Startupbootcamp Meta

Llama Design Drive | **Challenge Statements**

August 2024

Transforming Industry Challenges into Opportunities with **Llama 3.1**

Startupbootcamp Meta

SMART MOBILITY

هيئة الطرق والمواصلات
ROADS & TRANSPORT AUTHORITY
RTA

RETAIL INNOVATION

CHALHOUB GROUP

SUSTAINABILITY

DUBAI
HOLDING

PASSENGER ACCESSIBILITY

Emirates

RTA is responsible for planning and providing the requirements of transport, roads & traffic in the Emirate of Dubai, and between Dubai and other Emirates of the UAE and neighboring countries in order to provide an effective and an integrated transport system capable of serving the vital interests of the Emirate.

Challenge # 1 Multi-source Mobility Data Utilization

Problem Context

The current data collection is fragmented, which limits the understanding of comprehensive passenger behaviors and preferences crucial for effective transport planning.

Challenge Statement

How can multi-source mobility data be leveraged to enhance Dubai's transport planning through a deeper understanding of passenger behaviors and preferences?

Goal

Aim to increase public transport ridership in Dubai by 15% within the next year by utilizing multi-source data for enhanced mobility planning.

Scope

Data collection across multiple transportation modes in Dubai, including buses, metros, and taxis.

Expected Deliverables

1. **Data Analytics Platform Design:** Design a scalable and adaptable data analytics platform that can integrate and process multi-source mobility data. The design should outline key features and functionalities that support various data types and sources from RTA.
2. **Prototype Development**: Develop a functional prototype that utilizes the designed data analytics platform. The prototype should demonstrate how real-time and historical mobility data can be used to generate actionable insights for improving public transport planning.
3. **Insight Application Examples**: Provide specific examples or case studies showing how the insights derived from the prototype can be applied to enhance route optimization and schedule adjustments in public transportation.

Example Use Case

An AI system that uses multi-source data to adjust transit schedules in real-time based on current demand trends, weather conditions, and ongoing city events. This could include dynamically increasing bus frequencies during peak event discharges or altering routes in response to real-time traffic conditions.

Technology Focus

- Big Data Analytics
- Data Integration
- Sentiment Analysis

Evaluation Criteria

- Accuracy and clarity of the data collected
- Effectiveness of sentiment analysis in identifying passenger trends.
- Effectiveness of insights in enhancing PT planning

Key Impact Metrics

- Increase in public transportation ridership
- Reduced average passenger wait time due to better scheduling and routing
- Increase in user satisfaction scores on public transport

Resources & Support →

Challenge # 2 AI-enhanced Travel Alerts and Assistance

Problem Context

The RTA app currently does not provide predictive real-time information, which is crucial for optimal routing and travel decisions in dynamic urban environments like Dubai

Challenge Statement

How can AI be integrated into the RTA app to enhance user experience by providing real-time alerts and updates, including traffic conditions, public transport capacities, weather changes, and more?

Goal

Enhance the travel experience in Dubai by integrating AI-driven alerts into RTA's systems, ensuring that residents and visitors can make informed and efficient travel decisions based on real-time and predictive data.

Scope

AI functionalities integrated into the RTA's operational systems to improve public transportation and traffic management. This includes processing and analyzing relevant data points to provide accurate and timely travel alerts.

Expected Deliverables

1. **Strategic Implementation Plan:** Outline a phased approach to integrating AI capabilities into the RTA's digital platforms, focusing on scalability and real-time responsiveness.
2. **AI Integration Framework:** Create a framework for the integration of AI technologies that will facilitate real-time data processing and alert generation, ensuring system robustness and accuracy.
3. **Prototype:** Develop a prototype that demonstrates the functionality of the AI-enhanced travel alert system, focusing on user interaction and the effectiveness of the alerts in real-time scenarios.

Example Use Case

Implement an intelligent travel alert system that integrates AI to analyze real-time and historical data on traffic, weather, public transport loads, and incident reports. This system will dynamically provide updates and notifications to commuters in Dubai, such as optimal travel routes, potential delays, parking availability, and alternative transport options, enhancing the overall travel experience by making it more efficient and responsive.

Technology Focus

- AI for predictive analytics and data processing
- ML for pattern recognition and predictive forecasting.

Evaluation Criteria

- Accuracy and timeliness of AI-generated alerts and predictions.
- Solution usability and accessibility.
- Impact of AI features on overall travel efficiency and user satisfaction.

Key Impact Metrics

- Growth in daily active users of the RTA app.
- Reduction in related complaints reported by users.
- Increased customer satisfaction in terms of accuracy and usefulness of travel alerts.

