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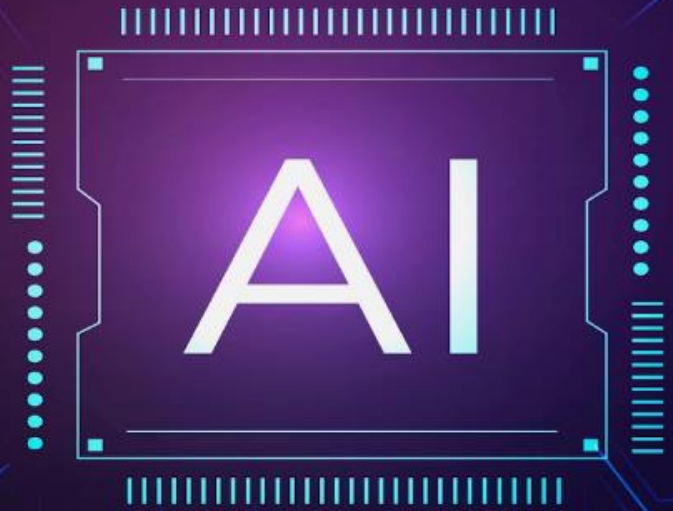
A Data Science Company



Case Study

Solid Waste Classification for a European Municipal Corporation

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About the Client

The End Client is a municipal corporation in Europe

Business Problem

The municipality has various kind of Waste Containers which are hosted on roads and localities. The waste could be Glass, Plastic, Liquid, Food Remains, Furniture etc. People dump the waste in the Waste Bin and the bigger waste like Furniture, Mattresses etc are dumped near the Waste Container. For each type of waste, different departments of Municipality are responsible. The solid waste would remain on the streets for longer period which irked the citizens. The Municipality has a Smart city app. The Citizens can report about the garbage lying near the container by taking the pictures and uploading it on the Smart city app. Based on the solid waste pictures, the back office team would identify the waste category and would create a ticket for respective department. However as the process was manual, there was a delay in ticket creation and hence delay in clearing the solid waste. The client hence wanted to automate the ticket creation processing using AI.

Solution

We developed custom AI Models to process the text & images uploaded by the citizens on the Mobile App. The AI Models were trained on the training images provided by the Customer. Based on the various type of wastes, the algorithm would return the right department. Along with image, the citizens would also write about the issue. Using NLP based Custom AI Models, we could classify the text, identify the correct department and return it to the App. Based on the AI Model inference, we also automated the task to create the ticket to the respective department. The manual ticket creation process was completely automated.

Outcome

The solid waste is not getting cleared in quick time as the ticket creation is automated. The client is delighted as the citizens are happy with the services.

Technology Used

Python, Flask RESTFUL APIs, TensorFlow, OpenCV, Deep Learning, NLP

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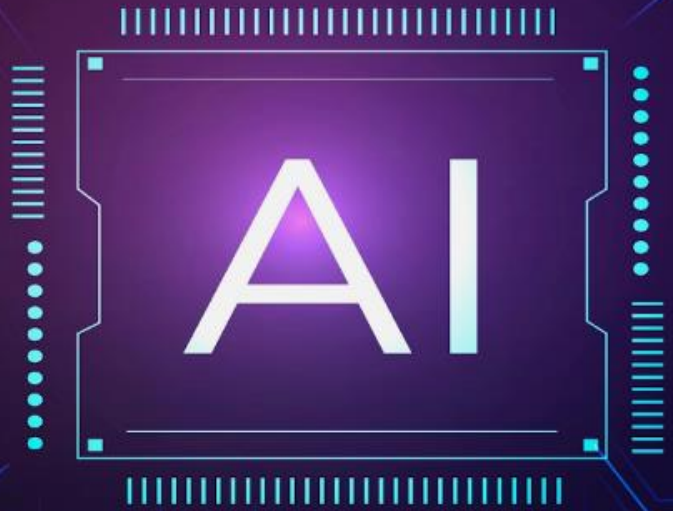

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