Hashir khan (1001837203)​

Shruti Devani (1002026192)​

Harsh Thakkar (1001996152)​

Shashwat Chauhan (1002034494)​

1. **Research paper:** Indicate the full **title of the research paper**, its **authors,** and **conference/journal paper name** where it was published             ​

**Title:**

Waste Management and Prediction of Air Pollutants  
Using IoT and Machine Learning Approach

**Authors:**

* Ayaz Hussain, Pakistan, Department of Computer Science, University of Management and Technology Sialkot, Sialkot 51310.​
* Umar Draz, Pakistan, University of Sahiwal, Sahiwal 57000 and COMSATS University Islamabad, Lahore Campus, Lahore 54000.​
* Tariq Ali,Electrical, Saudi Arabia, Engineering Department, College of Engineering, Najran University, Najran 61441.​
* Saman Tariq , Pakistan, Department of Computer Science, University of Management and Technology Sialkot, Sialkot 51310.​
* Muhammad Irfan  , Saudi Arabia, Electrical Engineering Department, College of Engineering, Najran University, Najran 61441.​
* Adam Glowacz  , Poland.Department of Automatic Control and Robotics, Faculty of Electrical Engineering, Automatics,​  
  Computer Science and Biomedical Engineering, AGH University of Science and Technology, al. A. Mickiewicza 30, 30-059 Kraków.​
* Jose Alfonso Antonino Daviu ,Spain,  Department Electrical Engineering, Universitat Politecnica de Valencia, Instituto Tecnologico de la Energía Camino de Vera s/n, 46022 Valencia.​
* Sana Yasin, Pakistan, Department of Computer Science and Information Technology, Superior University, Gold Campus,​  
  Lahore 54000. Computer Science Department, COMSATS University Islamabad, Lahore Campus, Lahore 54000.​
* Saifur Rahman, Saudi Arabia, Electrical Engineering Department, College of Engineering, Najran University, Najran 61441.​  
  ​

**The conference/journal paper name where it was published:**

This "Waste Management and Prediction of Air Pollutants Using IoT and Machine Learning Approach" is published in <https://www.mdpi.com/>

**Reference Paper**

**Title:**

On field calibration of an electronic nose for benzene estimation in an urban pollution monitoring scenario

**Authors:**

S. De Vito a, E. Massera a, M. Piga b, L. Martinotto b, G. Di Francia

**The conference/journal paper name where it was published:**

<www.sciencedirect.com>

1. **Dataset**:

The dataset has been referred from the article below which can be accessed(limited) on <https://www.sciencedirect.com/science/article/pii/S0925400507007691?via%3Dihub>

As the above link doesn’t provide access to the whole document outside of UTA network, below is the pdf attached for the same.



1. **Code**

* Pseudo code used in research paper is as follows-

Theorem 1. Prediction Algorithm to Determine Bin Status  
Input: Trash level, weight, and time slot in CSV file  
Output: Prediction of bin status: un-predicted, un-filled, half-filled, or filled  
Time slot = 1 h  
Prediction = un-filled  
For all sensor data in a time slot  
Extract features based on weight level and trash level  
Write to CSV file  
End For  
Initialize the prediction interval  
Model = the trained bin status model  
for instance in prediction interval do  
label = Model.classifyInstance(Instance)  
If (label = un-known) them  
label = posteriorModel.classifyInstance(Instance)  
prediction =label  
else  
prediction =label  
end if  
end for  
return prediction

* A relatable source code for Air quality predictions. ​

<https://www.nature.com/articles/s41598-022-13579-2/figures/8>