Resources & Support →

For over six decades, Chalhoub Group has been a partner and creator of luxury experiences in the Middle East. The Group, in its endeavour to excel as a hybrid retailer, has reinforced its distribution and marketing services with a portfolio of ten owned brands and over 450 international brands in the luxury, beauty, fashion, and art de vivre categories. More recently, the Group expanded its expertise into new categories of luxury watches, jewellery, and eyewear.

Every step at Chalhoub Group is taken with the customer at heart. Be it constantly reinventing itself or focusing on innovation to provide luxury experiences at over 750+ experiential retail stores, online and through mobile apps, each touch point leads to delighting the customer.

Today, Chalhoub Group stands for over 16,000 skilled and talented professionals across eight countries, whose cohesive efforts have resulted in the Group being certified as a Great Place to Work® in several countries.

To keep the innovation journey going, the Group has set up “The Greenhouse”, which is not just an innovation hub, but also an incubator space and accelerator for startups and small businesses in the region and internationally. This is just one of the several initiatives taken by the Group to reinvent itself, catalysed by forward thinking and future proofing. The Group has also been embedding sustainability at the core of its business strategy with a clear commitment towards people, partners and the planet, and by being a member of the United Nations Global Compact Community and signatory of the Women's Empowerment Principles.

CHALHOUB GROUP
SINCE 1955

Retail Innovation

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Challenge # 1 Customer Sentiment Analysis

Problem Context

Chalhoub Group collects diverse customer feedback across various channels, but lacks an integrated approach to analyze this data effectively. This gap hinders the ability to enhance customer loyalty and respond accurately to customer needs.

Challenge Statement

How can we effectively analyze and utilize customer feedback and sentiment from various channels to enhance customer satisfaction and brand loyalty?

Goal

Enhance customer engagement and retention by leveraging detailed sentiment analysis across all customer interaction points with a single customer view in mind)

Scope

Conduct sentiment analysis across a variety of channels such as online reviews, social media, emails, and direct feedback surveys, incorporating customer care and delivery KPIs to gather comprehensive insights at the Group level

Expected Deliverables

1. **Integrated Sentiment Analysis Tool:** An AI platform that provides both real-time alerting and comparative brand analysis, displayed through an intuitive dashboard
2. **Comprehensive Sentiment Report:** Periodic reports that offer detailed insights into both individual and comparative brand sentiments, highlighting areas of success and opportunities for improvement
3. **Brand Score Output:** an aggregated score derived from sentiment and opportunities for improvement
4. **Brand Score Output:** An aggregated score derived from sentiment analysis and KPIs to guide brand leaders in strategic decision-making

Example Use Case

An AI-driven sentiment analysis platform that tracks real-time customer feedback and benchmarks brand sentiments across the Chalhoub Group, automatically identifying key trends from various channels like social media and online reviews to enhance customer service and provide strategic insights for brand positioning and marketing.

Technology Focus

- AI Technologies
- Machine Learning (ML)
- Natural Language Processing (NLP)

Evaluation Criteria

- **Accuracy and Depth of Analysis:** Measure how accurately the system reflects actual customer sentiments and provides granular, actionable insights
- **System Responsiveness and Integration**: Evaluate the speed and effectiveness of the system in real-time monitoring and its ability to integrate findings across different brand analyses
- **Strategic Impact:** Assess how the insights derived from comparative brand analysis influence brand strategy adjustments

Key Impact Metrics

- **Reduced Response Time:** Decrease in time taken to respond to customer feedback, enhancing customer service efficiency
- **Improved Customer Satisfaction Levels**: Improvements in customer satisfaction due to timely responses and personalized interactions
- **Increased Brand Loyalty**: Growth in repeat customer rates and brand endorsements influenced by targeted sentiment analysis.

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Challenge # 2 Predictive Inventory Management

Problem Context
Current inventory management systems are predominantly reactive, leading to frequent overstocks and stockouts. These issues not only escalate operational costs but also affect customer satisfaction due to product unavailability.

Challenge Statement
How can predictive analytics be used to enhance inventory management at Chalhoub Group, focusing on demand forecasting and sell-through to dynamically optimize inventory levels and avoid overstocks or stockouts?

Goal
- Optimize inventory levels through enhanced demand forecasting and sell-through analysis.
- Reduce operational costs through optimized inventory management
- Enhance overall supply chain efficiency and responsiveness

Scope
Deploy predictive analytics across all product lines, particularly those with high demand variability, to forecast inventory needs and manage supply more efficiently based on forecasted demand.

Expected Deliverables
1. **Predictive Analytics Model:** A model that forecasts inventory needs and recommends adjustments in real-time based on dynamic demand trends.
2. **Operational Dashboard:** A real-time dashboard that provides actionable insights and visualizations of inventory levels, demand trends, and replenishment status

Example Use Case
A predictive analytics system that monitors sales data, customer demand trends, and inventory levels in real-time across various sales channels. This AI-driven system is designed to dynamically adjust inventory distribution, ensuring optimal stock levels are maintained.

