


Computer Vision Hackathon: Emergency Vehicle Classification

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- Background Information
 - Question
 - Modelling Approaches
 - Future Improvement

Background Information

It's sometimes difficult for emergency vehicle to pass through traffic

Distinguishing between emergency and non-emergency vehicles becomes important in a traffic monitoring system or self-driving car system

Data: 965 non-emergency vs 681 emergency, available in Analytics Vidhya

Question

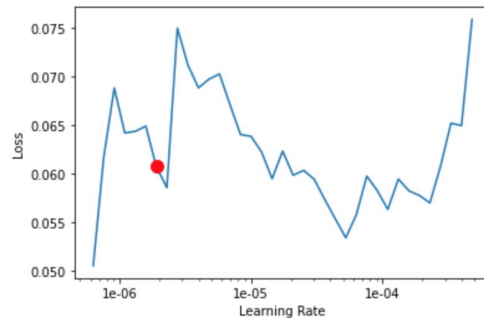
What models can be used for vehicle classification?

How accurate can a machine learning model identify emergency vehicles?

Modelling

- Data transformation techniques
- Model used: ResNet-101 - a CNN model
- Best learning rate: 0.002

LR Finder is complete, type {learner_name}.recorder.plot() to see the graph.
Min numerical gradient: 1.91E-06
Min loss divided by 10: 6.31E-08



Future Improvements

- Various other CNN models may be suitable in this case
- Techniques to improve image quality may be helpful
- Validation strategies may be useful to reduce possible training errors and improve consistency across different datasets