

RIDESAFE FORECAST

|  |
| --- |
| **Introduction** |
| **Introducing RideSafe Forecast – an intelligent**  **offline tool that brings advanced weather**  **analysis and bike ride safety predictions to**  **your Android device. Built with Android Studio**  **and powered by machine learning, this app**  **evaluates daily weather conditions and calculates**  **the safety of your bike ride in percentage — no**  **internet required. Whether you're commuting,**  **training, or just out for a ride, RideSafe Forecast**  **delivers quick, reliable, and private ride-readiness**  **insights — anytime, anywhere.** |
| **App interface** |
| Figur    **RideSafe Forecast** features a clean, intuitive  interface designed for clarity and convenience. On  launch, users are presented with three core options:  Check Weather, Predict Safety, and View History.  After retrieving or entering local weather data, the app  uses on-device AI to instantly analyze conditions —  displaying the bike ride safety percentage clearly  along with supporting weather details.  The design adopts a calm blue theme for a  trustworthy, outdoor feel, with bold green and red  indicators to quickly convey safety levels. The app  icon visually represents smart commuting, combining  a bicycle symbol with weather and AI elements,  reinforcing the theme of intelligent ride planning.  Whether you're a casual cyclist or a daily commuter,  the interface ensures a smooth and informative  experience for safe, offline ride decision-making. |
|  |
|  |

|  |  |  |
| --- | --- | --- |
| **QR Code For Download** | | |
|  | | |
| **Real-TimeApplications** | | |
| * **Educational Tool: Teaches students about weather patterns and safe commuting decisions through real-time, offline weather analysis.** * **Cycling Safety Awareness: Encourages safe riding habits by providing a clear safety score, especially for young or new cyclists.** * **Adventure & Outdoor Activities: Supports mountain bikers, campers, and long-distance riders with quick safety checks in remote environments.** * **Urban Commuting: Helps daily commuters decide if biking is safe, avoiding surprises from sudden weather changes.** * **Restricted Connectivity Zones: Useful in rural areas, hilly terrains, or during travel where internet-based weather apps may not work.** * **AI Learning Demos: Perfect for demonstrating practical, offline machine learning in workshops, STEM classes, or smart mobility showcases.** | | |
| **Conclusion** | | |
| **RideSafe Forecast bridges the gap between intelligent weather analysis and practical offline usability.** By harnessing on-device machine learning, it provides real-time bike ride safety predictions based on weather conditions — all without internet access. Whether used for daily commuting, outdoor adventures, or remote travel, this app demonstrates how offline AI can empower safer, smarter decisions. With a user-friendly interface, fast performance, and a privacy-first design, RideSafe Forecast is more than just a weather app — it’s your personal safety companion on every ride. | | |
| **Team** | | |
| **TeamDetails:** | |  |
| Reg no:  RA2311004010270  RA2311004010281  RA2311004010285  Year/Sec:2/E | Name:  Sushill Kumar P  Shivabalaji K  Naveen Kumar |
|  | | |

|  |
| --- |
| **Problem and solution statement** |
| * Problem: “Cyclists often struggle to decide if the weather is safe for riding, and many weather apps don’t offer clear, actionable safety insights — especially without internet access.” * Solution: “RideSafe Forecast solves this by providing smart, offline weather analysis and a   clear bike ride safety percentage - helping users  make informed decisions anytime, anywhere.” |
| **Comparison table** |
| Offline RideSafe Forecast vs Online Weather Apps   |  |  |  | | --- | --- | --- | | **Feature** | RideSafe Forecast | Online Weather Apps | | Internet Required | No | Yes | | Privacy | High (local-only) | Data sent to cloud | | Ride Safety Score | Yes (AI-based %) | No clear ride readiness | | Speed | Instant | Depends on connection | |
| **How it works** |
|  |
| **Step 1: Input Local Weather Data**  The app either retrieves weather data from onboard sensors or allows the user to manually input parameters like temperature, wind speed, humidity, and precipitation. All input is offline and under the user's control.  **Step 2: Data Preprocessing**  The input data is normalized and formatted to fit the expected input structure of the AI model. Example: Numerical values are scaled between 0 and 1 for optimal model performance.  **Step 3: AI Inference via On-Device Model**  The pre-processed data is fed into a lightweight machine learning model built with TensorFlow Lite. The model evaluates multiple weather factors to predict ride safety. All computation happens locally — no cloud or server needed.  **Step 4: Display Safety Score Instantly**  The app instantly displays a clear ride safety percentage (e.g., "Bike Ride Safety: 85%") along with relevant weather conditions. No loading time, no internet dependency — just fast, reliable insights at a glance. |
| **LabelingYourHeaders** |
| Theblueheaderbarsareusedtoidentifyandseparatethemaintopics of your presentation. The most commonly used headers in poster presentations are: |