



How Does AI Detect Cars?

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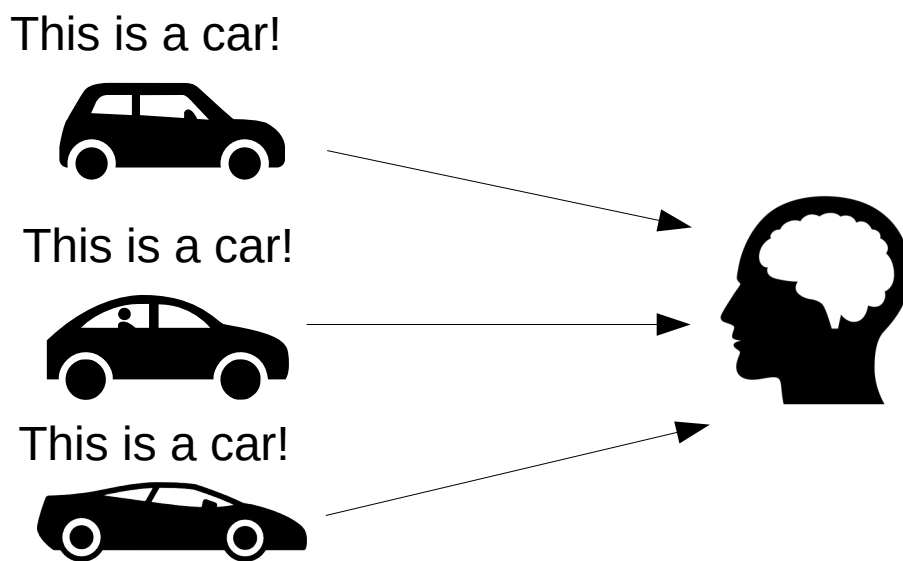
How Does Human Detect or recognize Cars?

What is this?



How Does Human Detect or Recognize Cars?

- Training!
 - Human brain is trained to recognize cars by seeing many cars.



