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**Use cases of Trending News Classifier**

**Use Case 1 : Fetch Tweets from Specific Twitter Accounts**

**Actors :** Journalist

**Description :** The journalist wants to fetch tweets from specific Twitter accounts of trusted news sources.

**Flow :**

* The system authenticates with the Twitter API using the journalist's credentials.
* The journalist provides a list of Twitter account names to fetch tweets from.
* The system fetches tweets from the specified Twitter accounts and stores them in the database.
* The journalist can view the fetched tweets in the trending news feed for analysis.

**Use Case 2 : Filter Tweets Based on Hashtags and Keywords**

**Actors :** User

**Description:** The user wants to filter tweets based on specific hashtags and keywords to focus on trending news topics of interest.

**Flow :**

* The user accesses the trending news classifier system.
* The user enters hashtags and keywords in the filtering interface.
* The system filters tweets based on the specified hashtags and keywords.
* The user views the filtered tweets related to their interests in the trending news feed.

**Use Case 3: Identify Tweets with High Engagement Rated**

**Actors: Trending News Classifier**

**Description:** The trending news classifier wants to identify tweets with high engagement rates as potential trending news.

**Flow:**

* The trending news classifier system continuously monitors engagement metrics for incoming tweets.
* The system identifies tweets with engagement rates above a defined threshold as potential trending news. The trending news classifier updates the trending news list with the identified tweets.

**Use Case 4 : Receive Notifications for High Engagement Tweets**

**Actors: Expert or Thought Leader**

**Description:** The expert or thought leader wants to receive notifications when their tweets receive high engagement rates or become trending news.

**Flow:**

* The expert logs into the trending news classifier system.
* The system continuously monitors engagement metrics for the expert's tweets. When a tweet achieves high engagement or becomes trending, the system sends a notification to the expert.

**Use Case 5 : Track Engagement Metrics for Shared Articles**

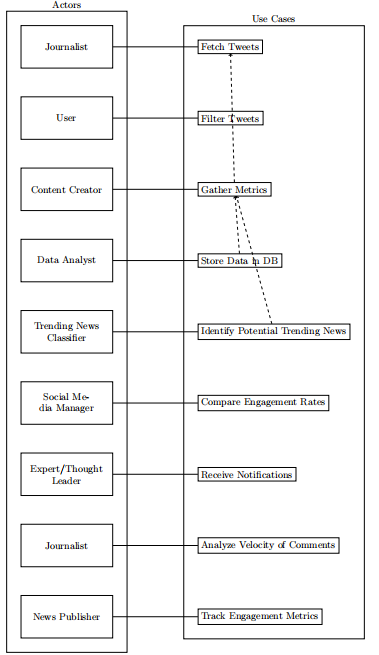
**Actors: News Publisher**

**Description:** The news publisher wants to track the engagement metrics (likes, retweets, etc.) for articles shared on Twitter.

**Flow:**

* The news publisher integrates the trending news classifier system with their articles shared on Twitter.
* The system tracks the engagement metrics for each shared article and stores the data in the database.

**Use Case Diagram : -**



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**USE CASES OF VPCSM**

1. \*\*Video Upload and Preprocessing\*\*

- Use Case: User uploads a video for preprocessing and analysis.

- Actors: User, VPCSM Interface

- Trigger: User initiates the video upload process.

- Preconditions: User is authenticated and has appropriate permissions.

- Basic Flow:

1. User selects a video file or provides a streaming link from various sources.

2. The VPCSM interface accepts the video input and initiates preprocessing.

3. Preprocessing standardizes the video quality, frame rates, resolutions, and codecs.

4. Preprocessed video is stored and made ready for further analysis.

2. \*\*Video Pattern Analysis\*\*

- Use Case: User wants to identify specific patterns, objects, or actions within video content.

- Actors: User, VPCSM Pattern Analysis Module

- Trigger: User initiates the pattern analysis for a video.

- Preconditions: Video has been preprocessed.

- Basic Flow:

1. User selects a video for pattern analysis.

2. The VPCSM Pattern Analysis Module utilizes computer vision techniques and deep learning algorithms for pattern recognition.

3. Object detection algorithm locates and recognizes objects like people, vehicles, or animals in video frames.

4. Action recognition algorithm categorizes human actions and gestures.

5. Anomaly detection algorithm identifies unusual or irregular patterns in the video.

3. \*\*Content Moderation and Filtering\*\*

- Use Case: User sets custom screening criteria based on specific tags, patterns, or classifications.

- Actors: User, Content Moderation Module

- Trigger: User configures content moderation rules for the platform.

- Preconditions: Video has been analyzed and patterns have been identified.

- Basic Flow:

1. User defines rules and classifiers for automated content filtering.

2. The Content Moderation Module applies predefined rules to filter out inappropriate content.

3. Real-time monitoring module analyzes live video streams for immediate action and response.

4. \*\*Sentiment Analysis from Video\*\*

- Use Case: User wants to understand the emotions conveyed in the video.

- Actors: User, Sentiment Analysis Module

- Trigger: User initiates sentiment analysis for a video.

- Preconditions: Video has been preprocessed.

- Basic Flow:

1. User selects a video for sentiment analysis.

2. The Sentiment Analysis Module extracts information from audio and visual channels, including speech recognition, facial expression analysis, and scene analysis.

3. Multimodal sentiment analysis provides a holistic view of emotions conveyed in the video.

5. \*\*Video Categorization\*\*

- Use Case: User categorizes news videos based on various criteria.

- Actors: User, Video Categorization Module

- Trigger: User requests video categorization for a set of news videos.

- Preconditions: Video patterns have been analyzed and identified.

- Basic Flow:

1. User provides a set of news videos for categorization.

2. The Video Categorization Module uses machine learning algorithms to categorize videos based on subject, geographical location, language, and emotional tone.

6. \*\*Legal and Copyright Compliance\*\*

- Use Case: User ensures the VPCSM complies with legal and copyright regulations.

- Actors: User, Legal Compliance Module

- Trigger: User initiates the compliance check for video content.

- Preconditions: Video patterns have been analyzed, and copyrighted materials have been identified.

- Basic Flow:

1. The Legal Compliance Module identifies copyrighted materials within the videos.

2. VPCSM collaborates with content creators or copyright holders to obtain proper permissions and licensing agreements.

7. \*\*Model Selection and Optimization\*\*

- Use Case: VPCSM uses appropriate machine learning models for video analysis.

- Actors: VPCSM, Model Selection Module

- Trigger: Video analysis process starts.

- Preconditions: VPCSM has access to different machine learning models and algorithms.

- Basic Flow:

1. The Model Selection Module chooses Hidden Markov Models (HMMs) for temporal pattern modeling, Long Short-Term Memory (LSTM) networks for sequential data analysis, and Convolutional Neural Networks (CNNs) for image-based feature extraction.

8. \*\*Speech-to-Text Model Training\*\*

- Use Case: User trains the Speech-to-Text Model with specific domain data.

- Actors: User, Speech-to-Text Model Training Module

- Trigger: User initiates the training process.

- Preconditions: VPCSM provides customizable Speech-to-Text Model.

- Basic Flow:

1. User provides labeled datasets to fine-tune the Speech-to-Text Model.

2. The Speech-to-Text Model Training Module leverages transfer learning and pre-trained models to expedite the training process.

9. \*\*Real-Time Monitoring and Action\*\*

- Use Case: User enables real-time monitoring and analysis of live video streams.

- Actors: User, Real-Time Monitoring Module

- Trigger: User activates real-time monitoring for video streams.

- Preconditions: VPCSM is capable of processing video data on-the-fly.

- Basic Flow:

1. The Real-Time Monitoring Module analyzes live video streams for potential threats or abnormal patterns.

2. Immediate actions and responses are triggered based on the analysis results.

10. \*\*Abnormality Detection\*\*

- Use Case: User wants to detect unusual events or anomalies within video content.

- Actors: User, Abnormality Detection Module

- Trigger: User initiates abnormality detection for a video.

- Preconditions: Video has been preprocessed.

- Basic Flow:

1. User selects a video for abnormality detection.

2. The Abnormality Detection Module uses unsupervised learning methods to identify deviations from typical patterns.

11. \*\*Video Summarization\*\*

- Use Case: User generates concise summaries of longer videos.

- Actors: User, Video Summarization Module

- Trigger: User requests video summarization for a lengthy video.

- Preconditions: Video has been preprocessed.

- Basic Flow:

1. User provides a lengthy video for summarization.

2. The Video Summarization Module uses clustering algorithms to select key frames or sequences representing the main content of the video.

12. \*\*Content-Based Video Retrieval\*\*

- Use Case: User searches and retrieves videos based on their content.

- Actors: User, Content-Based Video Retrieval Module

- Trigger: User initiates a search query for relevant videos.

- Preconditions: Video has been preprocessed, and feature embeddings have been extracted.

- Basic Flow:

1. User provides a search query or a video for content-based retrieval.

2. The Content-Based Video Retrieval Module uses similarity search algorithms to retrieve videos with similar content.

13. \*\*Customizable Screening Criteria\*\*

- Use Case: User sets custom screening criteria for content moderation.

- Actors: User, Content Moderation Module

- Trigger: User defines custom rules and classifiers for content filtering.

- Preconditions: Content Moderation Module is equipped with customization options.

- Basic Flow:

1. User defines specific tags, patterns, or classifications for content filtering.

2. The Content Moderation Module automatically

filters out inappropriate or undesirable content based on the custom rules.

14. \*\*Flexibility in Pattern Detection\*\*

- Use Case: User customizes the VPCSM for specialized pattern detection.

- Actors: User, VPCSM Configuration Module

- Trigger: User configures the VPCSM for specific object recognition or anomaly detection.

