

KANATVERI

*From EarthData to Action: Cloud
Computing with Earth Observation Data
for Predicting Cleaner, Safer Skies*

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CAUSES & MONITORING OF GLOBAL WARMING

Causes

- Burning fossil fuels (coal, oil, gas) → CO₂ emissions
- Deforestation → less CO₂ absorption
- Industrial & agricultural emissions (methane, nitrous oxide)

Monitoring

- NASA TEMPO Satellite: Hourly air pollution measurements over North America
- NASA ARSET Program: Remote sensing training for air quality & greenhouse gas analysis
- WHO Data & Reports: Health impacts & air pollution trends

THE URGENCY OF CLEAN AIR

Climate Change

Air Pollution

Environmental Health

Air pollution causes at least 7 million premature deaths each year. (World Health Organization, 2025) 99% of the world breathes polluted air (WHO).

GLOBAL ACTIONS AGAINST GLOBAL WARMING & GREENHOUSE GASES

- Paris Agreement: Limit global temperature rise to 1.5°C.
- WHO & UN Initiatives: Health-focused climate actions ([WHO Conference 2025](#)).
- NASA & EarthData: Monitoring pollution with satellites like TEMPO



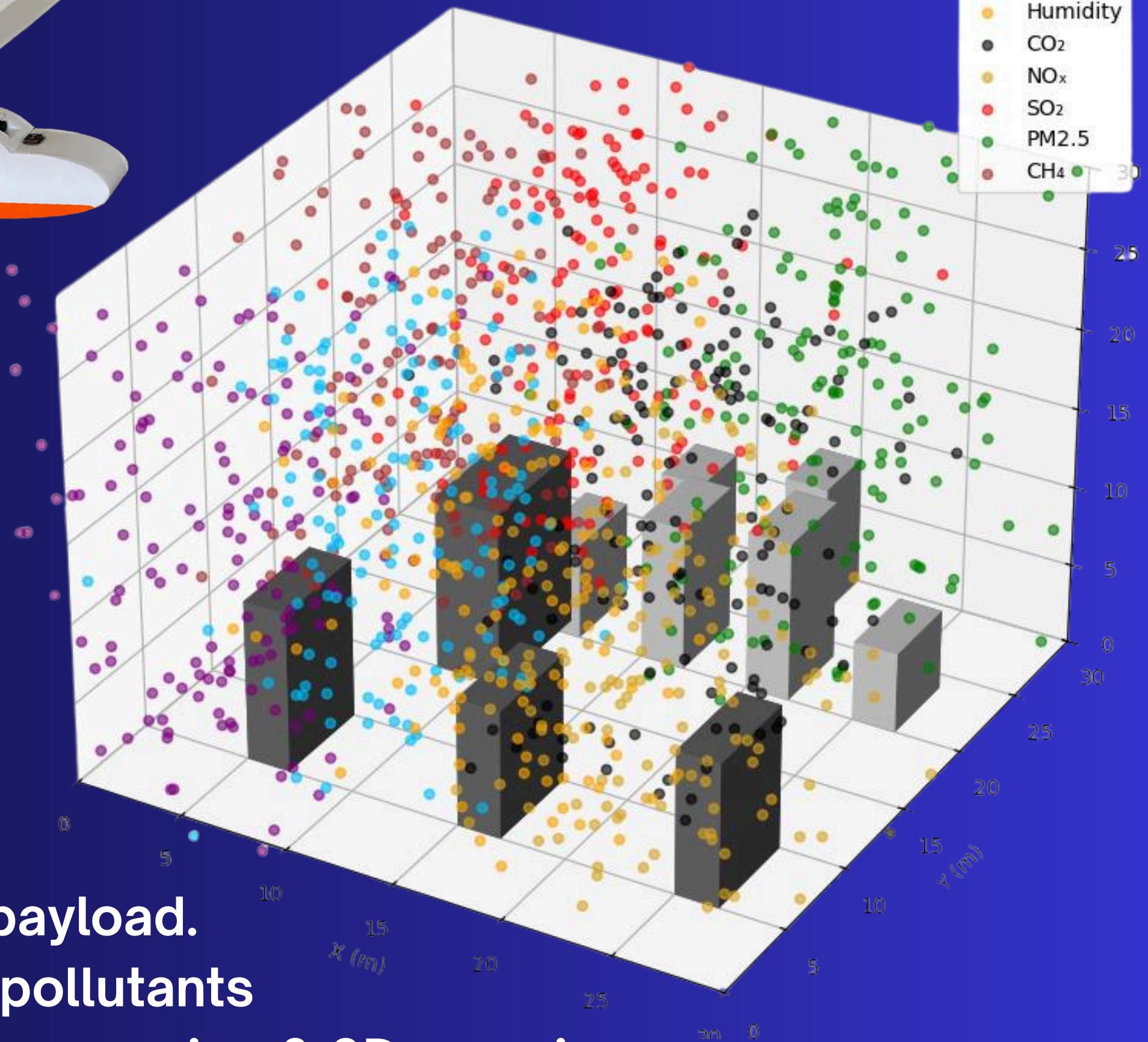
FROM OBSERVATION TO ACTION

Satellites like NASA TEMPO and global organizations like WHO monitor air quality from space.

Yet, they lack high-resolution, local measurements near the ground.

Our project aims to bridge this data gap using a VTOL drone payload sensor, turning global insights into local, actionable data.

AIRBORNE AIR QUALITY MONITORING



- Compact air-quality system in VTOL drone payload.
- Measures CO, LPG, alcohol vapors & other pollutants
- Sends data to ground station for real-time processing & 3D mapping

GLOBAL IMPACT & FUTURE VISION

- High-Resolution Data
 - Health & Policy Benefits
 - Healthcare Costs
 - Citizen Science Synergy
- Industrial Transformation
 - Carbon Footprint Monitoring
 - Advanced Atmospheric Analysis
 - Climate Action Support



PROJECT ADVANTAGES

- High-Resolution Measurement
- Fast & Regional Data
- Real-Time Cloud Processing
- Health & Policy Contribution
- Environmental Sustainability
- Cost-Effective & Scalable



THANK YOU.

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