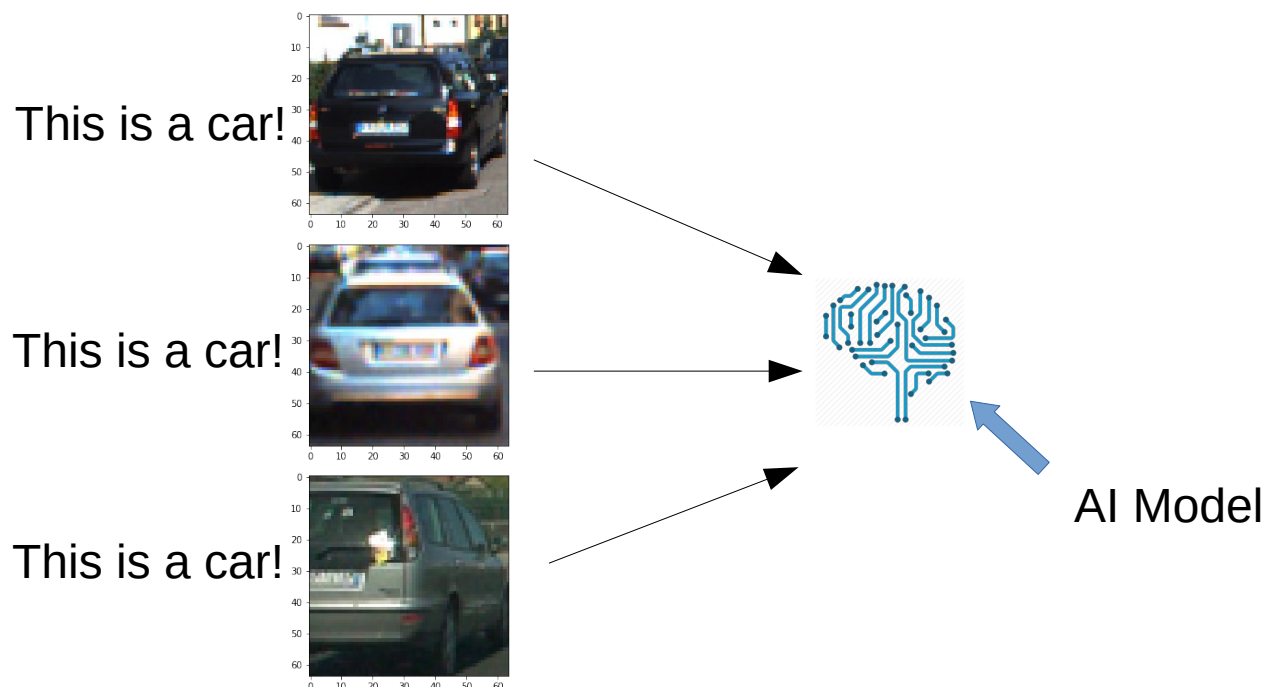
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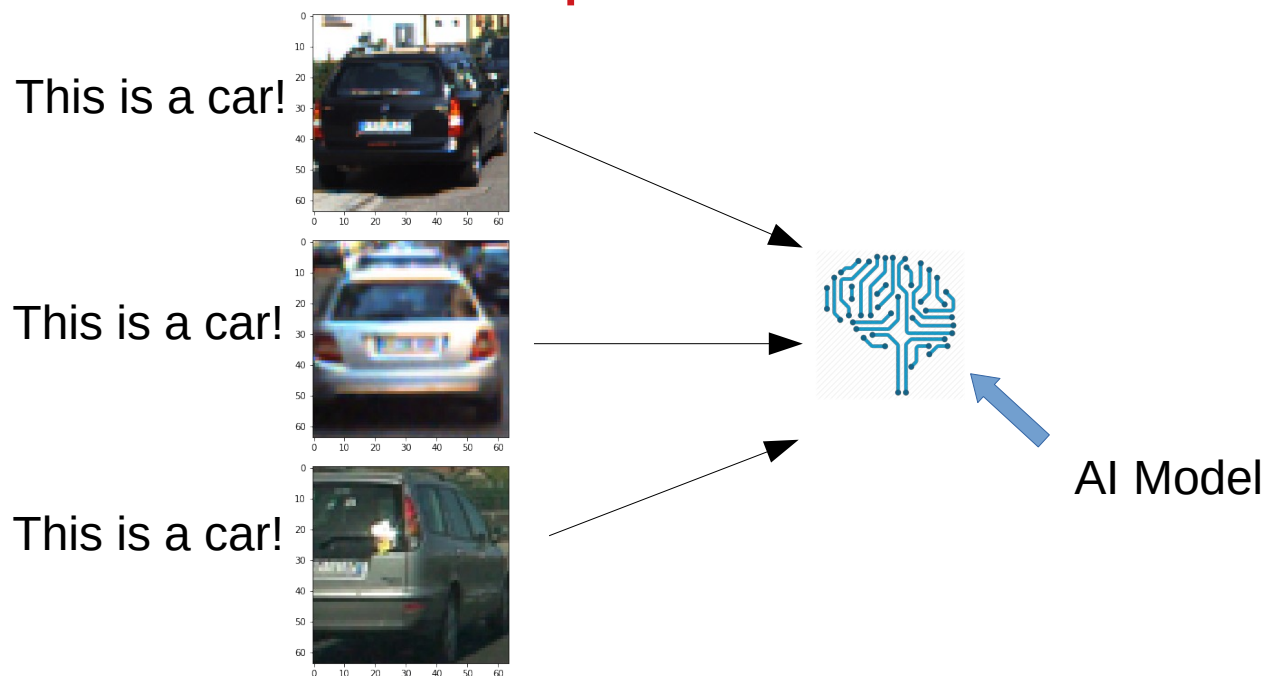