- Preconditions: VPCSM is capable of fine-tuning computer vision models.

- Basic Flow:

1. User customizes the VPCSM to identify specific objects, detect anomalies, or recognize human gestures relevant to their application.

15. \*\*Multilingual Support\*\*

- Use Case: VPCSM supports video content analysis in different languages.

- Actors: VPCSM, Language Processing Module

- Trigger: User uploads or requests analysis for videos in various languages.

- Preconditions: VPCSM is configured to support multilingual analysis.

- Basic Flow:

1. VPCSM processes videos in different languages using the Language Processing Module.

2. Speech-to-text conversion accurately transcribes speech in various languages.

16. \*\*Real-Time Content Moderation\*\*

- Use Case: VPCSM provides real-time content moderation for live video streams.

- Actors: VPCSM Real-Time Monitoring Module, Content Moderation Module

- Trigger: User enables real-time content moderation for a live video stream.

- Preconditions: VPCSM is capable of processing video data in real-time.

- Basic Flow:

1. The Real-Time Monitoring Module analyzes the live video stream for potential inappropriate or harmful content.

2. The Content Moderation Module takes immediate action based on the analysis results, such as content takedown or user notifications.

17. \*\*Collaboration and Integration\*\*

- Use Case: VPCSM collaborates and integrates with external systems and tools.

- Actors: VPCSM, External Applications

- Trigger: External applications request data exchange with the VPCSM.

- Preconditions: VPCSM provides APIs and data formats for integration.

- Basic Flow:

1. External applications communicate with the VPCSM using APIs and data formats for seamless data exchange.

2. VPCSM shares video analysis results with content management systems, analytics platforms, or other relevant applications.

18. \*\*Support for Various Video Formats and Codecs\*\*

- Use Case: VPCSM supports a wide range of video formats and codecs.

- Actors: VPCSM, Video Input Module

- Trigger: User uploads videos in different formats for analysis.

- Preconditions: VPCSM is capable of processing multiple video formats.

- Basic Flow:

1. User uploads videos in popular formats like MP4, AVI, MOV, etc., or with various codecs.

2. The Video Input Module ensures compatibility and processes the videos for analysis.

19. \*\*Ethical Content Classification\*\*

- Use Case: VPCSM ensures ethical content classification without biased or discriminatory categorizations.

- Actors: VPCSM, Content Classification Module

- Trigger: User initiates content classification for video content.

- Preconditions: VPCSM follows ethical guidelines for content categorization.

- Basic Flow:

1. The Content Classification Module avoids biased classifications based on race, gender, religion, or political affiliations.

2. Content categorization is solely based on objective attributes and characteristics of the video content.

20. \*\*Continuous Improvement through User Feedback\*\*

- Use Case: VPCSM incorporates user feedback to improve accuracy and performance.

- Actors: VPCSM Feedback Module, Users

- Trigger: Users provide feedback on the VPCSM's analysis results.

- Preconditions: VPCSM has a feedback mechanism in place.

- Basic Flow:

1. Users provide feedback on the accuracy of classifications, sentiment analysis, and overall performance.

2. The Feedback Module analyzes the feedback and identifies areas for improvement.

3. The VPCSM refines algorithms and models based on user feedback.

21. \*\*Online and Offline Processing\*\*

- Use Case: VPCSM supports both online and offline video processing.

- Actors: VPCSM Online Processing Module, VPCSM Offline Processing Module

- Trigger: User chooses online or offline analysis for video content.

- Preconditions: VPCSM has online and offline processing capabilities.

- Basic Flow:

1. User selects online processing for real-time content moderation and decision-making.

2. Alternatively, user chooses offline processing for in-depth analysis and content categorization.

22. \*\*Cross-Platform Accessibility\*\*

- Use Case: VPCSM is accessible across different devices and platforms.

- Actors: Users, VPCSM Interface

- Trigger: Users access the VPCSM from various devices.

- Preconditions: VPCSM has responsive design elements for different screen sizes.

- Basic Flow:

1. Users access the VPCSM using desktop computers, mobile devices, or tablets.

2. The VPCSM interface adapts to different screen sizes for a consistent user experience.

23. \*\*Transparent Data Handling and Storage\*\*

- Use Case: VPCSM provides transparent practices for data handling and storage.

- Actors: VPCSM, Users

- Trigger: Users interact with the VPCSM and provide data.

- Preconditions: VPCSM has established data handling and storage policies.

- Basic Flow:

1. The VPCSM clearly communicates how user data, video content, and analysis results are processed, stored, and utilized.

2. Users are informed of the data practices, instilling trust and ensuring data protection compliance.

24. \*\*Multimodal Sentiment Analysis\*\*

- Use Case: VPCSM performs sentiment analysis by combining information from audio and visual channels.

- Actors: VPCSM Sentiment Analysis Module, Users

- Trigger: Users request sentiment analysis for video content.

- Preconditions: VPCSM employs multimodal analysis techniques.

- Basic Flow:

1. VPCSM Sentiment Analysis Module combines data from speech recognition, facial expression analysis, scene analysis, and other sources.

2. The VPCSM provides more accurate and nuanced sentiment scores by considering multiple modalities.

25. \*\*Real-Time Alerts and Notifications\*\*

- Use Case: VPCSM provides real-time alerts and notifications for specific events detected in video content.

- Actors: VPCSM Real-Time Monitoring Module, Notification System

- Trigger: VPCSM detects critical situations or anomalies in the video content.

- Preconditions: VPCSM is equipped with real-time monitoring capabilities.

- Basic Flow:

1. The Real-Time Monitoring Module detects potential threats or abnormal patterns in the video content.

2. The Notification System triggers alerts to relevant stakeholders, such as content moderators or administrators.

26. \*\*Compliance with Industry Standards\*\*

- Use Case: VPCSM adheres to relevant industry standards for video analysis and content moderation.

- Actors: VPCSM Compliance Module, Regulatory Guidelines

- Trigger: VPCSM conducts video analysis and content moderation.

- Preconditions: VPCSM has integrated compliance measures based on industry standards.

- Basic Flow:

1. The Compliance Module ensures that the VPCSM follows ethical, legal, and regulatory guidelines for data privacy, content categorization, and user protection.

27. \*\*Customizable Content Moderation Rules\*\*

- Use Case: VPCSM allows users to set customizable content moderation rules and classifiers.

- Actors: VPCSM Customization Module, Content Moderators

- Trigger: Content moderators define content moderation criteria.

- Preconditions: VPCSM provides an intuitive interface for rule definition.

- Basic Flow:

1. Content Moderators use the Customization Module to define rules based on specific tags, patterns, or classifications.

2. The VPCSM automatically applies the customized rules to identify and filter out inappropriate or undesirable content.

28. \*\*Incremental Training for Improved Accuracy\*\*

- Use Case: VPCSM supports incremental training to continuously improve accuracy.

- Actors: VPCSM Training Module, Data Curators

- Trigger: Data curators provide new data for model training.

- Preconditions: VPCSM has a mechanism for incremental model updates.

- Basic Flow:

1. Data Curators periodically update the VPCSM with new labeled datasets.

2. The Training Module incorporates the new data for model retraining, improving accuracy over time.

29. \*\*Scalability and Performance Optimization\*\*

- Use Case: VPCSM is scalable and optimizes performance to handle a large volume of video content efficiently.

- Actors: VPCSM Scalability Module, Performance Optimization Module

- Trigger: User uploads a high volume of video content for analysis.

- Preconditions: VPCSM is designed to handle large-scale video processing.

- Basic Flow:

1. The Scalability Module ensures that the VPCSM can process videos in parallel to prevent bottlenecks during peak usage.

2. The Performance Optimization Module optimizes resource utilization for smooth operations.

30. \*\*Detailed Analytics and Insights\*\*

- Use Case: VPCSM provides comprehensive analytics and insights from video content analysis.

- Actors: VPCSM Analytics Module, Content Creators, Marketers, Researchers

- Trigger: Users request analytics and insights on video content.

- Preconditions: VPCSM captures and stores analysis results for reporting.

- Basic Flow:

1. VPCSM Analytics Module generates detailed reports and visualizations of patterns, sentiments, and content categories within the analyzed videos.

2. Content Creators, Marketers, and Researchers use the insights for data-driven decision-making.

31. \*\*Interoperability with Existing Tools\*\*

- Use Case: VPCSM is interoperable with existing tools and workflows used by organizations.

- Actors: VPCSM Integration Module, External Applications

- Trigger: External applications require data exchange with the VPCSM.

- Preconditions: VPCSM provides APIs and compatibility for integration.

- Basic Flow:

1. External Applications communicate with the VPCSM using APIs and data formats to exchange data seamlessly.

2. Data from the VPCSM is integrated into content management systems, video platforms, analytics tools, or other relevant applications.

32. \*\*Extensive Documentation and Training Resources\*\*

- Use Case: VPCSM provides extensive documentation and training resources for users.

- Actors: VPCSM Documentation Team, Users

- Trigger: Users seek guidance on VPCSM functionalities and features.

- Preconditions: VPCSM has prepared documentation and training materials.

- Basic Flow:

1. The Documentation Team provides user guides, API documentation, and tutorials to assist users in understanding and utilizing the VPCSM effectively.

33. \*\*Support for Video Content Streaming\*\*

- Use Case: VPCSM supports video content streaming for real-time analysis.

- Actors: VPCSM Real-Time Monitoring Module, Streaming Platform

- Trigger: Live video stream is being processed.

- Preconditions: VPCSM has the capability to process video streams in real-time.

