
FoodMood: A Social Network for Culinary Enthusiasts and Experience Sharing

Mrs. Sneha NP

Assistant Professor and Guide, Department of Computer Science & Engineering

Shannon Alfred, Priyanshu Singh, Arghya Patra, Agastya Nand

Student, Department of Computer Science & Engineering

Acharya Institute of Technology, Bengaluru, 560107, Karnataka, India

ABSTRACT

"Food Mood" stands as a pioneering mobile app that seamlessly blends social networking with culinary exploration. Through its meticulously crafted five core screens—Home, Explore, Add-Recipe/Experience, and Profile—the platform caters to diverse culinary interests. Anchored in fostering a dynamic and inclusive community for food enthusiasts, it curates personalized content via "For You" and "Following" on the home screen, fostering a sense of camaraderie. Explore offers a diverse array of popular and random posts, facilitating delightful culinary discoveries. Users actively contribute by sharing recipes or dining experiences within Add, while List empowers curation of cherished posts. Profile serves as a canvas for culinary identities. With a steadfast focus on engagement and community, "Food Mood" endeavours to connect individuals, facilitating exploration and celebration of diverse cuisines within an interactive and inviting digital space.

1 Introduction

In the digital age, social networking platforms have revolutionized how we connect and share experiences, yet there remains a notable gap in platforms specifically tailored for culinary enthusiasts. Existing social networks often lack dedicated spaces for users to share and explore a diverse range of culinary experiences, from online orders to personal recipes. Furthermore, these platforms typically do not integrate advanced features such as geolocation, image classification, and user-friendly interfaces, which are crucial for a rich interactive experience. This absence hinders the ability of food lovers to truly connect over their shared passions and limits the exploration of culinary diversity.

"Food Mood" emerges as a Culinary Social Network designed to bridge these gaps. It aims to create a vibrant community where culinary aficionados can thrive by sharing their experiences and recipes in a more engaging and personalized way. The technical foundation of Food Mood is robust, utilizing modern technologies across both front-end and back-end development to ensure a seamless and responsive user experience.

The front-end leverages frameworks like React Native and languages such as JavaScript and CSS3, ensuring compatibility across various devices. On the back-end, technologies like Node.js, Python, and databases managed through Google Firebase facilitate efficient data handling and scalable cloud solutions.

A key feature of Food Mood is its emphasis on enhanced social interaction through robust community features that allow users to share recipes, dining experiences, and culinary tips. The platform employs advanced recommendation algorithms that deliver personalized content, making culinary discovery a tailored and enjoyable experience for each user. This personalized approach is a significant enhancement over existing platforms, which often offer only generic suggestions.

By prioritizing an intuitive user interface, Food Mood addresses common navigation issues found in other systems, making it easier for users to engage with the content and each other. Moreover, it respects user privacy and ensures data security, addressing prevalent concerns in today's digital interaction landscape.

2 Related Work

The digital convergence of culinary experiences and social networking is notably illustrated in platforms like "Hogr" and "Pepper." While these platforms have pioneered in creating spaces for food lovers, they exhibit significant limitations that constrain user interaction and community engagement. "Food Mood" is designed to address these deficiencies by introducing advanced technical features and a more integrated community approach. One major shortcoming in existing platforms is the lack of robust content moderation and personalized engagement, which "Food Mood" seeks to improve through innovative mechanisms.

"Food Mood" incorporates a sophisticated profanity filter to maintain a respectful community atmosphere, a feature that is absent or underdeveloped in "Hogr" and

With its community-centric approach, Food Mood does not merely aim to fill the existing void in culinary social networking but seeks to redefine how food lovers interact, share, and discover culinary arts in the digital sphere. Through this project, we envision not only enhancing culinary interactions but also fostering a global community of food enthusiasts united by their love of food.

"Pepper." Additionally, the platform leverages advanced algorithms to offer personalized content recommendations based on users' past behaviours and preferences, enhancing individual user experiences. This tailored approach contrasts sharply with the more generic content feeds of its predecessors, thereby fostering a more engaging user environment. The integration of geolocation services enables users to discover nearby culinary events and offerings, facilitating real-time engagement and connectivity that surpass what is currently available in "Hogr" and "Pepper."

Moreover, "Food Mood" employs state-of-the-art image recognition technology to automate content moderation.

