



DATAVIZARD





About mlangles

mlangles is a comprehensive AI platform designed to manage the lifecycle of data and models, offering streamlined solutions for every stage of the process. It has two modules MLOps and LLMOps. Through its MLOps component, Mlangles provides a suite of tools to navigate efficiently through each phase of AI project development, encompassing data engineering, development, deployment, and monitoring. It facilitates continuous integration, continuous deployment, continuous training, and continuous monitoring (CI-CD-CT-CM), enabling enterprises to effectively manage their AI initiatives.

Additionally, Mlangles features LLMOps, a specialized module dedicated to Large Language Model Operations (LLMOps). This module empowers enterprises to customize LLMs with their data, tailored to their specific usecases.We offer a suite of models from very small to large depending on the speed and cost needs of the enterprise. It also facilitates the creation of LLM-based chatbots through integrated low-code/no-code features, for advanced conversational AI capabilities.

In essence, Mlangles offers a complete AI ecosystem, addressing a diverse range of AI needs and challenges for enterprises of any size.





The Problem

Visualizations serve to simplify the process of extracting insights from extensive tabular datasets by alleviating cognitive load. Nonetheless, the task of crafting visualizations is intricate and involves several stages. Initially, users must familiarize themselves with the dataset's content and semantics, and outline relevant goals or hypotheses to explore. Following this, users must carefully select appropriate visualization techniques, including marks, transformations, and layouts, to address each goal effectively. Finally, users must either implement the visualizations through coding or utilize available direct manipulation interfaces. These steps demand expertise and can prove tedious and error-prone for individuals with limited experience in visualization (novices).





The Solution

DataVizard is designed to streamline data analysis processes. By seamlessly connecting to your database, it automatically generates SQL queries without requiring prior SQL knowledge. This empowers users to gain insights from their data through intuitive questions and a variety of visualizations, which can be customized using natural language commands. Additionally, the tool offers recommendations based on the data and visualizations, enhancing productivity and reducing costs. With direct access to data insights, users can efficiently extract valuable information without intermediaries. Plus, the ability to generate diverse graphs facilitates easy integration into presentations.





Feature in Detail



4 modules of DataVizard

1. Data Summarization

DataVizard shrinks massive datasets into easy-to-understand summaries, empowering you to make informed decisions quickly. These summaries pave the way for seamless exploration and analysis.

Language Models (LLMs) possess the remarkable ability to predict outcomes without prior examples, making them versatile in handling various tasks with minimal guidance. However, they are susceptible to hallucinations, such as generating text unrelated to the training data or the current task at hand. One approach to mitigate this issue is to enhance the LLM with grounding context. Thus, the objective of the summarizer is to generate a concise yet information-rich summary for a given dataset, serving as valuable grounding context for visualization tasks. A useful context is characterized by containing information essential for analysts to comprehend the dataset and the potential tasks associated with it. The summary process entails two stages.

In Stage 1, known as Base Summary Generation, we employ specific rules to extract properties from the dataset. These properties include atomic types (such as integer, string, boolean), general statistics (minimum, maximum, number of unique values), and a randomly selected non-null list of n samples for each column.

In Stage 2, known as Summary Enrichment, the initial summary can be optionally enhanced by either an LLM or a user through the DataVizard user interface. This enrichment may involve the addition of semantic descriptions of the dataset (such as a dataset detailing the technical specifications of investment portfolio, customer genome database, transaction database has context menu) and its fields, as well as the prediction of field semantic types.









2. Guided Data Exploration

New to a dataset? No problem! DataVizard offers a fully automated mode that generates insightful visualization goals tailored to the data itself.

DataVizard generates data exploration goals based on a summary generated by the summarizer. The goal generation process is framed as a multitask generation problem, where the LLM is tasked with producing a question (hypothesis), a visualization that addresses the question, and its rationale. It has been observed that requiring the LLM to generate a rationale result in more semantically meaningful goals.

3. Infographics Made Easy

Utilize image generation tools to convert data into visually captivating and stylized infographics, enriched with engaging narratives and personalized elements such as branding, style, and marketing components.