- Basic Flow:

1. The Real-Time Monitoring Module analyzes the live video stream for content moderation and decision-making.

2. The Streaming Platform receives real-time analysis results and takes appropriate actions.

34. \*\*Compliance with Content Regulations\*\*

- Use Case: VPCSM ensures compliance with content regulations and guidelines.

- Actors: VPCSM Compliance Module, Content Moderators

- Trigger: VPCSM analyzes video content for compliance.

- Preconditions: VPCSM is equipped with content regulation measures.

- Basic Flow:

1. The Compliance Module checks the video content against legal or platform-specific guidelines to identify potential violations.

2. Content Moderators take necessary actions, such as content removal or age restriction, based on the compliance results.

35. \*\*Integration with Cloud Services\*\*

- Use Case: VPCSM integrates with popular cloud services for enhanced capabilities.

- Actors: VPCSM Cloud Integration Module, Cloud Service Providers

- Trigger: VPCSM requires cloud-based resources and services.

- Preconditions: VPCSM has integration capabilities with various cloud service providers.

- Basic Flow:

1. The Cloud Integration Module facilitates communication and data exchange between the VPCSM and cloud services.

2. Cloud resources are utilized to enhance scalability, cost-effectiveness, and accessibility.

36. \*\*Transparent Explainability\*\*

- Use Case: VPCSM provides transparent explanations for its analysis outcomes.

- Actors: VPCSM Explainability Module, Users

- Trigger: Users request insights into the VPCSM's decision-making process.

- Preconditions: VPCSM incorporates explainability features.

- Basic Flow:

1. The Explainability Module justifies the VPCSM's decisions and provides insights into how certain classifications or sentiments were determined.

2. Users gain a better understanding of the VPCSM's inner workings and build trust in its results.

37. \*\*Comprehensive Error Handling and Reporting\*\*

- Use Case: VPCSM handles errors comprehensively and provides detailed error reports.

- Actors: VPCSM Error Handling Module, Users

- Trigger: Errors occur during video analysis or processing.

- Preconditions: VPCSM is equipped with error handling mechanisms.

- Basic Flow:

1. The Error Handling Module logs and reports errors encountered during video analysis.

2. Users receive clear messages and troubleshooting instructions when issues occur.

38. \*\*Collaborative Moderation and Annotation\*\*

- Use Case: VPCSM facilitates collaborative moderation and annotation of video content.

- Actors: VPCSM Collaboration Module, Content Moderators

- Trigger: Multiple moderators collaborate to review and categorize videos.

- Preconditions: VPCSM provides a collaborative platform for moderation.

- Basic Flow:

1. Content Moderators work together using the Collaboration Module to review, classify, and tag videos.

2. Collaborative features improve efficiency, accuracy, and workload distribution.

39. \*\*Support for Multiple Video Sources\*\*

- Use Case: VPCSM supports multiple video sources for analysis.

- Actors: VPCSM Input Module, Video Source Platforms

- Trigger: Video content is uploaded or streamed from various platforms.

- Preconditions: VPCSM is designed to handle diverse video sources.

- Basic Flow:

1. The Input Module processes video content from various platforms, including social media, streaming services, and user-uploaded videos.

2. The VPCSM ensures compatibility with multiple video sources, ensuring flexibility and broad application possibilities.

40. \*\*Transparent Data Handling and Storage Policies\*\*

- Use Case: VPCSM provides transparency in data handling and storage practices.

- Actors: VPCSM Data Management Team, Users

- Trigger: Users seek information about data privacy and storage.

- Preconditions: VPCSM adheres to transparent data handling policies.

- Basic Flow:

1. The Data Management Team communicates how user data, video content, and analysis results are processed, stored, and utilized.

2. Transparent data practices instill user trust in data protection and responsible data management.

41. \*\*Inclusive Content Analysis\*\*

- Use Case: VPCSM performs inclusive content analysis without biased classifications.

- Actors: VPCSM Content Analysis Module, Diversity & Inclusion Oversight

- Trigger: Video content is analyzed for categorization and sentiment.

- Preconditions: VPCSM is designed to avoid biased content classifications.

- Basic Flow:

1. The Content Analysis Module ensures that content categorization is not influenced by factors like race, gender, religion, or political affiliations.

2. Diversity & Inclusion Oversight ensures fair and unbiased treatment of all video content.

42. \*\*Integration with Existing Video Platforms\*\*

- Use Case: VPCSM seamlessly integrates with existing video platforms and content management systems.

- Actors: VPCSM Integration Team, Video Platform Administrators

- Trigger: Video platform administrators seek to enhance content analysis capabilities.

- Preconditions: VPCSM provides APIs or plugins for integration.

- Basic Flow:

1. The Integration Team collaborates with Video Platform Administrators to integrate the VPCSM into their existing workflows.

2. Integration with video platforms streamlines content management and enhances content creators' productivity.

43. \*\*Automated Reporting and Analytics\*\*

- Use Case: VPCSM generates automated reports and analytics on video content.

- Actors: VPCSM Reporting Module, Content Creators, Marketers, Researchers

- Trigger: Users require insights into video content performance.

- Preconditions: VPCSM incorporates analytics and reporting features.

- Basic Flow:

1. The Reporting Module generates comprehensive reports and visualizations, providing valuable information about video content distribution, sentiments, and categories.

2. Content Creators, Marketers, and Researchers use these insights to make data-driven decisions and understand their audience better.

44. \*\*Customizable Content Filtering Rules\*\*

- Use Case: VPCSM allows users to define customizable content filtering rules.

- Actors: VPCSM Admin Panel, Content Moderators

- Trigger: Users want to set specific criteria for content filtering.

- Preconditions: VPCSM is equipped with customizable filtering features.

- Basic Flow:

1. Users access the Admin Panel to define rules based on keywords, tags, or patterns to filter out inappropriate or sensitive content automatically.

2. Content Moderators monitor and adjust the filtering rules to ensure content quality and user safety.

45. \*\*Customizable Sentiment Analysis Categories\*\*

- Use Case: VPCSM enables users to customize sentiment analysis categories.

- Actors: VPCSM Sentiment Analysis Module, Users

- Trigger: Users want sentiment labels tailored to their specific use cases.

- Preconditions: VPCSM provides options for sentiment category customization.

- Basic Flow:

1. The Sentiment Analysis Module allows users to define sentiment labels (e.g., "Excited," "Concerned," "Relieved") that best reflect the emotional tones relevant to their video content.

2. Customized sentiment analysis categories enhance sentiment accuracy and understanding.

46. \*\*Integration with Social Media Platforms\*\*

- Use Case: VPCSM seamlessly integrates with popular social media platforms for content analysis.

- Actors: VPCSM Social Media Integration Module, Social Media Platform APIs

- Trigger: Users want to analyze and moderate video content from social media feeds.

- Preconditions: VPCSM is designed for integration with social media platforms.

- Basic Flow:

1. The Social Media Integration Module leverages APIs or plugins to access video content from platforms like Facebook, Twitter, Instagram, and YouTube.

2. VPCSM analyzes and moderates the video content, providing insights to users.

47. \*\*Historical Video Analysis\*\*

- Use Case: VPCSM provides historical video analysis capabilities for valuable insights.

- Actors: VPCSM Historical Analysis Module, Content Analysts

- Trigger: Users want to analyze archived or previously uploaded videos.

- Preconditions: VPCSM supports advanced search and filtering options.

- Basic Flow:

1. Content Analysts use the Historical Analysis Module to retrieve and analyze videos based on specific timeframes, topics, or user interactions.

2. Historical video analysis provides valuable insights and sentiment trends.

48. \*\*Emotion-Driven Content Tagging\*\*

- Use Case: VPCSM automatically tags video content based on dominant emotions detected.

- Actors: VPCSM Emotion Tagging Module, Content Categorization System

- Trigger: Video content is analyzed for emotion detection.

- Preconditions: VPCSM includes emotion detection capabilities.

- Basic Flow:

1. The Emotion Tagging Module assigns relevant emotion-based tags (e.g., "Happy," "Sad," "Excited") to facilitate emotion-driven content discovery and categorization.

49. \*\*Sentiment-Based Content Moderation\*\*

- Use Case: VPCSM incorporates sentiment analysis results into content moderation decisions.

- Actors: VPCSM Content Moderation Module, Content Reviewers

- Trigger: Content is being reviewed for moderation.

- Preconditions: VPCSM provides sentiment analysis scores for content.

- Basic Flow:

1. The Content Moderation Module considers sentiment analysis results to determine the appropriate content rating or moderation actions, ensuring content aligns with the intended audience's emotional sensitivities.

2. Content Reviewers use sentiment-based insights to make informed moderation decisions.

50. \*\*Insights for Content Optimization\*\*

- Use Case: VPCSM provides actionable insights for optimizing video content.

- Actors: VPCSM Analytics Module, Content Creators, Marketers

- Trigger: Users seek to optimize video content performance.

- Preconditions: VPCSM generates detailed sentiment and categorization analytics.

- Basic Flow:

1. The Analytics Module analyzes sentiment data and identifies areas for improvement, such as enhancing emotional engagement, refining content messaging, and tailoring content for specific target audiences.

2. Content Creators and Marketers use insights for content optimization and better engagement.

51. \*\*Accessibility Features\*\*

- Use Case: VPCSM incorporates accessibility features for inclusive video content.

- Actors: VPCSM Accessibility Module, Users with Hearing or Visual Impairments

- Trigger: Users with impairments access video content.

- Preconditions: VPCSM supports closed captioning and audio descriptions.

- Basic Flow:

1. The Accessibility Module generates closed captions and audio descriptions automatically for video content, enhancing the video-watching experience for users with hearing or visual impairments.

