificial Intelligence includes deep learning architectures and generative AI techniques.
* Areas of competencies in data product engineering includes data products designing, usage optimization, model enhancements and maintenance.

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| Data Engineering | Azure Data Factory, AWS Glue, Apache AirFlow, Databricks, Snowflake, Temenos Data Management Platform, Temenos Transact |
| Data Analytics | Power BI, Qlik, Tableau, AWS Quicksight, GCP Data Studio, SSAS, SSRS, Grafana, Temenos Analytics |
| Data Science and Machine Learning | Python, Spark, R, Julia, DataRobot, H2o.ai, Huggingface, Azure Machine Learning Studio, AWS SageMaker, KNIME, RapidMiner, Weka, R Studio, Rattle |
| Artificial Intelligence | Google Colab, Tensorflow, Keras, Caffe, Paddle\_paddle, OpenAI, Azure cognitive AI services, AWS AI services, Google mlkit |

**Publications**

* Perera H., Samarasinghe R., A BI Tool for the AI based BI Framework for Churn Prediction of the Telco Industry and Getting the Prescriptive Decisions by Minimizing the Churning Customers, (2020) [AI based BI Framework](https://www.seu.ac.lk/jisit/publication/v5n2/JISIT-5220.pdf)
* Paudel, B., Gopaluhewa, T.H., Gunawardene, M.R., Wijerathna, W.C.H., Samarasinghe, R., Perera, H., ViviSight: A sophisticated, data-driven Business Intelligence tool for Churn and Loan Default Prediction, (2016) [Vivisight: Data Driven BI](http://dspace.sliit.lk/bitstream/123456789/303/1/6.pdf)
* Nugaliyadde, A., Manatunga, K.N., Perera, H.,Compression using Morse Code and Data Patterns, (2014) [Compression using morse code and data patterns](http://dspace.sliit.lk/bitstream/123456789/231/1/4%20Compression%20Using%20Morse%20Code%20and%20Data%20Patterns.pdf)
* De Silva, D.I., Kodagoda, N., Perera, H., Applicability of three complexity metrics, (2013) [1 0.1 1 09/ IC Ter .2 01 2 .6421 409](http://dx.doi.org/10.1109/ICTer.2012.6421409)
* Manamendra, M.A.S.C., Manathunga, K.N., Perera, K.H.D., Improvements for agile manifesto and make agile applicable for undergraduate research projects (2013) [1 0.1 1 09/ IC CS E.2 01 3.6553969](http://dx.doi.org/10.1109/ICCSE.2013.6553969)
* De Silva, H., Perera, K.H.D., Can voice services alone uplift the bottom of the pyramid (2012)

**Some Interesting Recent Data and AI Projects:**

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| Domain | Project | Project Description | Contribution |
| Manufacturing | Generative AI – Proof of Concept | Enhance the CRM using large language models (LLMs) | Develop the training data set that can be utilized with the GPT -3. Use the ChatGPT API to enhance the prompts for the internal CRM uses |
| Conversational BI | Use of voice bots to query the data and insights that are required for decision making during the board meetings | Design and architect the solution |
| Develop the AI component for natural language querying and integration with voice bots |
| Train the business teams for querying, use of data and insights for decision making and enable the shared intelligence |
| Enterprise Data Lake and Data Warehouse Implementation | Architect, design and implementation of enterprise data lake and data warehouse for analytical requirements | Understanding of current analytical requirements, data assets, governance mechanisms, IT infrastructure |
| Explore and evaluate the best suited data architecture |
| Design and architect the most feasible data lake design and data warehouse design |
| Decide the best suited solution stack |
| Effort estimations and building the project plan |
| Mentoring the development team |
| Train the business users for data driven decision making |
| Posture Correction | Identification of postures of shop floor employees and recommend correct position | Build AI model to detect the posture and build the recommendation engine to correct the posture |
| Employee absenteeism prediction | Predicting the employee absenteeism and recommend arrangements for fulfilling workforce | Explore and identification of problem, issues in absenteeism, how the prediction be use for proactive actioning |
| Data cleansing and consolidation |
| Analyse data and pattern identification |
| Build and evaluate the predictive model |
| Build the recommendation system based on the available resource pool |

**Technologies:**

C++, Java, Python, HTML, CSS, React, Angular, .NET

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| Domain | Project | Project Description | Contribution |
| Retail | AIOps - Log Anomaly Detection (Application and Server Logs) | Monitor application and server logs to predict anomalies and root cause | Extract application logs using Splunk Search Query |
| Build a text mining framework to analyze the log messages |
| Based on the text clustering automate the identification log event criticality |
| Predict the events that could be anomaly and recommend the root cause |
| Route Optimization | Monitoring the fleet and recommend the best routes for the delivery vehicles based on the demand including last mile delivery | Explore and identification of data sources in the fleet, delivery vehicles and distribution centres etc. |
| Data cleansing and consolidation |
| Analyze data and pattern identification |
| Use of route optimization techniques to derive the best route with single drop-up and multiple drop-up |
| Automate the recommendations with the given location or provide recommendations on-demand |
| Customer Returns Prediction | Build a machine learning model to predict customer product returns and when they will return the product (return duration) | Feature engineering and customer profiling based on their Customer Life Time Value, Purchasing behaviour and Returns Behaviour |
| Use of automated machine learning techniques to build models faster |
| Enhance the accuracy of models through model agnostics explanations |
| Customer Visits through Video Analytics | Build a customer visit dashboard based on the video machine learning model and detect customer visit anomalous days | Design and architect data extraction and visualization |
| Build a machine learning algorithm to detect store visit anomalies |
| Mentored a junior data scientist to implement the dashboard |
|  | Customer Queue Management | Use of video analytics data to predict the customer visits and arrange POS locations dynamically | Build queuing model to simulate the queue formation based on the video analytics data. Predict the queue formation with respect to the customer visits real-time and recommend the requirement of POS registers to serve customer fast |

References can be provided as per request.