Optimizing Community Engagement- Advanced Analytics of Facebook Group Posts

Below are the question answers that my audience might ask during the presentation. I did not include them in the presentation due to time constraints.

1. What led to the need for analyzing Facebook group posts?
   ➢ As the community expanded rapidly from 400 to 700 houses, efficiently managing the increasing volume of posts and discussions became crucial for streamlined communication and extracting actionable insights for moderators and administrators.

2. How did the significance of the Facebook group evolve with the community's expansion?
   ➢ The Facebook group's role as the primary communication channel intensified, necessitating the use of NLP and LDA to analyze posts for actionable insights, aiming to enhance the group's utility as a community hub.

3. What data was analyzed in this study?
   ➢ Approximately 3,500 non-personal Facebook group posts, including post creation dates, comment counts, reaction counts, and textual content, collected from March 2022 to the present.

4. What methods were employed for data analysis?
   ➢ The study utilized automated data collection using Apify, data preprocessing to remove personal identifiers, and NLP techniques, particularly LDA, for topic identification and trend analysis.

5. What were the key findings from the exploratory data analysis (EDA)?
   ➢ The EDA revealed a significant increase in unique users, peaking at 244 in January 2024, and a notable concentration of content creation among the top 10 users, who contributed to about 23% of all posts.

6. How did community engagement trends change over time according to the trend analysis?

➢ Community engagement saw peaks and fluctuations, with a significant surge in posts in July 2023, indicating periods of heightened activity and a growing trend in engagement.

7. What topics were identified as areas of concern or interest within the community?

➢ Topics included package delivery and security, local services and community engagement, and infrastructure and education, alongside discussions on home maintenance, community rules, and service recommendations.

8. How can the insights from this analysis improve community support and interaction?

➢ By identifying and understanding communication patterns and topics of interest, moderators can tailor engagement strategies, curate relevant content, and address community concerns more effectively.

9. What future applications does the project's approach have?

➢ The methodology can extend to behavioral modeling, content personalization, community health monitoring, and can be adapted for analyzing engagement on other social media platforms as well.

10. What ethical considerations were made during the study?

➢ The study prioritized data privacy and anonymity, made efforts to mitigate bias and ensure diverse data representation, and emphasized transparent data usage and obtaining explicit consent from community members.