52. \*\*Enhanced Anomaly Detection\*\*

- Use Case: VPCSM continuously improves anomaly detection using AI and ML techniques.

- Actors: VPCSM Anomaly Detection Module, AI/ML Model Trainer

- Trigger: VPCSM identifies unusual or harmful content in videos.

- Preconditions: VPCSM employs unsupervised learning methods for anomaly detection.

- Basic Flow:

1. The Anomaly Detection Module leverages AI and ML techniques, adapting and learning from new patterns and emerging threats to maintain a safe and secure environment for users.

2. The AI/ML Model Trainer periodically updates and retrains the anomaly detection models with new data.

53. \*\*Fraud Detection and Content Authenticity\*\*

- Use Case: VPCSM includes fraud detection mechanisms and verifies content authenticity.

- Actors: VPCSM Fraud Detection Module, Content Verification Team

- Trigger: Potentially fraudulent or manipulated videos are detected.

- Preconditions: VPCSM is equipped with fraud detection features.

- Basic Flow:

1. The Fraud Detection Module identifies and flags potentially fraudulent or manipulated videos.

2. The Content Verification Team investigates flagged videos to verify their authenticity.

54. \*\*Integration with Video Editing Tools\*\*

- Use Case: VPCSM seamlessly integrates with video editing tools.

- Actors: VPCSM Video Editing Integration Module, Video Editors

- Trigger: Video Editors want to analyze and categorize content within their editing workflows.

- Preconditions: VPCSM provides APIs or plugins for integration with video editing tools.

- Basic Flow:

1. The Video Editing Integration Module allows video editors to access VPCSM analysis and categorization functionalities directly within their editing workflows.

2. Integration with video editing tools streamlines content management and enhances video editing efficiency.

55. \*\*Bias Detection and Mitigation\*\*

- Use Case: VPCSM includes bias detection and mitigation mechanisms.

- Actors: VPCSM Bias Detection Module, Ethical Oversight Team

- Trigger: Users want to ensure fair and unbiased content classification and sentiment analysis.

- Preconditions: VPCSM is designed for bias detection and mitigation.

- Basic Flow:

1. The Bias Detection Module identifies potential biases in content classification and sentiment analysis results.

2. The Ethical Oversight Team reviews and addresses any identified biases to ensure fair treatment of all video content.

56. \*\*Compliance with Accessibility Regulations\*\*

- Use Case: VPCSM ensures compliance with accessibility regulations and guidelines.

- Actors: VPCSM Compliance Module, Accessibility Standards Reviewers

- Trigger: VPCSM analyzes video content for accessibility features.

- Preconditions: VPCSM supports closed captioning, audio descriptions, and other accessibility features.

- Basic Flow:

1. The Compliance Module reviews VPCSM's adherence to accessibility regulations and guidelines, ensuring support for closed captioning, audio descriptions, and other accessibility features.

2. Accessibility Standards Reviewers validate compliance with accessibility regulations.

57. \*\*Compliance with Content Categorization Standards\*\*

- Use Case: VPCSM ensures compliance with content categorization standards and regulations.

- Actors: VPCSM Compliance Module, Content Regulation Reviewers

- Trigger: VPCSM categorizes video content according to specific standards.

- Preconditions: VPCSM follows ethical content classification standards and guidelines.

- Basic Flow:

1. The Compliance Module reviews VPCSM's adherence to content categorization standards, ensuring that classifications are objective and not influenced by biased factors.

2. Content Regulation Reviewers validate compliance with content categorization standards.

58. \*\*Adherence to Privacy and Data Protection Regulations\*\*

- Use Case: VPCSM adheres to privacy and data protection regulations.

- Actors: VPCSM Data Protection Module, Data Privacy Compliance Team

- Trigger: VPCSM handles user data and video content during analysis.

- Preconditions: VPCSM provides transparent data handling and storage policies.

- Basic Flow:

1. The Data Protection Module ensures that user data, video content, and analysis results are processed, stored, and utilized in compliance with privacy and data protection regulations.

2. The Data Privacy Compliance Team reviews and validates adherence to data protection regulations.

59. \*\*Incremental Model Training for Continuous Improvement\*\*

- Use Case: VPCSM supports incremental model training for continuous improvement.

- Actors: VPCSM Model Training Module, Data Science Team

- Trigger: Users want to enhance model accuracy and adapt to new patterns.

- Preconditions: VPCSM is designed for model training with new data.

- Basic Flow:

1. The Model Training Module allows users to periodically update and retrain machine learning models with new data to improve accuracy and adapt to evolving patterns.

2. The Data Science Team leverages incremental training to continuously improve model performance.

60. \*\*Scalability and Performance Optimization\*\*

- Use Case: VPCSM ensures scalability and optimized performance.

- Actors: VPCSM System Administrators, Scalability Engineers

- Trigger: VPCSM is experiencing high demand for video analysis.

- Preconditions: VPCSM is designed for parallel processing and optimization.

- Basic Flow:

1. System Administrators monitor VPCSM performance and scalability, ensuring efficient video analysis even during peak usage periods.

2. Scalability Engineers optimize system performance to prevent bottlenecks and maintain smooth operations as the user base and video content grow.

**User Case from User Stories for News Sentiment**

**1. Data Collection Use Case:**

* Use Case: System obtains text data from video transcripts and trending news articles.
* Actors: Developer, Data Acquisition Specialists, System
* Trigger: Data acquisition process starts
* Preconditions: None
* Basic Flow:
  1. Developer collaborates with data acquisition specialists to obtain text data from video transcripts, extracting information about the video's content and audio.
  2. The team gathers text data from trending news articles, including information about the news category and source.

**2. Data Preprocessing Use Case:**

* Use Case: System cleans and preprocesses the text data from video transcripts and news articles.
* Actors: Data Engineer, System
* Trigger: Data preprocessing process starts
* Preconditions: Text data from video transcripts and news articles is available
* Basic Flow:
  1. Data Engineer takes responsibility for cleaning and preprocessing the text data obtained from video transcripts and news articles.
  2. Advanced tasks such as tokenization, lowercasing, and removing stop words are performed to ensure the data is ready for sentiment analysis.
  3. Data normalization or standardization is applied to enhance the quality of the text data.
  4. The processed data is made available to the data analysis team for further sentiment analysis and other NLP tasks.

**3. Sentiment Analysis for Video Transcripts Use Case:**

* Use Case: System conducts sentiment analysis on text data from video transcripts.
* Actors: Data Scientist, NLP Experts, System
* Trigger: Sentiment analysis process starts
* Preconditions: Preprocessed text data from video transcripts is available
* Basic Flow:
  1. Data Scientist aims to conduct sentiment analysis on the text data extracted from video transcripts.
  2. Advanced Natural Language Processing (NLP) techniques are applied to analyze the emotional tone of the video transcripts.
  3. Collaboration with NLP experts helps in selecting and employing a suitable sentiment analysis model such as LSTM or CNN for accurate results.
  4. The sentiment analysis categorizes the video transcripts into positive, neutral, or negative sentiments, providing valuable insights for further analysis and decision-making.

**4. Sentiment Analysis for News Articles Use Case:**

* Use Case: System performs sentiment analysis on text data from news articles.
* Actors: Data Scientist, NLP Specialists, System
* Trigger: Sentiment analysis process starts
* Preconditions: Preprocessed text data from news articles is available
* Basic Flow:
  1. Data Scientist focuses on performing sentiment analysis on the text data extracted from news articles.
  2. Collaboration with NLP specialists helps in leveraging state-of-the-art sentiment analysis models such as BERT and GPT for accurate and reliable results.
  3. The sentiment analysis categorizes the sentiments of news articles into positive, neutral, or negative, providing valuable insights into public opinion and emotional responses to news events.
  4. The analyzed sentiments will be further utilized for various applications, such as trend analysis, opinion mining, and sentiment-driven decision-making.

**5. Integration and News Generation Use Case:**

* Use Case: System integrates sentiment analysis (e.g., BERT, GPT) with the automated news generator.
* Actors: Software Engineer, News Generation Team, System
* Trigger: Integration process starts
* Preconditions: Sentiment analysis results are available, and the automated news generator is in place
* Basic Flow:
  1. Software Engineer collaborates with the news generation team to integrate advanced sentiment analysis (e.g., BERT, GPT) with the automated news generator.
  2. The automated news generator utilizes sentiment analysis results to categorize and generate news articles with appropriate emotional context.
  3. Continuous iterations based on sentiment analysis insights improve the news generation process, enhancing accuracy and relevance.

**6. Visualization of Sentiment Analysis Results Use Case:**

* Use Case: System creates a user-friendly interface for displaying sentiment analysis results.
* Actors: Frontend Developer, Data Visualization Experts, System
* Trigger: Visualization process starts
* Preconditions: Sentiment analysis results are available
* Basic Flow:
  1. Frontend Developer collaborates with data visualization experts to create a user-friendly interface for displaying sentiment analysis results.
  2. The interface presents sentiment scores and emotional categories using interactive charts or graphs, providing users with a clear understanding of the sentiment associated with news articles.
  3. Technologies like D3.js or Chart.js are leveraged to ensure an engaging and informative visualization of the sentiment analysis data, enhancing the overall user experience.

**7. User Personalization Use Case:**

* Use Case: System implements a user personalization feature for sentiment analysis.
* Actors: Backend Developer, User Experience Specialists, System
* Trigger: Personalization feature setup
* Preconditions: User profiles and data storage are available
* Basic Flow:
  1. Backend Developer collaborates with user experience specialists to implement a user personalization feature for sentiment analysis.
  2. Users can set their preferences based on topics or categories of interest for sentiment analysis.
  3. The system provides personalized sentiment analysis updates to users, tailoring the content to their specific interests and enhancing their overall experience.