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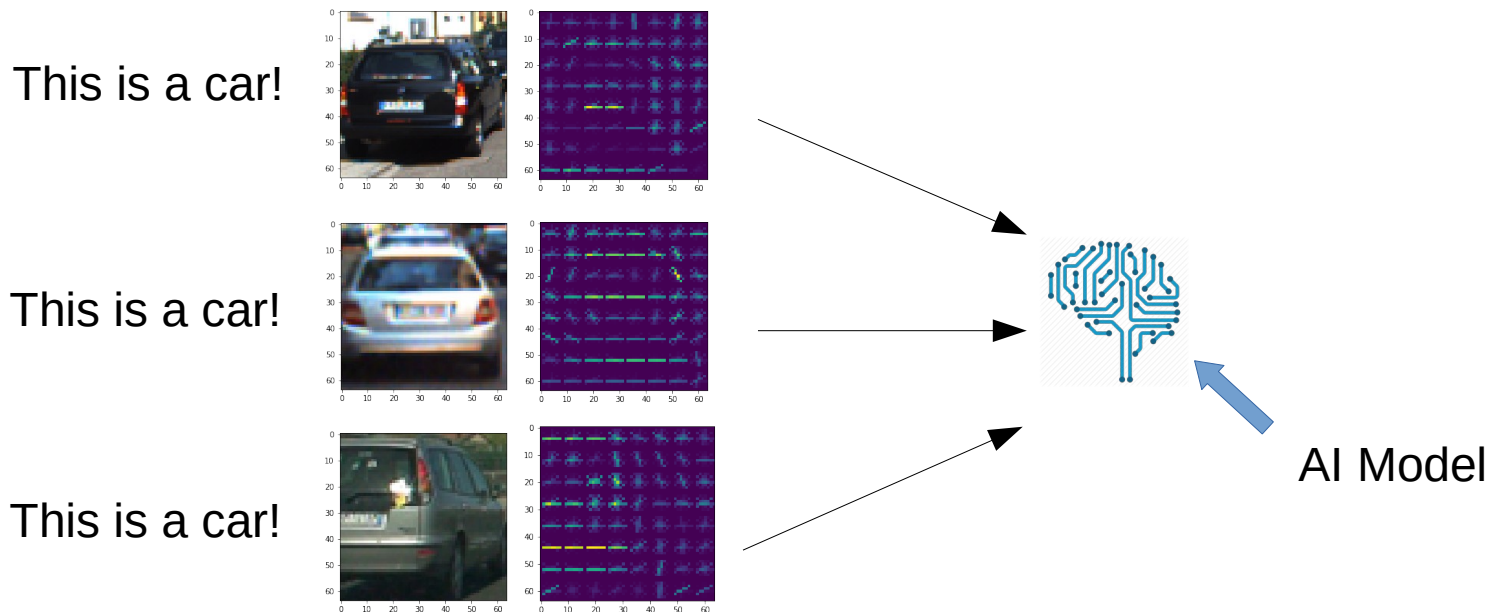
How Does AI Detect or Recognize Cars?

