



**T.C.**

**MARMARA UNIVERSITY**

**FACULTY of ENGINEERING**

**COMPUTER ENGINEERING DEPARTMENT**

CSE4197 Engineering Project I Proposal

Title of the Project

# *DamageWiz: Cost Calculation of Cars Damaged using Artificial Intelligence*

Group Members

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## 1. Aim of the Project

In case of a traffic accident, damage assessment of the car that is involved in the accident can take a lot of time, be expensive and is prone to human error. Car must be taken by tow truck to an expert to make necessary controls.

Not all the mechanics can be trusted during the assessment of the damage. Mechanics may try to deceive the accident victim to repair undamaged parts of the car, also the expert who is assigned to assess the damage may make mistakes that will cause the accident victim to overpay for the repariement.

It is unknown where to find damaged parts cheapest. Also, people cannot find closest mechanics to buy parts of damaged parts of the car or call them to ask for help.

These problems make these kinds of situations intolerable for drivers. Our aim is to fix such problems.

## 2. Methodology

We will develop an application that contains machine learning algorithms that will be a solution for the problems in the previous section.

Our application will be able to quickly detect the brand and model of the damaged car, damaged parts of the car and the total repair cost of the damaged car by utilizing the photos of the damaged car which were taken by the accident victim. This way errors that may be caused by human factors will be minimized.

The accident victim will be able to see the nearest mechanics for the car parts or any material the victim needs. Also when accident victims search for the mechanics, he/she can also see the cheapest mechanics as well.

Users will be able to rate mechanics. In this way, users will be able to reach reliable people who have received good votes. At the same time, if a user is not satisfied with a mechanic, he/she will be able to warn other users by stating in the review part.

We will create and search necessary dataset in the beginning of the development process. Most useful algorithms of machine learning and artificial intelligence will be used. After we determine the dataset and algorithm, image processing will be used to generate needed results.

## 3. Software/Hardware Requirements

- Virtual Private Server with Linux operating system installed.
- Android / IOS Mobile Phone
- .NET Core MVC
- PostgreSQL

## 4. Draft Time Plan

First Semester:

- Artificial intelligence, machine learning, image processing and technologies that will be used in development will be searched.
- Accident, car photos will be collected for dataset.
- People who work at insurance companies will be talked to get more information about accidents and regulations.

Second Semester:

- Algorithms, models of artificial intelligence will be developed.
- Models will be trained with a dataset and tested.
- Application will be developed.

## 5. References


- **https://www.researchgate.net/publication/344924316_Exterior_Vehicular_Damage_Detection_using_Deep_Learning**
- **https://dl.acm.org/doi/10.1145/3406601.3406651**
- **https://ieeexplore.ieee.org/abstract/document/9021687**