**8. Verification of News Sources Use Case:**

* Use Case: System implements a mechanism to verify the authenticity and credibility of news articles for accurate sentiment analysis.
* Actors: Data Engineer, Data Verification Team, System
* Trigger: Verification process starts
* Preconditions: Sentiment analysis results are available, and the mechanism for verification is in place
* Basic Flow:
  1. Data Engineer collaborates with the data verification team to implement a mechanism that ensures the authenticity and credibility of news articles for accurate sentiment analysis.
  2. The mechanism verifies news sources and flags or excludes unverified or potentially unreliable news articles from the sentiment analysis results.
  3. Technologies like web scraping and source credibility databases are utilized to enhance the reliability and integrity of the sentiment analysis process, providing users with more trustworthy and accurate insights.

**9. Error Handling and Exception Management Use Case:**

* Use Case: System ensures effective error handling and exception management during sentiment analysis processing.
* Actors: Developer, Quality Assurance Team, System
* Trigger: Error handling process starts
* Preconditions: Sentiment analysis process is active
* Basic Flow:
  1. Developer collaborates with the quality assurance team to ensure effective error handling and exception management during sentiment analysis processing.
  2. The system is equipped to handle unexpected issues or failures gracefully, providing clear and informative error messages to assist users in understanding the nature of errors.
  3. Rigorous testing and continuous improvement enhance the system's resilience and reliability, ensuring a smooth and error-free sentiment analysis experience for users

**10. Data Storage and Management Use Case:**

* Use Case: System ensures secure and compliant data storage for sentiment analysis data.
* Actors: Data Engineer, Sentiment Analysis Module, System
* Trigger: Data storage and management process starts
* Preconditions: Sentiment analysis data is available
* Basic Flow:
  1. Data Engineer ensures secure and compliant data storage for sentiment analysis data.
  2. Data storage and management processes are optimized for efficient retrieval and analysis.
  3. Robust access controls are implemented to safeguard sentiment data, ensuring authorized access only.
  4. Seamless integration with the sentiment analysis module allows easy data accessibility for analysis and reporting.

**11. Reporting and Analytics Use Case:**

* Use Case: System generates comprehensive sentiment analysis reports and analytics.
* Actors: Data Scientist, Content Creators, Journalists, Stakeholders, System
* Trigger: Reporting and analytics process starts
* Preconditions: Sentiment analysis data is available
* Basic Flow:
  1. Data Scientist generates comprehensive sentiment analysis reports and analytics.
  2. Insights into emotional trends are provided through these reports.
  3. Sentiment analysis trends and patterns are presented to content creators, journalists, and stakeholders for decision-making.
  4. The emotional impact of news articles and video content is understood, enabling informed content creation and strategy.

**12. Feedback and Validation Use Case:**

* Use Case: System gathers user feedback on sentiment analysis results and conducts validation exercises.
* Actors: Developer, User Feedback Team, System
* Trigger: Feedback and validation process starts
* Preconditions: Sentiment analysis results are available
* Basic Flow:
  1. Developer collaborates with the user feedback team to gather user feedback on sentiment analysis results.
  2. Validation exercises are conducted to ensure accuracy and reliability of sentiment analysis outcomes.
  3. Sentiment analysis models are constantly refined based on user inputs and validation results.
  4. Continuous improvement in sentiment analysis is pursued to meet user needs and expectations.

**13. Entity Recognition and Named Entity Analysis Use Case:**

* Use Case: System implements entity recognition techniques for named entity analysis.
* Actors: Data Scientist, System
* Trigger: Entity recognition process starts
* Preconditions: News articles and video transcripts are available
* Basic Flow:
  1. Data Scientist implements entity recognition techniques to identify and extract entities from news articles and video transcripts.
  2. The sentiment associated with each entity is analyzed to provide more granular sentiment insights.
  3. Users can understand how specific entities (e.g., people, organizations, locations) are perceived in the news, enhancing the depth of sentiment analysis.

**14. Emotion Analysis Use Case:**

* Use Case: System enhances the sentiment analysis module with emotion analysis capabilities.
* Actors: Data Scientist, System
* Trigger: Emotion analysis process starts
* Preconditions: Sentiment analysis data is available
* Basic Flow:
  1. Data Scientist enhances the sentiment analysis module with algorithms to detect emotions conveyed in the text data, such as joy, sadness, anger, fear, etc.
  2. Users are provided with deeper emotional insights beyond positive, neutral, or negative sentiments, enabling a more nuanced understanding of the emotional context in news articles and video transcripts.

**15. Aspect-Based Sentiment Analysis Use Case:**

* Use Case: System extends sentiment analysis to perform aspect-based sentiment analysis.
* Actors: Data Scientist, System
* Trigger: Aspect-based sentiment analysis process starts
* Preconditions: News articles and video transcripts are available
* Basic Flow:
  1. Data Scientist extends sentiment analysis to implement techniques that identify sentiments towards specific aspects or features within news articles and video transcripts.
  2. Users are provided with a breakdown of sentiment scores for different aspects, offering a more detailed understanding of emotional responses to specific topics.
  3. The sentiment analysis module is enriched to deliver more granular insights, enhancing the value and depth of emotional understanding for users.

**16. Sentiment Trend Analysis Use Case:**

* Use Case: System conducts sentiment trend analysis over time to identify changes in emotional tone across various topics or events.
* Actors: Data Scientist, System
* Trigger: Sentiment trend analysis process starts
* Preconditions: Sentiment analysis data is available over time
* Basic Flow:
  1. Data Scientist conducts sentiment trend analysis using time-series analysis techniques to identify changes in emotional tone over time.
  2. Sentiment trends are visualized and presented to users, enabling them to track emotional shifts in the news over time.
  3. Users gain valuable insights into the evolving emotional landscape, aiding in the understanding of long-term sentiment patterns and their impact on news content.

**17. Multilingual Sentiment Analysis Use Case:**

* Use Case: System improves language support by extending the sentiment analysis module to handle multiple languages beyond English.
* Actors: Developer, System
* Trigger: Multilingual sentiment analysis process starts
* Preconditions: Sentiment analysis data in multiple languages is available
* Basic Flow:
  1. Developer improves language support by extending the sentiment analysis module to handle multiple languages beyond English.
  2. Either multilingual sentiment analysis models are utilized, or text data translation is implemented to the primary language for sentiment analysis.
  3. Users can access sentiment insights from a wide range of sources, regardless of the language of the content.
  4. The sentiment analysis module's versatility is enhanced, providing a more inclusive and comprehensive analysis of sentiments from diverse linguistic sources.

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**18. Sentiment Analysis for Social Media Data Use Case:**

* Use Case: System expands data collection to include social media data and applies sentiment analysis.
* Actors: Data Engineer, Social Media Data Specialists, System
* Trigger: Social media data collection and sentiment analysis process starts
* Preconditions: Social media data related to trending topics is available
* Basic Flow:
  1. Data Engineer collaborates with social media data specialists to expand data collection to include social media data related to trending topics.
  2. Sentiment analysis is applied to social media content to capture public sentiment and reactions.
  3. Users are offered a broader view of emotional responses across various platforms, providing a comprehensive understanding of sentiments related to trending topics in social media.
  4. The sentiment analysis system is enhanced by incorporating social media data, delivering valuable insights for users and supporting decision-making processes based on public sentiment.

**19. Sentiment-Based Content Filtering and Recommendation Use Case:**

* Use Case: System implements content filtering and sentiment-based recommendation.
* Actors: Backend Developer, Users, System
* Trigger: Content filtering and recommendation process starts
* Preconditions: Sentiment analysis results are available
* Basic Flow:
  1. Backend Developer implements a content filtering system based on sentiment analysis results.
  2. News articles are excluded or prioritized for specific users based on their emotional preferences.
  3. Sentiment-based recommendations are provided to users, suggesting news articles that match their preferred emotional tone.
  4. Users' news consumption experience is enhanced by delivering content that aligns with their emotional preferences, making the news more personalized and relevant to their interests.

**20. Sentiment Bias Detection Use Case:**

* Use Case: System develops algorithms to detect potential biases in sentiment analysis results.
* Actors: Data Scientist, Ethicists, Subject Matter Experts, System
* Trigger: Sentiment bias detection process starts
* Preconditions: Sentiment analysis results are available
* Basic Flow:
  1. Data Scientist develops algorithms to detect potential biases in sentiment analysis results, especially for polarizing topics or sensitive subjects.
  2. Collaboration with ethicists and subject matter experts addresses any biases identified and improves the model's fairness and accuracy.
  3. The sentiment analysis remains impartial and reliable by continuously refining the algorithms to mitigate biases and provide more accurate and unbiased results.
  4. Ethical standards in sentiment analysis are upheld, promoting fairness and transparency in the process to deliver trustworthy insights to users.

**21. Real-time Sentiment Tracking Use Case:**

* Use Case: System enhances real-time sentiment analysis capabilities to continuously track sentiment changes.
* Actors: Backend Developer, Data Streaming Team, System
* Trigger: Real-time sentiment tracking process starts
* Preconditions: Real-time sentiment analysis data is available
* Basic Flow:
  1. Backend Developer enhances real-time sentiment analysis capabilities to continuously track sentiment changes for evolving topics and breaking news events.
  2. Collaboration with the data streaming team ensures that sentiment analysis results and insights are updated in real-time as new data becomes available.
  3. Users are provided with up-to-the-minute emotional trends, ensuring they have access to the most current sentiment analysis insights for dynamic topics and breaking news events.
  4. The overall user experience is improved by delivering timely and relevant sentiment analysis information, enabling users to stay informed about the emotional landscape as it evolves in real-time.

