University of Colorado **Boulder**

Department of Computer Science
CSCI 5622: Machine Learning
Chris Ketelsen

Lecture 25:
Ethical Issues in Machine Learning

Ethical Issues in Machine Learning

Brainstorm Sesh

What Are Some Ethical Issues in ML?

Brainstorm Sesh

Brainstorm Sesh

Case Study: Filter Bubbles

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- Original Idea by Eli Pariser (Book: *The Filter Bubble*)
- **Main Idea**: Personalized search determines what information you see and what information you don't see.
- **Example**: You search for information on BP. Based on your personalized search, you may get:
  - Stock and Business information about BP
  - Information about the Deep Horizon Spill
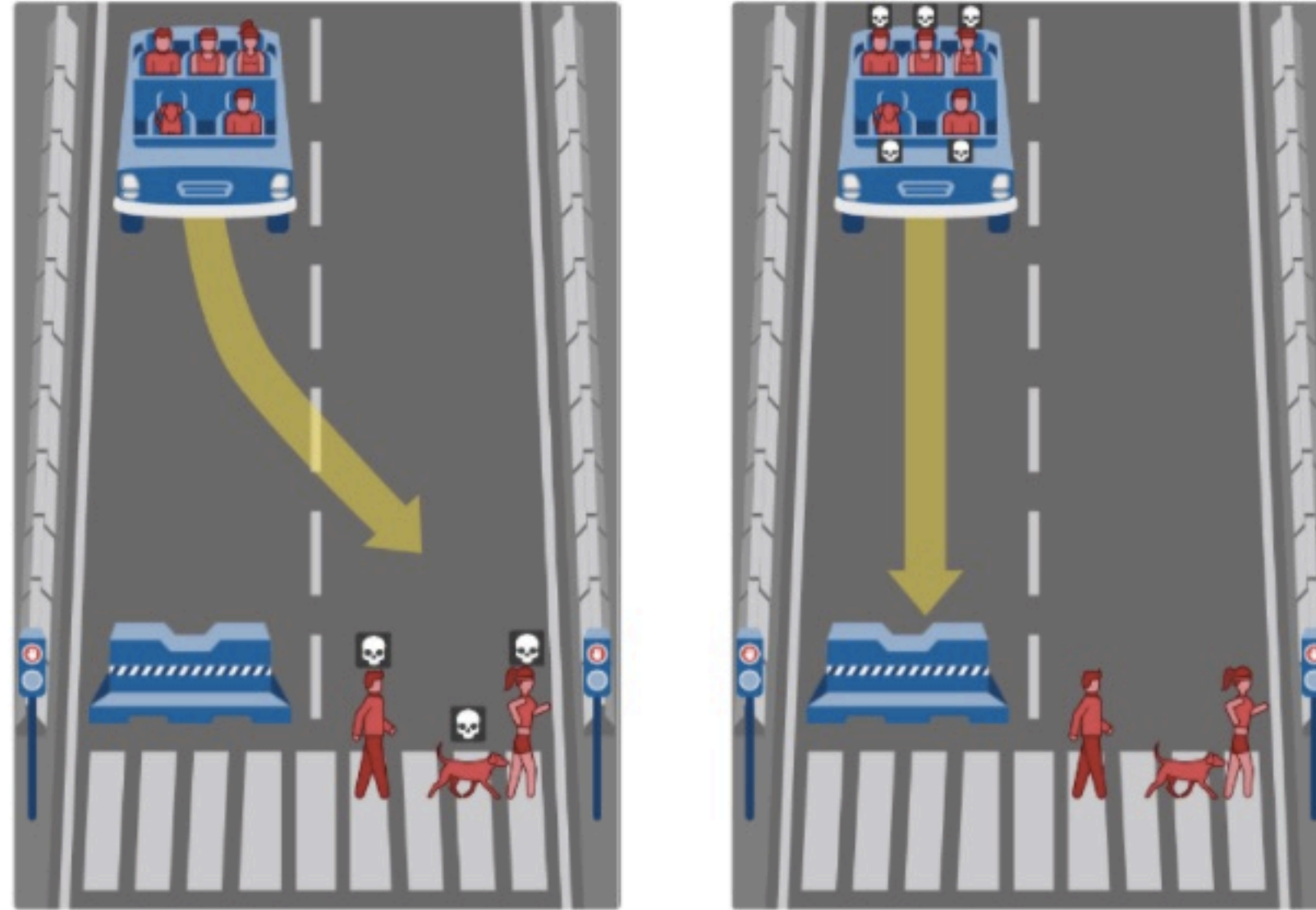- **Debate**: Good thing or bad thing?

