EmotiFit

Pamella Nipay, Johnathon Franco Sosa, Daniel Guzman
External Advisor: Sean Montgomery– Connected Future Labs
Instructors: David Feil-Seifer, Devrin Lee, Sara Davis
Teaching Assistants: Vinh Le, Zach Estreito
Department of Computer Science and Engineering, University of Nevada, Reno

CSE

Abstract

EmotiFit is reshaping stationary exercise, especially in cycling, through an innovative app. Seamlessly integrating EmotiBit device heart rate data, users input real-time information for personalized workouts. The app excels in dynamically adjusting music playlists based on workout intensity, elevating motivation. A user-friendly login interface ensures seamless entry, fostering positive engagement. Integration of the Spotify API with our chatbot adds a dynamic dimension, offering personalized music synced with users' workout intensity. A pivotal feature is the heart data visualizer screen, changing background colors when the heart rate exceeds a set threshold. This enhances engagement and provides instant feedback, empowering users to customize workouts in real-time. These functionalities redefine stationary workouts, embodying EmotiFit's commitment to a revolutionary and personalized fitness journey.

Description

EmotiFit is a groundbreaking project that aims to revolutionize stationary exercise, with a primary focus on cycling, through an innovative and user-centric app. The project's overarching goal is to seamlessly integrate EmotiBit device heart rate data, providing users with real-time information for personalized workouts. This integration enables the app to dynamically adjust music playlists based on workout intensity, thereby elevating motivation and engagement during stationary workouts. The intended users for EmotiFit are fitness enthusiasts, cyclists, and individuals looking for a personalized and motivating exercise experience. The project is beneficial to these users as it offers a unique combination of real-time heart rate data visualization, personalized music playlists, and a user-friendly interface. By catering to the specific needs and preferences of users, EmotiFit seeks to foster positive engagement and empower individuals to customize their workouts in real-time. The integration of the Spotify API, coupled with the chatbot aspect, adds a dynamic dimension to the fitness journey, enhancing the overall workout experience.
The main functionality of EmotiFit revolves around real-time heart rate data integration, dynamic music playlist adjustments, a user-friendly login interface, and the incorporation of a chatbot powered by the Spotify API. The heart data visualizer screen, changing background colors based on heart rate thresholds, enhances engagement and provides instant feedback to users. The integration of these functionalities redefines stationary workouts, embodying EmotiFit's commitment to a revolutionary and personalized fitness journey.
In terms of technologies, EmotiFit utilizes a versatile tech stack. The app is developed using React Native, ensuring cross-platform compatibility for both iOS and Android users. The integration of the Spotify API involves working with JavaScript for web development. Additionally, EmotiFit leverages hardware components, specifically the EmotiBit device, for accurate heart rate monitoring during workouts.

User Interface

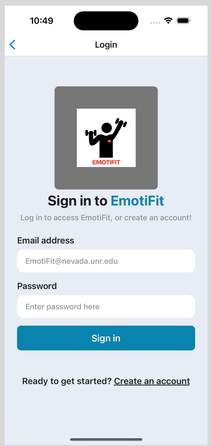

Figure 1

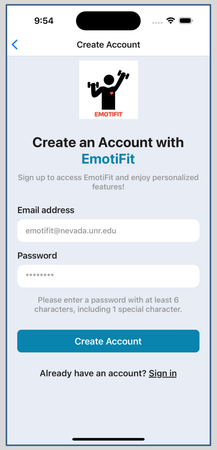

Figure 2

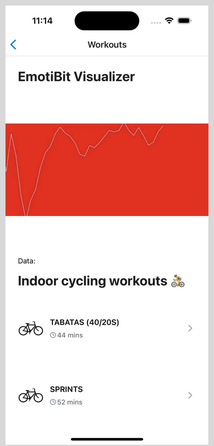

Figure 3

EmotiFit incorporates different components such as EmotiBit, Firebase, Spotify and OpenAI API's in order to operate. Figure 1 shows the login screen. Figure 2 features a screen where a user can create an account. Figure 3 showcases the EmotiBit visualizer, and also offers workouts. Figure 4 displays the Settings option such as changing display name, viewing previous data, and logging out. Figure 5 shows the Chatbot screen, where the user can ask for recommendations for workouts. Figure 6 features a screen where if a user forgets their password, they can recover their account by simply providing the email account they used to reset their password.

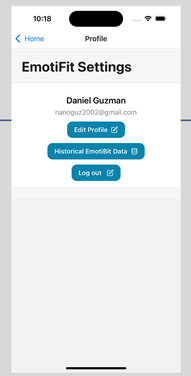

Figure 4

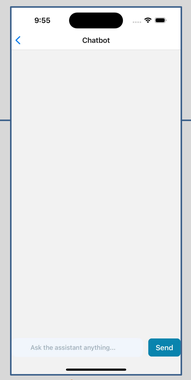

Figure 5

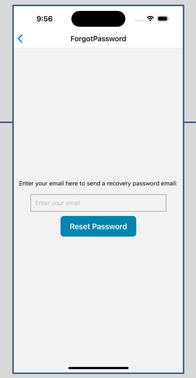

Figure 6

Future Work

Some of the future work that we plan to incorporate into our project is to have the ability to connect different Heart Rate monitors or watches to the fitness application. Through this, it would not just rely on EmotiBit, rather, if the user has a preference for their watch, they can choose it. Other features would include connecting different streaming music services such as Apple Music, YouTube Music and others. This would allow more personalized playlists if they are hosted on another service. Music would also be tailored to non-stationary workouts, such as weight-lifting and will align with the intensity and rhythm of that exercise to enhance the user's experience with EmotiFit and keep their motivation going.

Conclusion

In conclusion, EmotiFit stands at the forefront of reshaping the stationary exercise landscape, particularly in the realm of cycling, through its innovative app and integrated EmotiBit device. By seamlessly integrating real-time heart rate data with user input, EmotiFit delivers personalized workouts that cater to individual fitness levels and preferences. The app's dynamic adjustment of music playlists based on workout intensity not only enhances motivation but also fosters a more immersive exercise experience.

Through a user-friendly login interface and the integration of the Spotify API with a chatbot, EmotiFit provides a seamless and interactive platform for users to engage with during their workouts. This integration offers personalized music selections synchronized with the user's intensity, further enhancing the overall exercise session.

A key feature of EmotiFit is its heart data visualizer screen, which dynamically changes background colors to reflect fluctuations in heart rate, providing instant feedback and empowering users to customize their workouts in real-time. This feature not only enhances engagement but also promotes a deeper understanding of one's physiological response to exercise.

Overall, EmotiFit's commitment to revolutionizing the stationary exercise experience is evident through its user-centric design, innovative technological integration, and unwavering dedication to providing a dependable fitness companion. As EmotiFit continues to evolve, it is poised to meet the diverse needs of fitness enthusiasts, cyclists, and individuals seeking a dynamic and motivating workout solution. EmotiFit embodies the future of personalized fitness journeys, paving the way for a healthier and more engaging approach to exercise.

Acknowledgements

We would like to express our sincere gratitude to Sean Montgomery from Connected Future Labs for his invaluable guidance and support throughout this project. Sean provided detailed feedback on our project methodology, which significantly guided us on the best practices and user interactions with EmotiBit and React Native.

We are truly grateful for Sean's expertise with EmotiBit and thank him for setting aside time to meet with us throughout the year-long project.

We would also like to extend our gratitude to the entire CS 426 teaching team for their input and guidance.

This project was developed in Spring 2024 as part of the course CS 426 Senior Projects in Computer Science.