- Training!
 - An AI Model is trained to recognize cars by seeing many cars. **We Let the AI see thousands of car photos!**



Actually, Not Photos

- The AI only needs to see the necessary “features” of the car photos.
 - The “features” are the edges of the photos -- hough lines as used in lane detection.



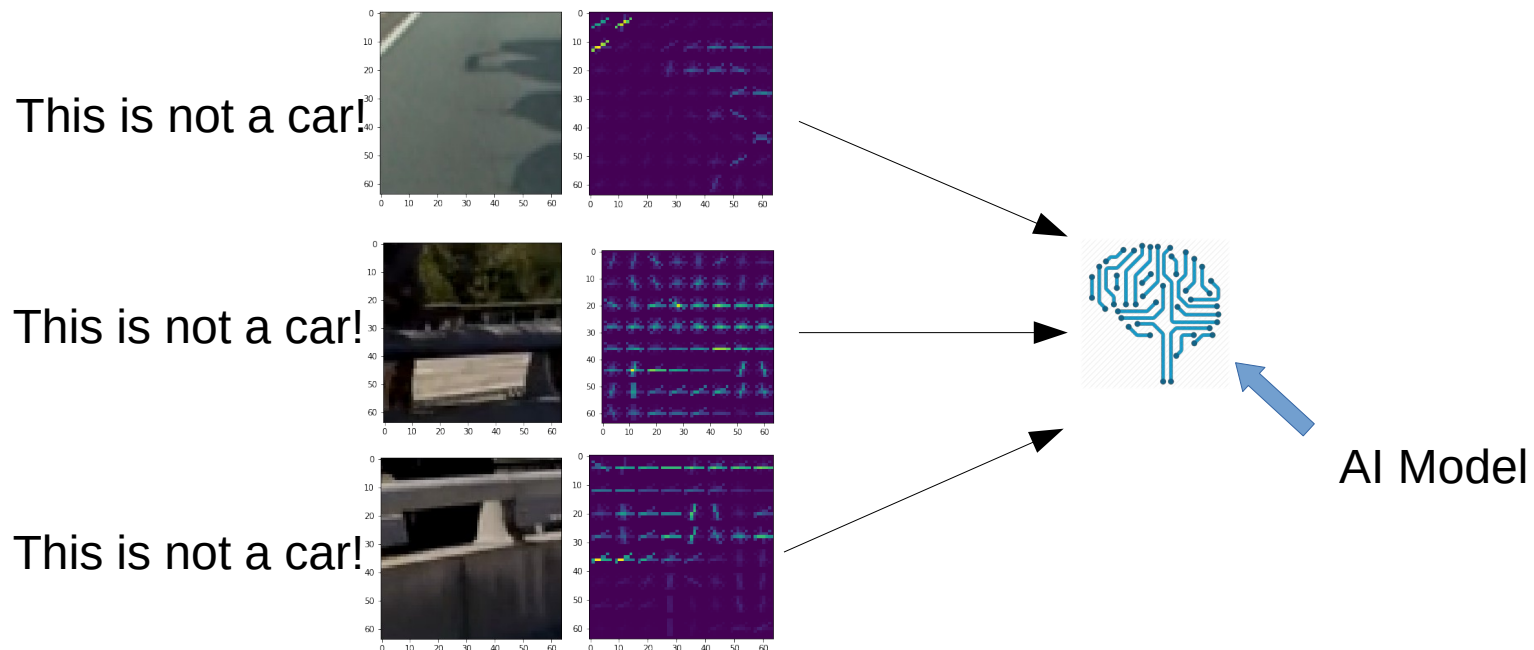


Also Non-Car Photos

- Human brains know what are non-cars from previous life experience
- Our AI model has not previous life experience, it is like a “blank paper” before
- So we also need to tell our AI model what are not cars

Training with Non-car Photos

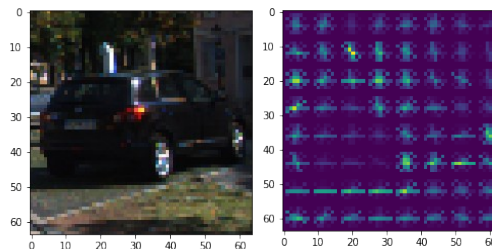
- We do the same thing with non-car photos
 - Thousands of non-car photos
 - Hough lines extracted



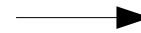
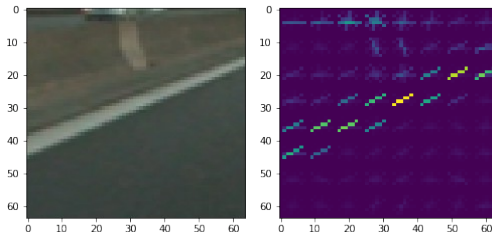
The AI Model for Detecting Cars

- The model can tell cars from non-cars.

Is this a car?



Is this a car?



What is an AI Model Exactly?

- It is a collection of very very complex math equations
- It can have tens, hundreds, thousands, or even millions of parameters (coefficients)
- The training process determines the values of these parameters (coefficients)