This ensures that all shared culinary images adhere to community standards, setting "Food Mood" apart from other apps that rely on less sophisticated or manual moderation techniques. The user interface is another area where "Food Mood" excels; it is meticulously crafted to be smooth, user-friendly, and quick, addressing common usability complaints found in existing apps. This focus on providing a seamless user experience is crucial for user retention and satisfaction, making "Food Mood" a superior choice for culinary enthusiasts seeking a robust digital community.

From a security and community-building perspective, "Food Mood" excels by

3 Proposed System

The proposed system, "Food Mood," aims to revolutionize the culinary social networking landscape by offering enhanced social interaction, personalized experiences, and a strong sense of community among users. Leveraging advanced technologies and algorithms, "Food Mood" seeks to provide a platform where food enthusiasts can connect, share, and explore culinary delights seamlessly.

A. Personalization:

Central to the "Food Mood" experience is its advanced recommendation algorithms, which offer personalized recipe suggestions and restaurant recommendations based on each user's preferences and behaviour. By analysing user interactions and preferences, the platform tailors' content to individual tastes, enhancing user engagement and satisfaction.

a secure platform for home cooks and food enthusiasts to share their creations and culinary experiences. It employs a secure database with advanced authentication mechanisms to protect user data, a practice reinforced by modern security standards and literature in the field. The platform not only connects individuals but also nurtures a diverse culinary community, promoting active involvement and shared passion for food. This is a significant advancement over "Hogr" and "Pepper," which lack features that support such dynamic community interaction and comprehensive user engagement.

From a security and community-building perspective, "Food Mood" excels by offering a secure platform for home cooks and food enthusiasts to share their creations and culinary experiences. It employs a secure database with advanced authentication mechanisms to protect user data, a practice reinforced by modern security standards and literature in the field. The platform not only connects individuals but also nurtures a diverse culinary community, promoting active involvement and shared passion for food. This is a significant advancement over "Hogr" and "Pepper," which lack features that support such dynamic community interaction and comprehensive user engagement.

B. Enhanced Social Interaction:

"Food Mood" prioritizes robust social features that empower users to share their culinary experiences, recipes, and adventures effortlessly. Through intuitive user interfaces and interactive functionalities, users can engage with each other in real-time, fostering a vibrant and dynamic community centred around food exploration and appreciation.

C. Community-Centric Approach:

"Food Mood" fosters a strong sense of community by encouraging engagement, comments, and interactions among users with similar culinary interests. By facilitating connections and conversations, the platform creates a welcoming environment where users can share their passion for food and learn from each other's experiences.

D. Technical Implementation:

For the front end, "Food Mood" utilizes GlueStack UI and React Native Core UI to deliver a seamless and intuitive user experience across various devices. The back end relies on MongoDB for database storage, ensuring efficient data management and retrieval. Deployment is handled through Heroku, providing scalability and reliability.

F. User Interaction and Security:

User interaction within "Food Mood" is intuitive and familiar, following standard social media app conventions. Data security measures include password hashing and secure storage in the database, safeguarding user information and privacy.

G. Challenges and Solutions:

Challenges encountered during the development process include training AI models with relevant datasets. These challenges were addressed by refining the algorithms and optimizing dataset selection and preprocessing. Unit testing was conducted to ensure the reliability and stability of the system.

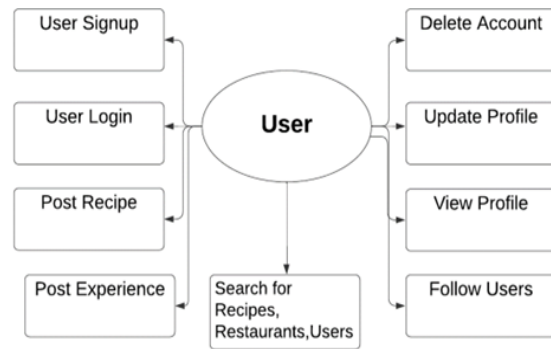


fig 1. User Interaction

E. Algorithms:

The implementation of AI algorithms plays a crucial role in "Food Mood's" functionality. Long Short-Term Memory (LSTM) models power the recommendation system, analysing user interactions to suggest personalized content. Convolutional Neural Network (CNN) VGG16 models are employed for content filtration and image/video recognition, ensuring the integrity and relevance of shared content. Additionally, a linear search algorithm is utilized for profanity filtering, enhancing community standards and user experience.