**22. Sentiment Analysis Feedback Loop Use Case:**

* Use Case: System implements a feedback loop to gather user feedback on sentiment analysis results.
* Actors: Developer, User Feedback Team, System
* Trigger: Feedback loop process starts
* Preconditions: Sentiment analysis results are available
* Basic Flow:
  1. Developer implements a feedback loop to gather user feedback on sentiment analysis results.
  2. Collaboration with the user feedback team helps collect and analyze user inputs.
  3. The feedback is used to continuously improve sentiment analysis models and algorithms, making the platform more accurate and relevant to user needs.
  4. A user-centric sentiment analysis platform evolves based on real user experiences and preferences, ensuring high-quality and valuable sentiment analysis insights.

**23. Sentiment Analysis API Use Case:**

* Use Case: System creates an API for sentiment analysis functionalities.
* Actors: Developer, Integration Specialists, System
* Trigger: API implementation process starts
* Preconditions: Sentiment analysis module and functionalities are available
* Basic Flow:
  1. Developer creates an API for the sentiment analysis module to provide access to sentiment analysis functionalities.
  2. Collaboration with integration specialists enables seamless integration with external platforms for sentiment analysis purposes.
  3. The platform's reach and usability are expanded, allowing other systems or applications to access sentiment analysis capabilities through the API.
  4. The sentiment analysis platform's versatility is enhanced, making it more accessible and valuable to a broader range of users and applications.

**24. Performance Monitoring and Optimization Use Case:**

* Use Case: System sets up monitoring tools to track sentiment analysis module performance.
* Actors: Backend Developer, System
* Trigger: Performance monitoring process starts
* Preconditions: Sentiment analysis module is active
* Basic Flow:
  1. Backend Developer sets up monitoring tools to track sentiment analysis module performance, including response time, resource utilization, and accuracy.
  2. Continuous optimization is performed to meet performance requirements and handle increasing user demands.
  3. The system ensures smooth and efficient sentiment analysis operations by fine-tuning the system based on performance metrics.
  4. Users are provided with a reliable and responsive sentiment analysis platform, enhancing the overall user experience and satisfaction.

**25. A/B Testing for Model Selection Use Case:**

* Use Case: System conducts A/B testing to compare the performance of different sentiment analysis algorithms and models.
* Actors: Data Scientist, User Experience Specialists, System
* Trigger: A/B testing process starts
* Preconditions: Multiple sentiment analysis models are available
* Basic Flow:
  1. Data Scientist conducts A/B testing to compare the performance of different sentiment analysis algorithms and models.
  2. Collaboration with user experience specialists helps select the most effective model based on performance metrics and user feedback.
  3. The sentiment analysis platform utilizes the best-performing model, providing users with accurate and reliable sentiment analysis outcomes.
  4. The model selection process is continuously monitored and updated to maintain the platform's effectiveness and meet user expectations.

**26. Continuous Model Retraining Use Case:**

* Use Case: System establishes a process for periodic model retraining to adapt to changing language patterns and user preferences.
* Actors: Data Scientist, Data Engineering Team, System
* Trigger: Model retraining process starts
* Preconditions: Sentiment analysis models are in use
* Basic Flow:
  1. Data Scientist establishes a process for periodic model retraining to adapt to changing language patterns and user preferences.
  2. Collaboration with the data engineering team keeps the sentiment analysis models up-to-date.
  3. High accuracy and relevance in sentiment analysis results are ensured by continuously updating and improving the models.
  4. Users are provided with reliable and up-to-date sentiment analysis insights that align with current language trends and user needs.

**30. Sentiment Transfer Use Case:**

* Use Case: System explores sentiment transfer techniques to modify the emotional tone of news articles or video transcripts based on user preferences.
* Actors: Developer, Users, System
* Trigger: Sentiment transfer process starts
* Preconditions: Sentiment analysis results are available
* Basic Flow:
  1. Developer explores sentiment transfer techniques, such as style transfer or emotion transfer models, to modify the emotional tone of news articles or video transcripts based on user preferences.
  2. Advanced NLP techniques and deep learning frameworks like TensorFlow or PyTorch are utilized to implement sentiment transfer capabilities.
  3. Users are enabled to customize the sentiment of the generated content according to their emotional preferences, fostering a more personalized and emotionally resonant news consumption experience.
  4. The platform empowers users to interact with news content in a way that aligns with their emotional preferences, creating a deeper and more meaningful connection with the news.

**31. Explainable Sentiment Analysis Use Case:**

* Use Case: System implements methods to provide explanations for the sentiment analysis results to enhance transparency and user trust.
* Actors: Data Scientist, System
* Trigger: Explainable sentiment analysis process starts
* Preconditions: Sentiment analysis results are available
* Basic Flow:
  1. Data Scientist implements methods to provide explanations for the sentiment analysis results to enhance transparency and user trust.
  2. Techniques like attention maps or saliency analysis are utilized to highlight important words or phrases influencing the sentiment in each analyzed content.
  3. The sentiment analysis process is enhanced to be more interpretable and transparent, allowing users to understand the reasoning behind sentiment predictions.
  4. The platform fosters user confidence and promotes a deeper understanding of the emotional aspects in the analyzed content by providing explainable sentiment analysis.

**32. Sentiment Analysis for Audio Transcripts Use Case:**

* Use Case: System extends the sentiment analysis module to include the analysis of audio transcripts from videos or podcasts.
* Actors: Data Engineer, System
* Trigger: Sentiment analysis for audio transcripts process starts
* Preconditions: Audio transcripts are available
* Basic Flow:
  1. Data Engineer extends the sentiment analysis module to include the analysis of audio transcripts from videos or podcasts.
  2. Audio processing and speech-to-text techniques are utilized to convert audio data into text for sentiment analysis.
  3. The platform is enabled to handle various content formats, providing users with sentiment insights from both textual and audio content.
  4. The platform's capability to process diverse forms of content is expanded, enhancing its value and usability for users seeking sentiment analysis across different media types.

**33. Sentiment Analysis for Live Video Streams Use Case:**

* Use Case: System develops real-time sentiment analysis capabilities for live video streams and broadcasts.
* Actors: Data Engineer, Data Streaming Team, Content Creators, Broadcasters, System
* Trigger: Real-time sentiment analysis for live video streams process starts
* Preconditions: Live video streaming data is available
* Basic Flow:
  1. Data Engineer collaborates with the data streaming team to develop real-time sentiment analysis capabilities for live video streams and broadcasts.
  2. Data streaming and processing mechanisms are implemented to analyze sentiment in real-time from live video content.
  3. Real-time emotional insights are provided to content creators and broadcasters, enabling them to gauge audience reactions as events unfold.
  4. The platform's value is enhanced by delivering instant feedback on audience sentiments during live video streams, supporting content creators in making data-driven decisions and engaging with their audience effectively.

**34. Sentiment Analysis for Historical Data Use Case:**

* Use Case: System implements sentiment analysis for historical news articles and video transcripts.
* Actors: Data Scientist, System
* Trigger: Sentiment analysis for historical data process starts
* Preconditions: Historical data is available
* Basic Flow:
  1. Data Scientist implements sentiment analysis for historical news articles and video transcripts.
  2. Long-term sentiment trends are analyzed by processing sentiment data from past records.
  3. Patterns and recurring emotional themes in historical sentiment data are identified.
  4. Users are offered a broader historical perspective on emotional trends, providing valuable insights into how sentiments have evolved over time in response to various events and topics.
  5. The platform enriches users' understanding of emotional trends and contributes to a more comprehensive analysis of sentiment across different time periods.

**35. Sentiment Analysis Model Interpretability Use Case:**

* Use Case: System focuses on developing interpretable sentiment analysis models using techniques like LIME (Local Interpretable Model-Agnostic Explanations) or SHAP (SHapley Additive exPlanations).
* Actors: Data Scientist, System
* Trigger: Sentiment analysis model interpretability process starts
* Preconditions: Sentiment analysis models are available
* Basic Flow:
  1. Data Scientist focuses on developing interpretable sentiment analysis models using techniques like LIME (Local Interpretable Model-Agnostic Explanations) or SHAP (SHapley Additive exPlanations).
  2. Model interpretability techniques are utilized to gain insights into how the sentiment analysis model arrives at its predictions and sentiment classifications.
  3. User trust and understanding are fostered by providing clear and transparent explanations for the sentiment analysis results, enhancing the platform's credibility and user confidence.
  4. The sentiment analysis model is designed to be interpretable, enabling users to comprehend the reasoning behind sentiment predictions and facilitating meaningful interactions with the sentiment analysis insights.

1. Sentiment Analysis for Different Content Formats Use Case:

* Use Case: System adapts the sentiment analysis module to handle diverse content formats, such as opinion editorials, blog posts, or product reviews.
* Actors: Developer, Users, System
* Trigger: Sentiment analysis for different content formats process starts
* Preconditions: Content in various formats is available
* Basic Flow:
  1. Developer adapts the sentiment analysis module to handle diverse content formats, such as opinion editorials, blog posts, or product reviews.
  2. The sentiment analysis approach is customized for each content type, considering the unique characteristics and language patterns of different formats.
  3. Accuracy is improved by tailoring the sentiment analysis to suit the specific context of each content type.
  4. Users receive more relevant and accurate sentiment insights for various types of content, enhancing the overall user experience and satisfaction.

