AIQ

AIR QURE

The Team

Rajashekar Reddy
B.Tech + MS Research Dual Degree
Electronics and Communication
(5th year)

Sai Usha
MS Research Computer Science Engineering
(1st year)

Sara Spanddhana
MS Research Electronics and
Communication
(2nd year)

Ishan Patwardhan
MS Research Electronics and
Communication
(2nd year)

Ayu Parmar
MS Research Electronics and
Communication
(1st year)

INTERNATIONAL INSTITUTE OF
INFORMATION TECHNOLOGY
HYDERABAD

Contact: rajashekar.reddy@research.iiit.ac.in

Problem Statement

"Air Pollution impacts climate change, public and individual health due to increasing morbidity and mortality. It accounts for about 9 million deaths per year"

Short-term exposure to air pollutants is closely related to many chronic diseases and increased hospitalization

More serious due to overpopulation, uncontrolled urbanization and industrialization in countries such as India (New Delhi). This leads to poor air quality, in countries with social disparities and a lack of information on sustainable management of the environment. [1]

The interactions between humans and their physical surroundings have been extensively studied

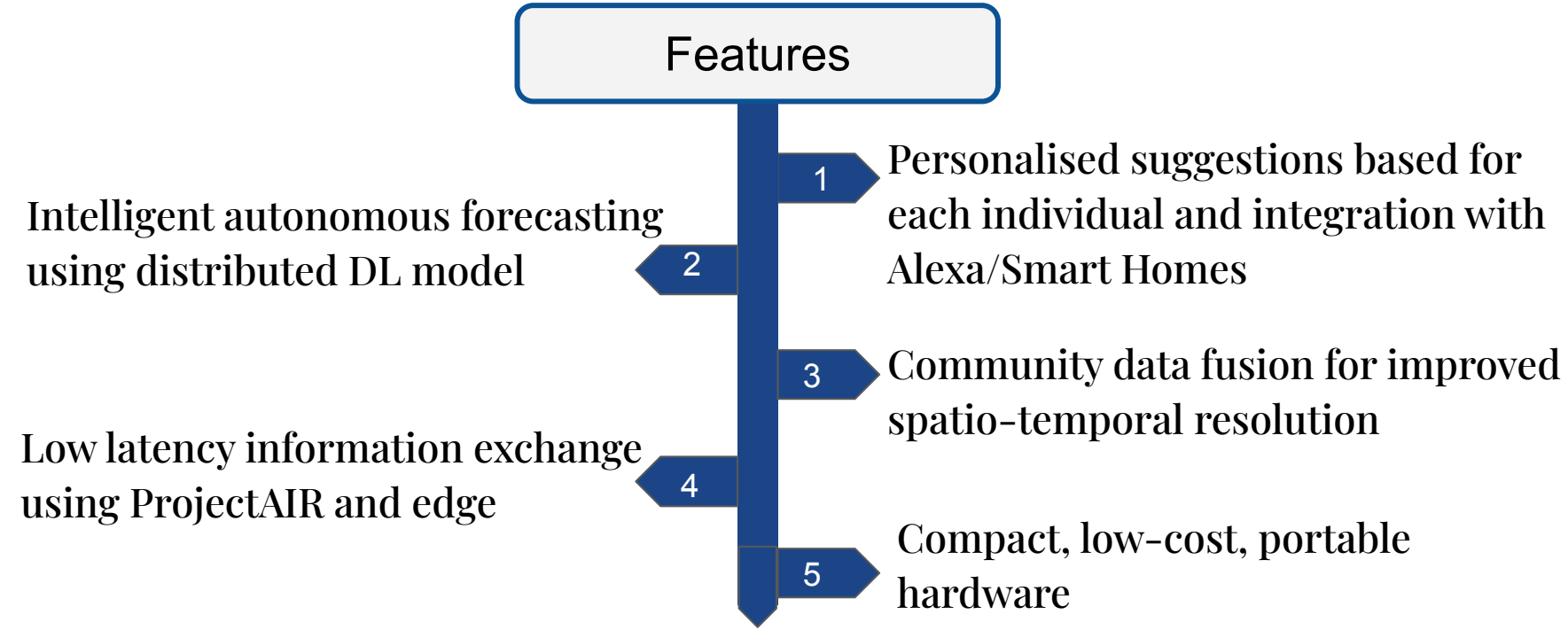
But...