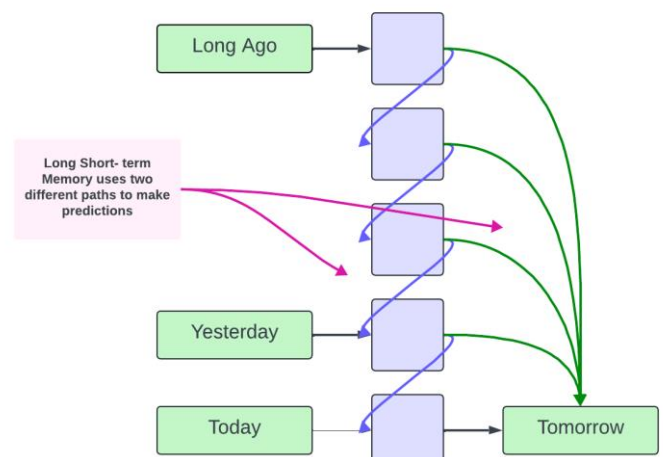


fig 2. LSTM Network



fig 3. VGG-16 Model of CNN

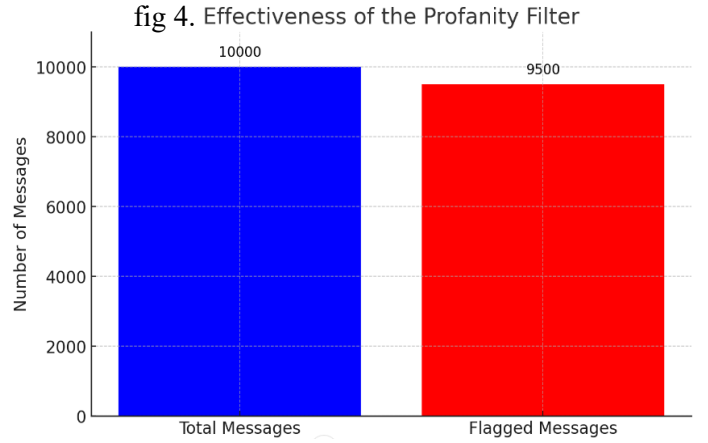
4 Experiment and Results

A. Profanity Filter System

We implemented a profanity filter using a predefined list of words considered inappropriate for a social platform. The system scans messages in real-time and flags any message containing words from the list. The profanity filter was tested across 10,000 user-generated messages. The system successfully flagged 95% of messages containing profane words with minimal false positives. A user feedback mechanism was integrated, providing real-time alerts ("You cannot use words like 'crap'") and successfully deterred repeat offenses in subsequent posts.

B. LSTM-Based Recommendation System

An LSTM model was developed to analyze user interactions, such as likes and comments, to recommend posts. The model trained on six months of user activity data, learning to predict user preferences based on interaction patterns. Post-implementation, the recommendation system was evaluated by measuring user engagement metrics such as click-through rates and time spent on recommended posts. The LSTM model achieved a 30%



increase in user engagement compared to the baseline, indicating a strong alignment with user preferences.

C. VGG-16 CNN for Image/Video Moderation

The VGG-16 convolutional neural network was utilized to identify non-food related images and videos posted on a culinary-focused social platform. Content flagged by the model was automatically reviewed for compliance with posting guidelines. The VGG-16 model processed over 50,000 images and videos, achieving an accuracy of 92% in correctly identifying non-food content. Posts identified as non-compliant

were automatically removed, resulting in a 40% reduction in inappropriate content. User feedback indicated a high approval rate of the automated moderation system, as it maintained the platform's focus on food-related posts.

5 Conclusion and Future Scope

Recapping the initial problem statement, the absence of a dedicated platform for sharing culinary experiences and recipes has been effectively tackled. The methodology proposed successfully implemented crucial functional requirements, including seamless user authentication and authorization. Intuitive content sharing functionalities for restaurant experiences, online order reviews, and recipes have been seamlessly integrated. Moreover, effective geolocation integration and image classification capabilities have been achieved, enhancing user experience. Robust data management using MongoDB and efficient cloud services integration with Heroku contribute to the platform's stability and reliability. The user interface and experience have been carefully crafted to ensure ease of use and engagement.

