Using Artificial Intelligence to Create a Self-Driving Car Compatible with Bad Infrastructure

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Self-driving cars are considered the next world-changing project for Artificial intelligence as they present the future of transportation. Although these agents are becoming more precise and much better, these cars cannot be used in countries with bad infrastructure for different reasons. This project aims to give these agents the ability to drive on these roads using computer vision and Machine Learning. The result is a car that uses cameras and radars connected to an agent whose work is to predict the next move of the car trained with deep reinforcement learning and recurrent neural networks (RNN) after detecting path holes using object detection and convex hull algorithm and car's position on the road after segmenting it using Fully Conventional Network (FCN) and detecting parked cars. The system is also connected to a cloud-based system that connects cars, this way it can predict misfortunes and find a solution to avoid it using the data provided by the cars in real time. The agent required execution on the CPU as well as the GPU to accelerate processing to work in real time.

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