- Existing systems do not take into consideration the existing health conditions of the individuals
- Existing networks have very high latency - short term exposure of PM2.5 can be deadly for people with dangerous health conditions

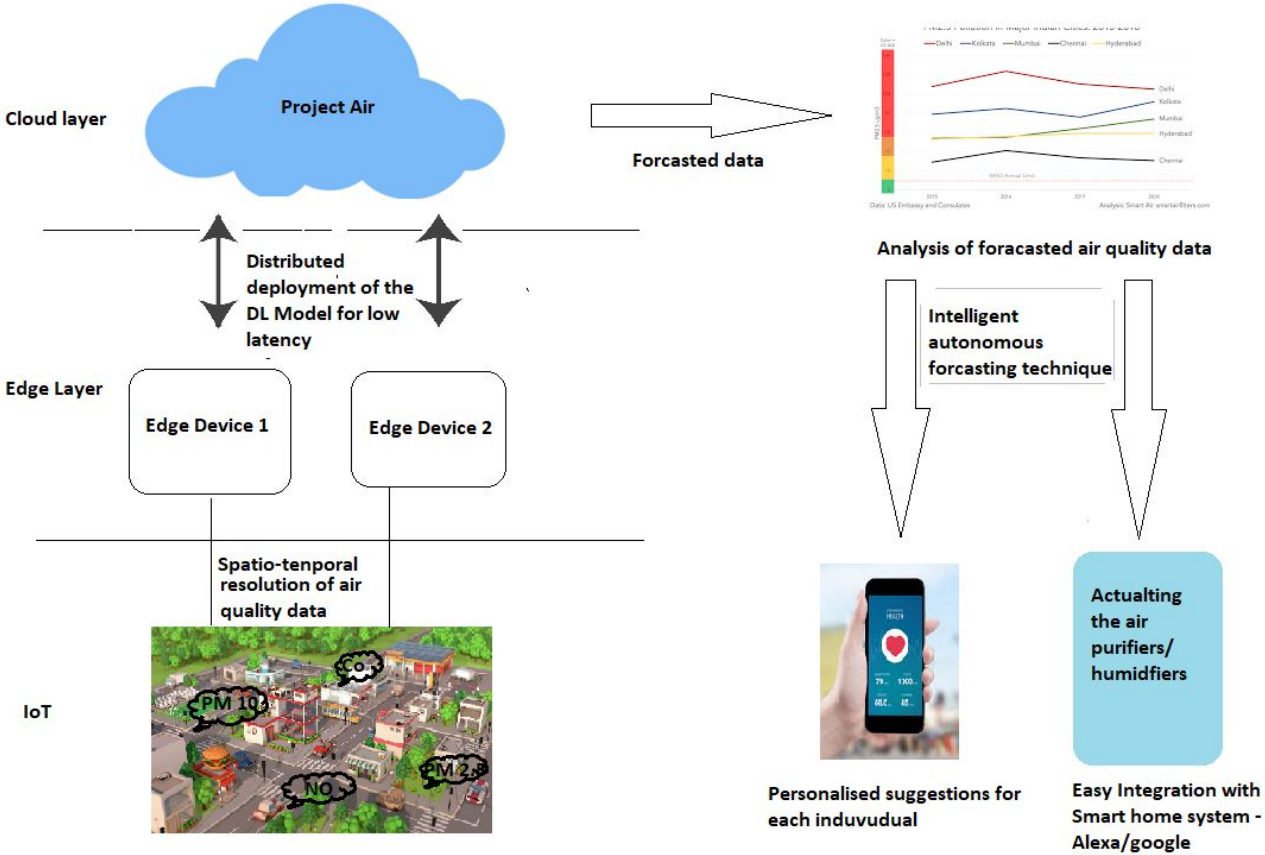
[1] https://www.sciencedirect.com/science/article/abs/pii/S026974911930418X

Our Solution

"AirQure" is a device with low-cost calibrated air quality sensors which is an intelligent and edge Computing based low latency and autonomous air quality system.

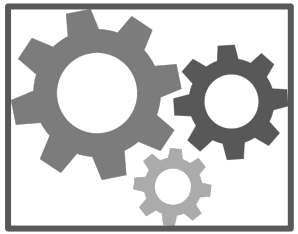


High Level Approach



Business Feasibility

$ ₹



Purchase of device

Device Re-calibration and maintenance plan

Data plan for personalised suggestions

Data Fusion and availability of infrastructure to the government authorities

Support for the already existing Air quality measurement systems

How are we different?

- **Personalised model predictions** enables us give **personalised suggestions** to the individuals based on their health condition (**Even short term exposure** of PM is **deadly** for people with already existing chronic diseases like asthma)
- **Distributed deployment of DL** models enables us provide the **Low Latency** Air Quality Management and Analysis to the concerned pollution boards for necessary actions.
- **AirQure** will provide necessary suggestions and possible steps for individuals as well as authorities to mitigate the **peak deterioration** of air quality during certain months, using periodic and seasonal forecasting methods.
- **AirQure** would aim to provide **high accuracy and precise forecasted data** for over **24 hours** with high temporal resolution and over seasons with higher accuracy and maximum possible temporal resolution.

Thank you