Technology Focus
- Machine Learning
- Big Data Analytics

Evaluation Criteria
- **Model Accuracy:** Evaluate the predictive accuracy and reliability of the inventory forecasts
- **Operational Efficiency:** Assess the impact of the predictive analytics system on reducing wasteful inventory practices
- **Integration Capability:** Ensure seamless integration with existing IT systems and e-commerce platforms
- **Cost-Effectiveness:** Measure the return on investment in terms of reduced operational costs and improved inventory turnover

Key Impact Metrics
- **Stock management:** Decrease in overstock and stockout occurrences
- **Cost Savings:** Reductions in costs associated with excess inventory and lost sales due to stockouts
- **Customer Satisfaction Improvement:** through fewer product availability issues

Resources & Support →

DUBAI HOLDING

A global investment conglomerate operating in over 13 countries. As a dynamic and innovative organization, it manages a diverse portfolio across multiple sectors including real estate, hospitality, telecommunications, investments, and utilities. Dubai Holding is committed to the highest standards of corporate governance and sustainable development, focusing on initiatives that promote social and environmental stewardship across its operations.

DUBAI HOLDING

Sustainability

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Challenge # 1 Enhancing Greenhouse Gas (GHG) Emissions Calculation, Reporting and Management

Problem Context

Calculating and managing Scope 3 GHG emissions, specifically for categories 3.1 (Purchased Goods and Services) and 3.2 (Capital Goods), poses significant challenges due to data quality and availability and the absence of pre-established models that leverage procurement data for GHG emissions calculations

Challenge Statement

How can AI and traditional corporate procurement datasets be used to calculate, categorize and better manage GHG Scope 3.1 and 3.2 emissions at Dubai Holding to reduce our environmental footprint?

Goal

- Enhance data accuracy and integrity through streamlined data cleansing, enabling GHG emissions calculations and sustainability reporting.
- Establish a foundational system for GHG emissions calculations that leverages procurement data.
- Improve Dubai Holding's sustainability performance and reporting

Scope

The challenge will focus on identifying the most suitable methodologies to measure emissions based on procurement data in the absence of readily available localised emission factors libraries.

Expected Deliverables

1. **GHG Calculation System:** A new system that establishes the capability to calculate GHG Scope 3.1 and 3.2 emissions from procurement data.
2. **Methodology for Emission Factor Application:** A comprehensive guide and tool that initially maps procurement information to most suitable emission measurement methodology such as emission factors, enabling the calculation of GHG emissions.

Example Use Case

Implementing an AI-driven system that:

- *Establishes a new framework for using procurement data to calculate GHG emissions, ensuring essential details like country of origin are accurately captured.*
- *Uses AI and ML technologies to create a mapping system of the most suitable calculation methodology based on available public information.*

Technology Focus

- AI Technologies
- Machine Learning (ML)
- Big Data Analytics
- Natural Language Processing (NLP)

Evaluation Criteria

- Functionality of the GHG emissions calculation in the system post-implementation.
- Relevance and applicability of the selected methodology and emission factors used.
- Impact of the system on the initiation of GHG reporting.

Key Impact Metrics

- Establishment of GHG Scope 3.1 and 3.2 emissions calculations.
- Achievement of Net Zero by 2050 commitment.

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DUBAI HOLDING

Sustainability

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Challenge # 2 Development of Local Greenhouse Gas (GHG) Emission Factors for the UAE

Problem Context

Accurately calculating Scope 3.1 and 3.2 GHG emissions for requires specific and localised emission factors relevant to products, capital goods and services used in the UAE. Alternative methodologies for Scope 3.1 and 3.2 have low accuracy and present complexity in managing/reducing emissions.

Challenge Statement

How can we develop an expert LLM that recommends UAE-specific emission factors enhancing the positive impact of our GHG emissions Scope 3.1 and 3.2 measurement and management?

Goal

- Develop custom GHG emission factors that accurately reflect the UAE's trade and product specifics.
- Implement a trained AI-driven system, to enhance the accuracy and efficiency of GHG Scope 3.1 and 3.2 emissions calculations at Dubai Holding.

Scope

- Researching and compiling emission factors applicable for products, capital goods and services used in the UAE; including accurate emission factors for international transportation/shipping.
- Designing and training a LLM to process this data and assist in GHG Scope 3.1 and 3.2 emissions calculations.

Expected Deliverables

1. **Custom Multiplier Database:** A comprehensive database of UAE-specific GHG multipliers.
2. **AI-Assisted GHG Calculation System:** A fully functional LLM trained to assist in GHG Scope 3 calculations using the newly developed emission factors.

