

Week 7

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Accuracy of the IDM

- The Intelligent driver model is a 'safe' model. It does not allow for collisions
- Drivers who fit the model are 'safe drivers'
- Drivers who do not fit the model are 'aggressive drivers'
- So how well does the model fit the data?

Calculating Accuracy

- There are 4 easily detected aggressive driving behaviors:
 - Speeding
 - Tailgating
 - Cutting off other drivers
 - Excessive lane changes
- These behaviors can be considered the ground truth for aggressive behavior

Continued

- Drivers who do not fit the IDM would be expected to exhibit aggressive behaviors
- The accuracy of the model is as follows:

$$\text{Accuracy} = (\text{Do NOT fit IDM} \ \& \ \text{numAggBehaviors} > 0) + (\text{fit IDM} \ \& \ \text{numAggBehaviors} = 0) / (\text{total vehicles})$$

- Using the standard model parameters given in the paper:
 - Accuracy = 68.5%

Working on

- Trying to optimize the parameters of the model.
- Increasing the accuracy at detecting aggressive behaviors