



UNIVERSITY of
RWANDA

College of Science and Technology

Africa Center of Excellence in Internet of Things (ACEIoT)

Research Seminar

Fuzzy Based Prediction Model for Air Quality monitoring for Kampala city in East Africa

Abstract:

The quality of air affects lives and environment at large. Poor air quality has claimed so many lives and distorted the environment across the globe and much more in African countries where air quality monitoring systems are scarce or even do not exist. Here in Africa dirty air is brought about by the growth in industrialization, urbanization, flights, and road traffic. Air pollution is such a silent killer when not dealt with. Inhaling toxic air pollutants leads to serious health issues inclusive but not limited to heart condition and stroke, carcinoma, chronic respiratory organ unwellness, and metabolic process infections which later result into death.

Therefore, in this presentation, fuzzy based Air Quality index prediction model is designed to predict the air pollutants concentrations so as to create awareness to the public and concerned authorities to take adequate precautions.

The designed model takes in three air pollutant inputs that is Nitrogen dioxide, Sulphur dioxide and Particulate Matter 2.5.

The simulations were carried out in Mamdani fuzzy inference system and a comparative analysis between linear interpolation method and fuzzy logic was carried out and it was observed that the Kampala Air Quality index prediction model gave a great performance. Fuzzy logic gives satisfactory results in predicting air pollutants concentrations.



Katushabe Calorine
PhD in Wireless Sensor Network.
Student Reg number: 219008628
Email: calorinekatushabe@gmail.com

DATE & TIME:

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10:00 am to 11:00