1. Real-time Sentiment-Based Notifications Use Case:

* Use Case: System integrates sentiment analysis results with push notification systems to enable real-time updates on trending emotional topics.
* Actors: Backend Developer, Users, System
* Trigger: Real-time sentiment-based notifications process starts
* Preconditions: Sentiment analysis results are available
* Basic Flow:
  1. Backend Developer integrates sentiment analysis results with push notification systems to enable real-time updates on trending emotional topics.
  2. Personalized notifications are implemented for users based on their emotional preferences, delivering content aligned with their preferred sentiments.
  3. Users experience a news consumption experience with timely and relevant updates on emotional trends, allowing them to stay informed about topics of interest with a personalized touch.
  4. The platform creates a dynamic and user-centric environment by delivering sentiment-based notifications tailored to individual preferences, keeping users engaged and informed.

1. Sentiment Analysis for Market Analysis Use Case:

* Use Case: System extends the sentiment analysis module to perform market sentiment analysis, focusing on analyzing the sentiment of financial news and its impact on market trends.
* Actors: Data Scientist, Investors, Financial Analysts, System
* Trigger: Market sentiment analysis process starts
* Preconditions: Financial news data is available
* Basic Flow:
  1. Data Scientist extends the sentiment analysis module to perform market sentiment analysis, focusing on analyzing the sentiment of financial news and its impact on market trends.
  2. NLP techniques and pre-trained sentiment analysis models like BERT or LSTM are utilized to extract sentiment from financial news articles.
  3. Insights are provided to investors and financial analysts, enabling them to make informed decisions based on the sentiment analysis of financial news.
  4. The platform delivers real-time market sentiment insights, supporting users in understanding the emotional landscape and its influence on market trends and investment decisions.

1. Sentiment Analysis for Brand Reputation Use Case:

* Use Case: System applies sentiment analysis using advanced NLP techniques to monitor the sentiment surrounding a brand or organization across various media channels.
* Actors: Developer, Businesses, System
* Trigger: Sentiment analysis for brand reputation process starts
* Preconditions: Brand-related content is available from various media channels
* Basic Flow:
  1. Developer applies sentiment analysis using advanced NLP techniques and libraries like TensorFlow and Hugging Face's Transformers to monitor the sentiment surrounding a brand or organization across various media channels.
  2. Data collection mechanisms are implemented to gather brand-related content from social media, news articles, and other platforms in real-time.
  3. Pre-trained sentiment analysis models like BERT or VADER are utilized to gauge public perception and sentiment towards the brand with high accuracy.
  4. Businesses receive real-time sentiment insights, enabling them to proactively respond to brand sentiment and manage their brand's reputation effectively.

1. Cross-Lingual Sentiment Analysis Use Case:

* Use Case: System leverages advanced NLP techniques to develop cross-lingual sentiment analysis capabilities.
* Actors: Data Engineer, Users, System
* Trigger: Cross-lingual sentiment analysis process starts
* Preconditions: Content in multiple languages is available
* Basic Flow:
  1. Data Engineer leverages advanced NLP techniques and libraries like TensorFlow and Hugging Face's Transformers to develop cross-lingual sentiment analysis capabilities.
  2. Language detection algorithms using libraries like FastText or langid.py are implemented to identify the language of the content.
  3. Pre-trained multilingual sentiment analysis models such as mBERT or XLM-RoBERTa are utilized to analyze sentiment in content written in different languages.
  4. The platform is expanded to enable users to access sentiment analysis for multilingual news and video content, providing a more comprehensive understanding of global emotional responses to news and events.

**User Case of Personalization content**

Use Case 1: Personalized Content Recommendations

**Actors**: Registered User, News App System

**Trigger**: User logs in to the app and visits the homepage.

**Preconditions**: User has a registered account and has interacted with the platform.

**Basic Flow**:

1. User logs in to the app.
2. User visits the homepage.
3. The system analyzes the user's interests and interactions.
4. The system displays content recommendations on the homepage based on the analysis.

Use Case 2: Push Notifications for Breaking News

**Actors**: News App User, News App System

**Trigger**: User expresses interests or interacts with news categories.

**Preconditions**: User has engaged with various news categories or has specific interests.

**Basic Flow**:

1. User expresses interests or interacts with news categories.
2. Fresh hot topics or breaking news stories occur.
3. The system identifies relevant news based on the user's interests.
4. User receives push notifications or sees highlighted news items related to the breaking news.

Use Case 3: Location-Based News Recommendations

**Actors**: News App User, News App System

**Trigger**: User enables location access or enters their location.

**Preconditions**: The news app has access to the user's location or the user has explicitly entered their location.

**Basic Flow**:

1. User enables location access or provides their location.
2. User browses or searches for news.
3. The system filters news based on the user's location.
4. The user is presented with news recommendations that are specific to their present location or preferred location.

Use Case 4: Tailored Editorial Articles

**Actors**: News App User, News App System

**Trigger**: User accesses the editorial section.

**Preconditions**: User has previously read editorial pieces or followed certain themes.

**Basic Flow**:

1. User has previously read editorial pieces or followed specific themes.
2. User accesses the editorial section of the app.
3. The system curates and displays editorial articles that align with the user's preferences and the themes they have engaged with.

Use Case 5: Custom News Digest Generation

**Actors**: News App User, News App System

**Trigger**: User utilizes the news digest function.

**Preconditions**: User has indicated their news preferences or engaged with particular news categories.

**Basic Flow**:

1. User indicates their preferred news categories or interacts with specific news topics.
2. User utilizes the news digest function in the app.
3. The system generates a customized news digest containing top headlines and stories that match the user's preferences and chosen news categories.

Use Case 6: Personalized Advertisements and Promotions

**Actors**: News App User, News App System

**Trigger**: User encounters ads while browsing the app.

**Preconditions**: User has a history of reading specific news articles or themes.

**Basic Flow**:

1. The system records the user's history of reading particular news articles or themes.
2. While the user browses the app, they encounter advertisements and promotions that are relevant to their interests and reading habits.
3. The system displays ads and promotions tailored to the user's preferences, enhancing their browsing experience.

**Use cases of related tasks UI**

**Use Case 1:** **New User Registration on News Application**

**Actor:** New User

**Triggers:** The user accesses the news application for the first time and attempts to register for a new account.

**Preconditions:**

* The user must have a device (e.g., smartphone, tablet, or computer) with internet access.
* The news application must be installed or accessible via a web browser.
* The user must not have an existing account with the news application.

**Flow:**

* The user opens the news application on their device or visits the application's website.
* The application displays the home page or landing page with various news articles and a navigation menu.
* The user clicks on the "Sign Up" or "Register" button, indicating their intention to create a new account.
* The application presents a registration form with fields like username, email address, password, and other relevant details.
* The user enters their desired credentials in the form and submits it.

**Use Case 2: User Login on a News Application**

**Actor:** Registered User

**Triggers:**

* The user opens the news application.
* The user taps on the "Login" button.

**Preconditions:**

* The news application is installed and running on the user's device.
* The user has already registered an account on the news application.

**Flow:**

* The user opens the news application on their device.
* The user wants to access personalized features, or preferences, upload content and so on, so they tap on the "Login" button.
* The application prompts the user to enter their login credentials, such as their registered email address and password.
* The user enters their email address and password and submits the form.
* The application validates the entered credentials:
* If the email address is not registered or does not exist in the system, the application displays an error message indicating that the user should check their credentials or consider registering for an account.
* If the password is incorrect, the application displays an error message indicating that the entered password is incorrect and prompts the user to re-enter it.
* If the email address and password are correct, the application proceeds to authenticate the user.
* Upon successful authentication, the application retrieves the user's personalized data and preferences from the database, such as saved articles, favorite categories, or notification settings.

**Alternative Flow (Invalid Email or Password):**

* If the user enters an invalid email address or password, the application will display an error message and prompt the user to re-enter the correct information.

**Alternative Flow (Account Lockout):**

* If the user fails to enter the correct password after a certain number of attempts (e.g., three attempts), the application may lock the user's account for security purposes and display a message informing the user to contact customer support to reset their password or unlock the account.

**Alternative Flow (Forgot Password):**

* If the user forgets their password, the application provides a "Forgot Password" option. By clicking on it, the user can initiate a password reset process. The application will send a password reset link or verification code to the user's registered email address, allowing them to create a new password.

**Post-Conditions:**

* The user is successfully logged into the news application.
* The application displays personalized content and features based on the user's account settings and preferences.

**Use Case 3:** Guest Mode for Unregistered Users on a News Application

**Actor:** Unregistered User (Guest)

**Triggers:**

* Unregistered user opens the news application.
* User selects the "Guest Mode" option.

**Preconditions:**

* The news application is installed and accessible.
* The "Guest Mode" feature is implemented and enabled in the application.
* The user is not logged in or registered with the application.

**Flow:**

* Unregistered User opens the news application on their device.
* The application displays a welcome screen with options to "Login," "Register," or "Continue as Guest."
* The user selects "Continue as Guest" to access the guest mode.
* The user will be provided with some guest id as identity.
* Limited Access:

1. In the guest mode, the user can view the latest news articles from various categories without logging in or providing personal information.
2. The user can read the complete articles or can use SOS but cannot perform any actions like commenting, liking, or saving articles for later.
3. Features that require user authentication, such as personalized recommendations or sharing articles on social media, are disabled for guest users.

* Viewing News Articles:

1. The guest user can browse and select any news article of interest.
2. Clicking on an article will open the full content of the news with images, videos, and related links.

* Navigation:

1. The guest user can navigate back to the homepage to explore other news categories or search for specific articles.
2. The guest user can also use the application's search functionality to find articles on specific topics.

* Exiting Guest Mode:

1. At any point, the guest user can choose to exit the guest mode and either log in or register to access additional features and personalize their experience.
2. Upon exiting the guest mode, the application may prompt the user to consider registering to access more benefits.

**Administrator's Role:**

* Admin Access Control:

1. The application administrator has control over what features are available in guest mode.
2. The administrator can restrict specific actions and capabilities for guest users to ensure limited access.

