

MÉTÉOSCOPE



Planning outdoor activities in cities is difficult due to unpredictable weather.

Extreme conditions—very hot, very cold, very windy, very humid, or highly uncomfortable—can disrupt events, compromise safety, and reduce comfort. Users need reliable forecasts tailored to their activities.

Solution

MeteoScope predicts the impact of weather conditions on urban activities by focusing on assessing the **specific risks of each activity**.



- A clear risk score for scheduled events.
- Recommendations on whether to proceed or reschedule.
- Activity-specific insights for parades, concerts, sports, construction, and more.

Methodology

The application uses a combination of reliable weather data sources and predictive models:

1. **Data Sources:**
 - Open-Meteo: hourly local weather data.
 - NASA POWER: global climate data with daily statistics.
2. **Time Window Extraction:** weather data is extracted for the planned activity period.
3. **Critical Factor Analysis:** each activity type (parade, concert, wedding, construction, sports, agriculture) has defined critical factors (rain, wind, temperature, humidity, visibility).
4. **Impact Score Calculation:**
 - A machine learning model (Gradient Boosting Regressor) predicts the probability of activity disruption.
 - Scores are weighted based on activity-specific critical factors.
 - Final score classifies risk into low, moderate, high, or critical levels.