The generated goals and the dataset can be used to create a new graph. Should an undesired graph be generated, modifications can be made. A goal encompasses a question, rationale, and visualization, all of which collaborate to produce an accurate representation of the provided data. The resulting graphs are interactive, allowing users to manipulate them by moving, zooming in or out, downloading, and more.

4. Dive Deeper: Explore with Recommended Visualizations

DataVizard doesn't stop at just visualizing your data. Given a context which can be goals or a an existing visualization, it will intelligently recommend additional charts and graphs that complement your initial exploration. This way, you can uncover hidden trends from different angles and gain a more comprehensive understanding of your information.





Financial Use Case with Data Vizard



Asset managers can benefit significantly from DataVizard's capabilities. By leveraging its intuitive interface and powerful analytics tools, asset managers can gain deeper insights into their portfolios, market trends, and investment strategies. They can quickly access key performance indicators, such as asset allocation, portfolio returns, and risk metrics, enabling informed decision-making in real-time.

Moreover, DataVizard's ability to generate diverse graphs and visualizations facilitates easy communication of insights to stakeholders, including clients, senior management, and regulatory bodies. Asset managers can create compelling presentations that showcase their analysis effectively, improving transparency and trust with clients and regulators alike. DataVizard empowers asset managers to streamline their data analysis workflows, make data-driven decisions with confidence, and effectively communicate insights to key stakeholders, ultimately leading to better investment outcomes and enhanced client satisfaction.

The following visualizations make use of a database consisting of key metrics for stocks from DowJones30 and Nasdaq100 indices, credit ratings for various stocks, a table consisting of financial information such as gross profit growth, EBIT growth and dividends per share growth and a table that consists of stock price history data such as the opening, closing, high and low prices for a particular day.

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Smart Chat	Data Exploration	Terraform Generation	
Tex To Image Data Dive Model Frine Tune Model Hub Plus Hub Plus App Hub	An innovative tool that revolutionizes data exploration. Seamlessly interact with your data using natural language, alwing for inituitive exploration. Instantly generate insightful graphs tailored to your data, accompanied by personalized goal recommendations to drive meaningful analysis.	A user-friendly app designed to simplify the process of creating and deploying infrastructure as code (IAC) using Terraform. Users can input their specific infrastructure are code (IAC) using the stances, network are configurations:	
		Input your database credentials. Your database might consist of periodically updated information of indexes, stocks, etc.	







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Goal Exploration					
1 How have the opening and closing prices of the stock changed over time?				is the distribution of the	aily high and low prices? 3 How often does the stock close at a higher price than it opened?
This visualization uses the 'date', 'open', and 'close' fields to show the trend of the stock's opening and closing prices over time. It can help us understand the stock's performance and volatility.			the This visualizati ck's daily high and fluctuations an	ion uses the 'high' and 'low' low prices. It can help us ur id identify any outliers.	elds to show the distribution of the erstand the range of price higher price than it opened versus the number of days it didn't. This can provide insights into overall upward or downward trend.
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angles provides a conv	ersational interface fo	or automatic generation o	or grammar-agnostic '	visualizations (and infog	ipnics) from data:
int low, high, close and op	en for Amazon?				lable
Data And Visualization	n				
DATE	LOW	нісн	CLOSE	OPEN	0 0 + 0
					Opening and Closing Prices Over Time
2019-01-03	74.86	76.9			
2019-01-04					180
2019-01-07	79.46	81.73	81.48		160 When the With the first of the second se
2019-01-08					
2019-01-09	82.07	83.39	82.97	82.65	
2010 01 00			OL:07		
2019-01-10	81.08	83.16	82.81	82.05	100 Mundur
2019-01-11			82.03		80
					2020 2021 2022 2023 2024
2019-01-14			80.86		date
2019-01-14 2019-01-15	79.76		80.86		date

A graph is generated using the data that is fetched.



Goal Exploration						
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ingles provides a cor	nversational interface f	for automatic generation of gra	ammar-agnostic v	risualizations (and info	ographics) from datal.	
Data And Visualiza	tion					
DATE	LOW	HIGH	CLOSE	OPEN		
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019-01-08	80.83				↓ 140	W1 ^
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2019-01-14			80.86		2020 2021 da	2022 te
2019-01-15						

Lil, Recommend









To Setup Demo

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Visit: www.mlangles.ai