* Encouraging Registration:

1. The admin can display prompts encouraging guest users to create an account or log in to access additional features.
2. These prompts can highlight the benefits of registering, such as personalized recommendations, article saving, and social sharing.

**Use Case 4: Uploading or Recording News Video/Image with Location and Tags**

**Actor:** User

**Triggers:** The user opens the news application and selects the option to upload or record news content.

**Preconditions:**

* The user is logged in to the news application.
* The user has the necessary permissions to upload or record news content.

**Flow:**

* The user opens the news application on their device.
* The news application presents the user with various options, including "Upload News" and "Record News."
* The user selects the "Upload News" option if they have pre-recorded content or the "Record News" option if they want to record a new video or image.
* If the user chooses the "Upload News" option:

1. The application prompts the user to select the video or image from their device's gallery.
2. The user selects the desired file from the gallery.
3. application processes the file and presents the user with a preview of the content.
4. The user can add additional details, such as a title, description, location, and relevant tags to the news content.
5. The user can also verify or modify the automatically detected location or manually input the location.
6. The user can add relevant tags, such as categories or keywords, to make the content easily discoverable.
7. Once the user is satisfied with the details, they click the "Upload" button.
8. The news application verifies the content and details and stores the news in its database with the provided information.

* If the user chooses the "Record News" option:

1. The application opens the device's camera or allows the user to record audio for an image upload.
2. The user records the news video or captures the image using the application's built-in recording or capturing functionalities.
3. After recording or capturing, the application presents the user with a preview of the content.
4. The user can add a title, description, location, and relevant tags to the news content, similar to the "Upload News" option.
5. The user verifies or modifies the automatically detected location or manually inputs the location.
6. The user adds relevant tags to the news content for better categorization.
7. Once the user is satisfied with the details, they click the "Upload" button.
8. The news application verifies the content and details and stores the news in its database with the provided information.

* After successful uploading or recording of the news content, the application may perform additional steps, such as:

1. Notifying the user about the successful upload or any potential errors during the process.
2. Displaying the uploaded news in the news feed for other users to view and engage with.
3. Allowing the user to edit or delete the uploaded news content if needed.
4. Applying moderation mechanisms to ensure the uploaded content meets community guidelines and standards.

**Postconditions:**

* The news content with location and tags is successfully uploaded or recorded and available in the news application for other users to view.
* The user can view, edit, or delete their uploaded news content as needed.

**Use Case 5: Personalized Content on a News Application**

**Actor:** User

**Triggers:**

* User opens the news application.
* User indicates interest in specific tags or topics.
* User logs in to the news application.

**Precondition:**

* The news application is installed and running on the user's device.
* The news application has access to the internet and is able to fetch content from the server.
* The user has registered an account or logged in to the news application.

**Flow:**

* User opens the news application on their device.
* The application prompts the user to log in or register an account if they haven't already done so.
* If the user is already logged in, the application retrieves the user's previously selected tags and interests from their profile.
* The user has the option to update their tags and interests at any time through the settings or preferences section.
* The user selects specific tags or interests from a list of available options, such as technology, sports, politics, entertainment, etc.
* The application saves the user's selected tags and interests in their profile for future use.
* Upon selecting the tags and interests, the application triggers a content recommendation request to the server.
* The server processes the request and retrieves news articles, videos, or other multimedia content related to the user's selected tags and interests.
* The server sends the personalized content back to the news application.
* The application displays the recommended content on the user's home screen or in a personalized section.
* The user can click on any article or video to read or watch the content in detail.
* The user has the option to mark the content as liked or disliked, which further refines the content recommendation for future interactions.
* The application periodically updates the recommended content based on the user's behavior, interactions, and changing interests.
* If the user revisits the application or refreshes the content, the application fetches updated recommendations from the server and displays the latest personalized content.

**Alternate Flow:**

* If the user hasn't selected any tags or interests initially, the application may display a generic set of news articles or videos until the user selects their preferences.

**Exceptions:**

* If the user experiences a network issue, the application may display a message indicating that it's unable to fetch personalized content at the moment.
* If the user encounters any technical problems or errors, the application may prompt the user to try again later or report the issue to the support team.

**Postcondition:**

* The user is presented with personalized news content based on their selected tags and interests.
* The user's preferences and interactions are saved in their profile for future use and content recommendations.
* The news application continuously updates the recommended content to match the user's evolving interests and preferences.

**Use Case 6: User Interaction in News Application - Liking, Commenting, and Sharing News on social media**

**Actor:** User

**Trigger:**

* The user opens the news application.
* The user selects a news article to read.

**Preconditions:**

* The user must have an active account and be logged in to the news application.

**Flow:**

* The user opens the news application on their device.
* The news application presents a home screen or a feed with a list of news articles.
* The user scrolls through the list of news articles and selects a specific article they are interested in reading.
* The news application loads the selected news article and displays its content along with other relevant information.
* While reading the article, the user has the following options available for engagement:

1. Liking: The user can click or tap on the "Like" button/icon to express appreciation for the article.
2. Commenting: The user can click or tap on the "Comment" button/icon to provide their thoughts or feedback about the article.
3. Sharing: The user can click or tap on the "Share" button/icon to distribute the article on their preferred social media platform(s).

* Liking Flow:

1. The user clicks or taps on the "Like" button/icon associated with the news article.
2. The news application registers the user's action and increments the "Like" count for that article.
3. Optionally, the news application may show a confirmation message to the user that their like was successful.

* Commenting Flow:

1. The user clicks or taps on the "Comment" button/icon associated with the news article.
2. The news application opens a comment section or a comment box where the user can input their comment.
3. The user writes their comment and submits it.
4. The news application saves the user's comment and displays it in the article's comment section.
5. Optionally, the news application may show a confirmation message to the user that their comment was posted successfully.

* Sharing Flow:

1. The user clicks or taps on the "Share" button/icon associated with the news article.. The news application presents a list of social media platforms (e.g., Facebook, Twitter, WhatsApp, etc.) for the user to choose from.
2. The user selects their preferred social media platform(s) where they want to share the article.
3. The news application opens the selected social media platform and pre-populates the article's link or a snippet for sharing.
4. The user can add a custom message (optional) and then submits the share action.
5. The social media platform publishes the article link or snippet on the user's profile/page, allowing their connections to view it.
6. Optionally, the news application may show a confirmation message to the user that their share was successful.

* After completing any of the engagement actions (liking, commenting, sharing), the user can continue reading the article or navigate back to the news feed to interact with other articles.

**Postconditions:**

* The user's engagement actions (likes, comments, shares) are successfully recorded and displayed within the news application.
* For sharing, the article is now visible to the user's connections on the selected social media platform(s).

**Use Case 7: Reporting Offensive Content on a News Application**

**Actor:** User

**Triggers:**

* The user is browsing the news application and comes across offensive or inappropriate content (e.g., hate speech, graphic violence, explicit images, harassment).

**Preconditions:**

* The user has a registered account on the news application.
* The user is logged in and actively using the news application.

**Flow:**

* User Encounters Offensive Content:

While browsing the news application, the user encounters a piece of content that they find offensive or inappropriate.

* Access Reporting System:

The user wants to take action against the offensive content, so they navigate to the options menu within the news application.

* Select "Report" Option:

In the options menu, the user finds a "Report" or "Flag" option associated with the offensive content.

* Choose Reporting Category:

The user selects the appropriate category for the offense from a list of options (e.g., hate speech, violence, explicit content).

* Submit Report:

The user submits the report by tapping the "Submit" button.

* Report Confirmation:

Upon successful submission, the user receives a confirmation message acknowledging that their report has been received.

* Review and Validation:

The news application's content moderation team reviews the reported content to assess its compliance with the platform's guidelines and policies.

* Decision and Action:

Based on their review, if the content is found to be in violation of the platform's guidelines, appropriate action is taken, which may include:

* Removing the offensive content.

1. Issuing a warning or strike to the content creator (if applicable).
2. Temporarily or permanently suspending the account of the content creator (for repeated or severe violations).

**Use Case 8: SOS Feature on a News Application**

**Actor:** User

**Triggers:**

* The user encounters an emergency situation while using the news application and requires immediate assistance.

**Precondition:**

* The user must have the news application installed and running on their mobile device.
* The user must have an active internet connection.

**Flow:**

* User Launches the News Application: The user opens the news application on their device.
* User Encounters Emergency: While using the news application, the user encounters an emergency situation, such as witnessing a crime, natural disaster, medical emergency, or any life-threatening situation.
* User Activates SOS Feature: To seek immediate assistance, the user taps on the SOS button or activates the SOS feature through a designated gesture or voice command within the news application.
* Location Sharing (Optional): If the user has granted permission, the application may automatically retrieve the user's current location using GPS or network information and include it in the SOS alert.
* SOS Alert Sent: The news application sends an SOS alert to the designated emergency contacts and relevant authorities, including local emergency services.
* Emergency Contacts Notified: The designated emergency contacts (previously provided by the user) receive the SOS alert via text message, push notification, or email. The alert includes information about the user's emergency and their current location, if available.
* Authorities Respond: Local emergency services or relevant authorities are notified about the user's emergency and dispatched to the user's location for assistance.
* Confirmation of Help: The application may send a follow-up notification to the user and emergency contacts once the authorities confirm that they have responded to the emergency.
* Emergency Resolution: The emergency situation is resolved by the responding authorities.
* User Acknowledgement: After the emergency has been resolved, the user may acknowledge the help received through the application, if applicable.

**Postcondition:**

* The user's emergency situation has been responded to and addressed appropriately by the relevant authorities, ensuring the user's safety and well-being.