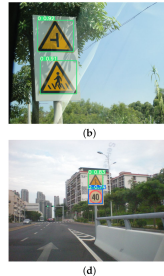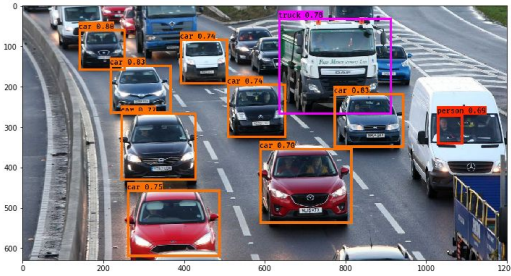# Traffic Detection Using CNN (YOLO)

What is the problem?

The "Traffic Detection Using CNN (YOLO)" project develops a real-time system for detecting vehicles, pedestrians, and signals, improving road safety and traffic management for autonomous driving and smart cities.

What has been done earlier?

❏ **Traditional Methods:** Earlier methods used manual feature extraction techniques like edge detection and SVM for traffic detection, but they lacked real-time performance and struggled with accuracy.

❏ **Deep Learning Advances:** The introduction of CNNs and YOLO enabled real-time, high-accuracy traffic detection, significantly improving performance without manual feature extraction.

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Traffic Detection Using CNN (YOLO)

What are the remaining challenges?

- ❏ **Accuracy in Diverse Conditions:** Ensuring high detection accuracy in varied lighting, weather, and traffic scenarios remains challenging.
- ❏ **Real-Time Processing:** Achieving consistent real-time performance with low latency and high accuracy, especially in high-traffic environments, is still a hurdle.

What novel solution proposed by the authors to solve the problem?

- ❏ **Enhanced Model Architecture:** The project uses an advanced YOLO model for improved accuracy and efficiency in object detection.
- ❏ **Data Augmentation:** Implementing techniques to expand the training dataset, enhancing the model's ability to generalize across different traffic scenarios.
- ❏ **Key Innovations:**
  - ❏ Real-Time Processing: Optimized for low-latency, real-time detection.
  - ❏ Adaptability:Improved performance under diverse lighting and weather conditions.

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