Example Use Case

- *Utilizes a trained LLM to analyze trade information and product specifics, applying newly developed UAE-specific emission factors to calculate accurate GHG Scope 3.1 and 3.2 emissions.*
- *Supports decision-making on procurement activities by providing real-time data GHG emissions and throughout procurement phase.*

Technology Focus

- AI Technologies
- Machine Learning (ML)
- Natural Language Processing (NLP)

Evaluation Criteria

- **Effectiveness of Custom Multipliers:** The accuracy of GHG calculations using the new emission factors compared to other methodologies.
- **Performance of the LLM:** Usability and accuracy in assisting GHG Scope 3.1 and 3.2 emissions calculations for users in the UAE.

Key Impact Metrics

- Increased accuracy in GHG Scope 3.1 and 3.2 emissions reporting as measured by alignment with environmental standards.
- Reduction in time required to calculate GHG Scope 3.1 and 3.2 emissions with AI assistance.

Resources & Support →

Emirates connects the world to, and through their global hub in Dubai. Emirates operate modern, efficient and comfortable aircraft, and a culturally diverse workforce delivers award-winning services to customers across six continents every day. As a global organisation, Emirates is committed to ethical business practices. Their commercial success has been driven by Dubai's Open Skies aviation policy, and is based on a solid business model and customer centricity.

Emirates

Travel Accessibility

Startupbootcamp Meta

Challenge

Removing Travel Anxiety for People with Disabilities and Senior Travelers

Problem Context

Travel can be a source of significant anxiety for people with disabilities and senior travelers. This anxiety often stems from a lack of accessible, reliable, and comprehensive information tailored to the user group's specific needs, leading many to avoid travel altogether.

Challenge Statement

How can Emirates enhance the travel experience for this user group by providing them with personalized, reliable, and comprehensive travel information that eliminates anxiety and promotes travel confidence?

Goal

Primary Goal: Enhance booking experiences and travel confidence for the user group by improving accessibility and reducing anxiety.

Secondary Goal: Increase the use of digital platforms for travel planning and support among these users.

Scope

Develop solutions that aggregate and personalize travel information across multiple platforms, ensuring it is accessible, intuitive and tailored to the specific needs of these individuals.

Expected Deliverables

1. **Accessible Travel Assistant:** Design an AI-driven platform that serves as a travel assistant, providing end-to-end guidance from planning through travel, tailored to the specific needs of the user.
2. **Standardized Information Portal or Application:** Create a centralized repository that collects and standardizes travel-related information from various public and internal sources, including airport procedures, accommodations, and local attractions, facilities (example healthcare).
3. **Contextual Information Delivery:** Develop mechanisms to deliver personalized travel information at the right time and place, enhancing confidence and reducing anxiety for travelers.
4. **Business Insights Dashboard:** Aggregates interactions and responses to provide analytics and insights that continually enhance capabilities.

Example Use Case

An AI-powered travel assistant that dynamically provides travel tips and procedures based on real-time data and user profile, including specific airport guides, in-flight accommodations, and destination-specific accessibility information.

Technology Focus

- AI Technologies
- Machine Learning (ML)
- User Interface Design for accessibility
- Web Scraping

Evaluation Criteria

- User-friendliness and accessibility of the solutions
- Effectiveness in reducing reported travel-related anxiety
- Accuracy and relevance of the information provided
- Solution usability validated with relevant user groups to ensure accessibility

Key Impact Metrics

- Increase in bookings from travelers with disabilities and senior travelers.
- Improvement in customer satisfaction scores for accessibility and support.
- Increase in the percentage of pre-travel inquiries and bookings made through online channels.
- Reduction in the use of offline channels for travel-related support.

Resources & Support →

Resources & Support

Provided by the Corporates

Data Access

As a participant, you are expected to leverage publicly available data pertinent to your challenge. You should identify and utilize these resources to develop informed solutions. Depending on the nature of your challenge and the associated corporate partner, access to certain proprietary data may also be available, provided it is relevant to your project. This ensures that your solutions are both innovative and applicable to real-world needs.

Current Processes

You will engage with existing business processes relevant to your challenge, receiving guidance on how to integrate and address operational needs, such as optimizing inventory management, incorporating greenhouse gas calculations or enhancing accessibility features for various user groups.

Mentorship & Expertise

You will benefit from mentorship sessions and expert guidance, specifically matched to the needs of your challenge and the corporate environment. This support is available depending on the availability of experts.

Engagement with Corporates

Challenge Briefing

You will receive a detailed briefing at the start of the program, tailored to the specifics of your challenge. This ensures that you have a clear and comprehensive understanding of the objectives.

Mid-Program Check-In

You will have the opportunity to assess your progress at the program's midpoint and recalibrate your approach based on targeted feedback.

Demo Day

You will present your solutions to corporates and industry leaders at the end of the program, exploring potential partnerships and pilot project opportunities.

Join us in crafting solutions that make a real difference.
We can't wait to see what you come up with!