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PREDICTION OF AIR POLLUTION AND ENVIRONMENTAL FACTORS USING MACHINE  
LEARNING, DATA FROM SPACE AGENCY SATELLITES AND FROM GROUND DEVICES.

**Abstract**

According to the World Health Organization (WHO) 92% of the world's population breathes polluted air and 6.5 million people die in the world every year. A study conducted by the World Bank in 2015 indicates that it costs \$ 225 billion for deaths caused by air pollution. Currently, users do not have easy access to information from the Space Agency satellites. The proposal is to use public meteorological data such as temperature and humidity and information on polluting gases such as CO<sub>2</sub>, O<sub>3</sub>, among others, from the satellites of space agencies like the Landsat 9 satellite, which measures environmental factors such as temperature, humidity, and ultraviolet radiation. Public information from ground stations, wearables and IOT devices that measure polluting gases and environmental factors will also be used. It is proposed to use the APIS service of NASA and other space agencies to obtain such information. Subsequently, the information from the Space Agencies and the IOT devices on the ground will be combined; to display the information on a digital map in an app, it will detect the users' locations and show the level of contamination in their area, the user will be able to receive alerts by SMS or email when contamination levels are high in the place where they are breathing. Likewise, forecasts will be made with Artificial Intelligence (Machine Learning) on the air quality of a specific place. With this information and triggers, people will be able to take actions to improve their health, as well as reducing these polluting gases in the environment.