# Municipal Solid Waste Management using Artificial Intelligence Models

## Research Proposal
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# INTRODUCTION

- The waste management process typically involve numerous technical, climate , environmental, demographic, socio-economic, and legislative Parameters.

- Proper Management of municipal solid waste management is one of the prime concern for metropolitan cities.

- Such complex nonlinear process are challenging to model, predict and optimize using conventional methods.

- Recently, Artificial Intelligence (AI) techniques have gained momentum in offering alternative computational approaches to solve solid waste management problems.

# OBJECTIVES

- To compare different models of artificial intelligence and to examine and evaluate their capacity in Municipal Solid Waste Management.

- To forecasting the quantity of municipal solid waste generation.

- To design and operate an effective waste collection system.

- To design the effective vehicle routing using Geographical Information System.

- To design automating the process of garbage sorting and disposal.

- To switching AI for smart recycling and waste management.

# NEED FOR STUDY

- The Major Problems affecting solid waste management are unscientific treatment , improper collection, and ethical problems.

- This turns leads to hazards like environmental degradation, water pollution, soil pollution and air pollution.

- Insufficient planning and inadequate operation are major reasons behind poor waste management.

- Recently there have been serious efforts to revolutionize the waste management industry towards sustainability and profitability by means of advanced technologies and intelligence systems.

# CONCLUSION

- A fundamental step in designing of an effective garbage management system is to predict the amount of waste that a city will generate.

- Determination of the volume of waste beforehand will result in proper planning of land fill sites, recycling units, development as operation of garbage collection infrastructure.

- Artificial intelligence based techniques will be successful for forecasting the volume of the waste and for the smart management of municipal solid waste.

# ACTION PLAN

- Reconnaissance and Survey
- Site selection
- Data collection- Solid Waste Generation in Municipality and current management practices.
- Site visit for understand about the current municipal solid waste management practices.
- Analyzing the conventional methods of solid waste management and find the drawbacks of system.
- Introduce the Artificial intelligence methods to find the better accuracy in quantifying the solid waste generated.

# ACTION PLAN…

- Identify the suitable models after comparing different models of artificial intelligence.

- Forecasting the quantity of solid waste generated using Al models

- Designing the smart waste dustbin for effective collection system and vehicle routing using GIS.

- Implementation of automated sorting system and disposal.

- Introduce smart recycling system with Artificial intelligence technology.

# THANK YOU