College : VADODARA INSTITUTE OF ENGINEERING, KOTAMBI, WAGHODIYA
Department : Computer Engineering
Discipline : BE
Semester : Semester 8
Project Name : Smart RC Car
Team ID : 43566

Form 1 – APPLICATION FOR GRANT OF PATENT

Applicants :

Sr. No	Name	Nationality	Address	Mobile No.	Email Id
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Inventors :

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I/We, the applicant(s) hereby declare(s) that:

Following are the attachments with the applications :

Form 2 - PROVISIONAL/COMPLETE SPECIFICATION

1 . Title of the project/invention :

Smart RC Car

2. Preamble to the description :

Provisional

3. Description

a) Field of Project / Invention / Application :

?Security Inspection Testers
?Machine Learning Developers
?Student with Interest in Machine Learning
?Insurance Companies
?Accident Investigation agencies

b) Prior Art / Background of the Project / Invention :

It is an computer based project
Also, Iot Based Project
?Applying Machine Learning Algorithm
?OpenCv Machine learning Library
?Image Processing

?Using Artificial Intelligence
?Using Pattern Recognition

c) Summary of the Project / Invention :

With increase in movement of goods and raw material being transported to various location. Companies are searching for cheap and cost effective ways to transport goods form one place to other. The already existing software relies on rigid programming which is incapable to handle the continuously changing environment of warehouses or other places. With such a technology the navigating and safety of such autonomous would increase.The project aims to build a miniature vision autonomous car prototype using Raspberry Pi as a processing chip. An HD camera along with an Distance sensor is used to provide necessary data from the real world to the car. The car is capable of reaching the given destination safely and intelligently thus avoiding the risk of human errors. Concepts like Machine Learning, Artificial Intelligence and Image Processing are used to generate a prospective of surrounding in model.

d) Objects of Project / Invention :

?Collect Driving Data
?Learning Driving Pattern
?Understanding Driving Pattern
?Learning about Machine Learning
?Making Technology accessible
?Costs Less
?Easy to Build
?Easy to repair
?Error Correction Easier
?Open Source

e) Drawings :

f) Description of Project / Invention : (full detail of project) :

Online shopping and improvement in automation in industrial work has lead to increase in movement of products and raw material. This increase in movement of goods and raw material being transported to various location. Companies are searching for cheap and cost effective ways to transport goods form one place to other. The already existing software relies on rigid programming which is incapable to handle the continuously changing environment of warehouses or other places. With such a technology the navigating and safety of such autonomous would increase. Not only the prices could be decrease but also more and more people would start developing there interest in machine learning programming. Though machine learning has been with us for about more then 50 years now. But the development in hardware and improvement in networking has made it much more practical in today’s world.With the growth number of vehicle ownership is fast increasing, accompanied by more than one million traffic accidents per year worldwide. According to statistics, about 89.8% of accidents are caused by driver’s wrong decision-making. Smart Driving system for vehicles aim to eliminate human driver error leading to fewer injuries and fatalities. The project aims to build a miniature vision of smart car prototype using Raspberry Pi. Camera provides live feed to microprocessor which can then be processed to identify cars, bikes, or other obstacle. The car is capable of reaching the given destination safely and intelligently thus avoiding the risk of human errors. Concepts like Machine Learning, Artificial Intelligence and Image Processing are used to generate a prospective of surrounding in model Its works by using the training data provided and generated previously. Then computing the data and training the rc car to fallow the same path that was previously used. The main aim of this project is to introduce a technology that can be user friendly, open-source, cost effective and scope of growing further in an more effective tool. The parts used are basic and easily available in market. Further more, the programming is done in python which is an highly efficient language. OpenCv is the backbone of this project as the neural network which is in play is library provided in it. Hence, even after neural network being such an complicated subjects but still the simplicity of the code remains. The learning process is also kept linear to make the complexity of programming as low as possible.

g) Examples :

h) Claims (Not required for Provisional Application) / Unique Features of Project

Smart car on only distance sensor
Smart car on only camera
Expensive Self driving system

4. Claims

5. Date and signature

6. Abstract of the project / invention :

.In summry, smart rc car is an neural network based project which can be scaled in various ways to fit requirments. Any one can easily drive car to collect data required for training phase. This data can then be computed to generate neural network model. Hence, making it capable to drive autonomusly. The accuracy of model directly proportional to provided error free data. Additionaly, red light detection, green light detection, stop sign detection and obstical detection makes rc car much more safe.

Form 3 – STATEMENT AND UNDERTAKING UNDER SECTION 8

Name of the applicant(s) :	I/We, Anshul Sharma ,Parikh Trusha Sanjaykumar ,Patel Krishmaben Rameshbhai
	Hereby declare :
Name,Address and Nationality of the joint applicant :	(i) that I/We have not made any application for the same/substantially the same victim invention outside India.
	(ii) that the rights in the application(s) has/have been assigned to

Name of the Country	Date of Application	Application Number	Status of the Application	Date of Publication	Date of Grant
N/A	N/A	N/A	N/A	N/A	N/A

(iii)That I/We undertake that upto the date of grant of the patent by the Controller, I/We would keep him informed in writing the details regarding corresponding applications for patents filed outside India within three months from the date of filing of such application.

Dated this 15 day of April 2019

To be signed by the applicant or his authorised registered patent agent :	Signature.....
Name of the Natural Person who has signed :	Anshul Sharma ,Parikh Trusha Sanjaykumar ,Patel Krishmaben Rameshbhai

To,
The Controller of Patents,
The Patent Office,
At Mumbai