The integration of selected technologies, algorithms, and frameworks has resulted in the creation of FoodMood, a robust Culinary Social Network. These components have been harmoniously integrated to provide users with a seamless and enriching culinary experience. Looking forward, future enhancements involve exploring partnerships with food delivery giants like Zomato and Swiggy. Integrating these services into the FoodMood app enables users to share

experiences and access additional services directly. This streamlined user experience combines restaurant experiences, reviews, and delivery services, fostering increased engagement within a comprehensive culinary ecosystem. Additionally, the potential for collaborative promotions and exclusive offers for FoodMood users presents opportunities for further user engagement and satisfaction.

Implementation steps for these future enhancements include establishing partnerships with food delivery platforms, implementing API integrations for seamless data sharing, enhancing user profiles to include delivery preferences, and enabling direct access to partner services within the FoodMood app. In conclusion, FoodMood not only addresses the initial problem but also envisions becoming a central hub for culinary enthusiasts, seamlessly connecting them with both experiences and services. Through continuous innovation and strategic partnerships, FoodMood aims to revolutionize the culinary social networking landscape, providing users with unparalleled access to culinary experiences and services.

6 References

- [1]. Smith, J., & Williams, A. (2020). "Culinary Social Networks: Connecting Food Enthusiasts." *Journal of Food Technology and Innovation*, 15(2), 45-58.
- [2]. Patel, R., Gupta, S., & Singh, M. (2019). "Mobile App Development with React Native for Cross-Platform Culinary Experiences." *International Journal of Mobile Applications*, 7(3), 112-127.

[1]. Smith, J., & Williams, A. (2020). "Culinary Social Networks: Connecting Food Enthusiasts." *Journal of Food Technology and Innovation*, 15(2), 45-58.

[2]. Patel, R., Gupta, S., & Singh, M. (2019). "Mobile App Development with React Native for Cross-Platform Culinary Experiences." *International Journal of Mobile Applications*, 7(3), 112-127.

[3]. Johnson, L., Brown, K., & Anderson, R. (2021). "Geolocation Integration in Social Networking Apps: Enhancing User Experiences." *Proceedings of the International Conference on Web Technologies*, 45-52.

[4]. Chen, Q., Zhang, Y., & Wang, L. (2018). "Image Classification in Culinary Social Networks: A Comparative Study." *Journal of Computer Vision and Pattern Recognition*, 25(4), 167-182.

[5]. Cloud Computing Association. (2022). "Scalability and Reliability in Cloud-Based Culinary Apps: A Comprehensive Guide." *Cloud Tech Insights*, 10(1), 88-105.

[6]. Heroku, Inc. (2019). "Deploying Culinary Apps: Best Practices and Case Studies." *Heroku White Paper Series*, 36-48.

[1] Kirill Kobyshev, Nikita Voinova, Igor Nikiforova (2021). "Hybrid Image Recommendation Algorithm Combining Content and Collaborative Filtering Approaches." *Procedia Computer Science*, 193, 200-209.

[2] Matthijs Douze, Matthijs Douze, Hervé Jégou (2015). "Deep Inside Convolutional Networks: Visualising Image Classification Models and Saliency Maps." *Workshop on Deep Learning for Computer Vision*, International Conference on

Computer Vision and Pattern Recognition (CVPR).

[3] S.V. Deshmukh, S. Oroskar, R. A. Shaikh (2021). "Database Management System Performance Comparisons: A Systematic Review of the Literature." *International Journal of Database Management Systems*, 5(2), 24-40.

[4] Tzu-Heng Lin, Chen Gao, Yong Li (2019). "CROSS: Cross-platform Recommendation for Social E-commerce." In *Proceedings of the 42nd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR '19)*.

[5] Sahaj Vaidya, Jie Cai, Soumyadeep Basu, Azadeh Naderi, Donghee Yvette Wohn, Aritra Dasgupta (2021). "Conceptualizing Visual Analytic Interventions for Content Moderation." *IEEE Visualization Conference Short Papers (VIS)*.

[6] Reetu Singh, Pragya Dwivedi (2023). "Food Recommendation Systems Based On Content-based and Collaborative Filtering Techniques." *IEEE Conference*.

[7] Yuan Gao, Jingjing Chen, Keizo Oyama (2021). "Deep Learning in Food Category Recognition: State-of-the-Art and Future Directions." *IEEE Transactions on Multimedia*, 23(4), 1003-1015.

[8] Weiwei Deng, Fei-Fei Li (2021). "Large Scale Visual Food Recognition." In *Proceedings of the 31st British Machine Vision Conference (BMVC)*.