Persian Car Plate Detection using YOLOv8 - Dataset Report

# Abstract

This report documents a dataset used for Persian car plate detection, formatted and labeled for the YOLOv8 object detection model. The dataset includes 313 labeled car images divided into training, validation, and test sets. Each image contains annotated regions for license plate detection. This report provides an overview of the dataset, including its structure, labeling process, and application in a YOLOv8 framework.

# Introduction

The detection of car license plates in images is a critical task in many computer vision applications, from traffic monitoring to automated tolling systems. This dataset specifically focuses on Persian car plates, offering a labeled dataset tailored for YOLOv8, one of the latest versions of the You Only Look Once (YOLO) object detection model. YOLOv8 is optimized for high-speed, accurate detection, making it well-suited for real-time applications.

# Dataset

## Dataset Structure

The dataset contains 313 labeled images of Persian cars organized into three primary folders:  
- \*\*TRAIN\*\*: Images used for training the model.  
- \*\*VALIDATION\*\*: Images used for model validation during training.  
- \*\*TEST\*\*: Images designated for evaluating model performance.  
Each folder includes corresponding annotation files detailing the locations of license plates within the images. An additional folder provides a raw image format for initial testing and development.

## Source and Annotation

The images in this dataset are sourced from Kaggle and annotated using Roboflow, a platform that supports high-quality annotation tools suitable for machine learning datasets. Annotations are provided in YOLO format, which is compatible with YOLOv8, specifying bounding box coordinates around each detected license plate.

# Conclusion

This dataset, specifically tailored for Persian car plate detection using YOLOv8, provides a structured and labeled foundation for training and evaluating an object detection model. With its organization and high-quality annotations, the dataset is readily applicable to real-world object detection tasks in Persian car plate recognition.