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- **Debate**: Good thing or bad thing?

- **Comparison**: Targeted ads or recommendations

Case Study: Filter Bubbles

Case Study: Self-Driving Car Crashes

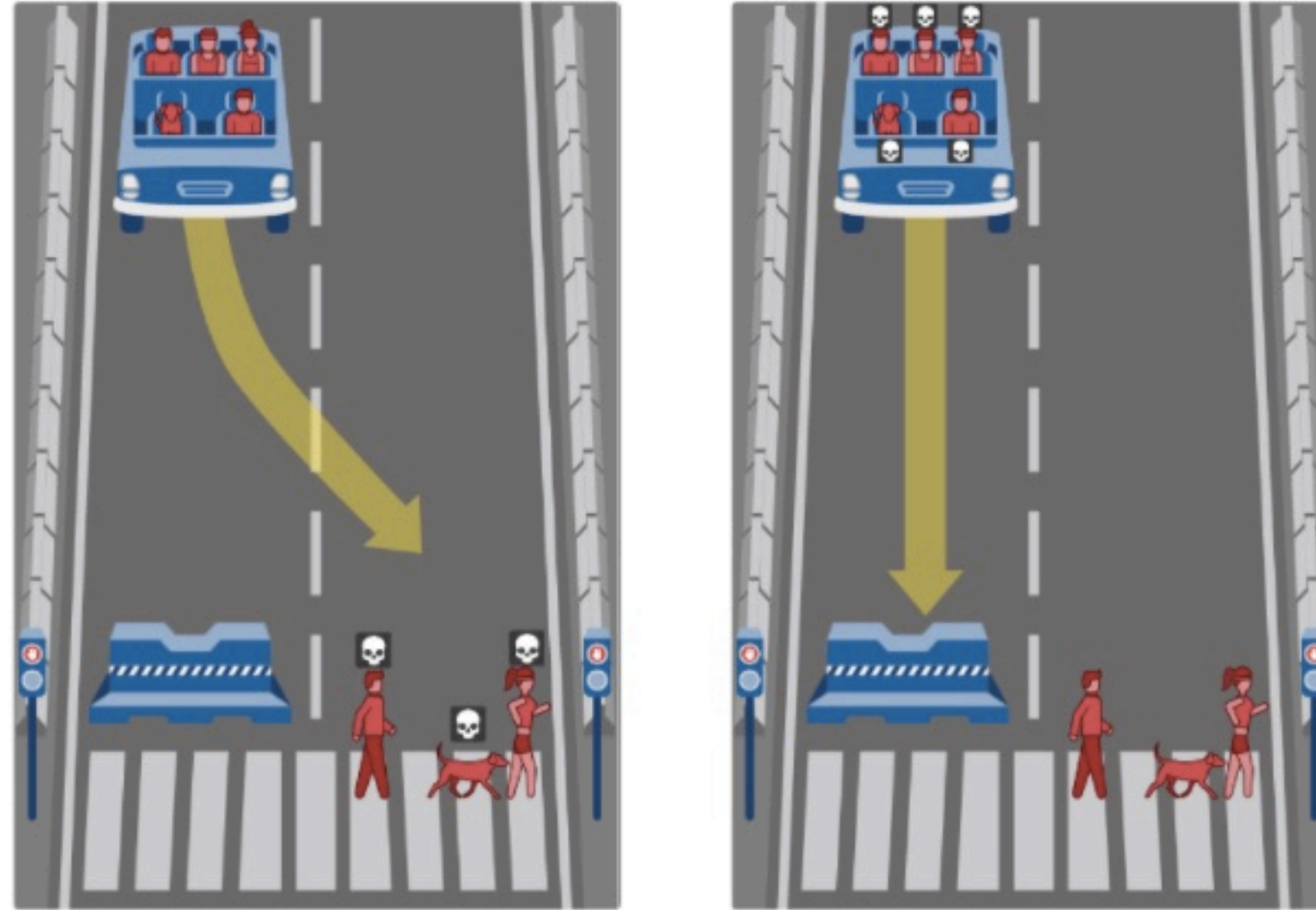What should the self-driving car do?

Case Study: Self-Driving Car Crashes

- Interactive study by MIT Moral Machine

- **Main Idea**: In the event of an inevitable crash leading to likely loss of life, what should the car do?

- **Example**: Car crash will either result in death of

  - driver and several passengers

  - several pedestrians
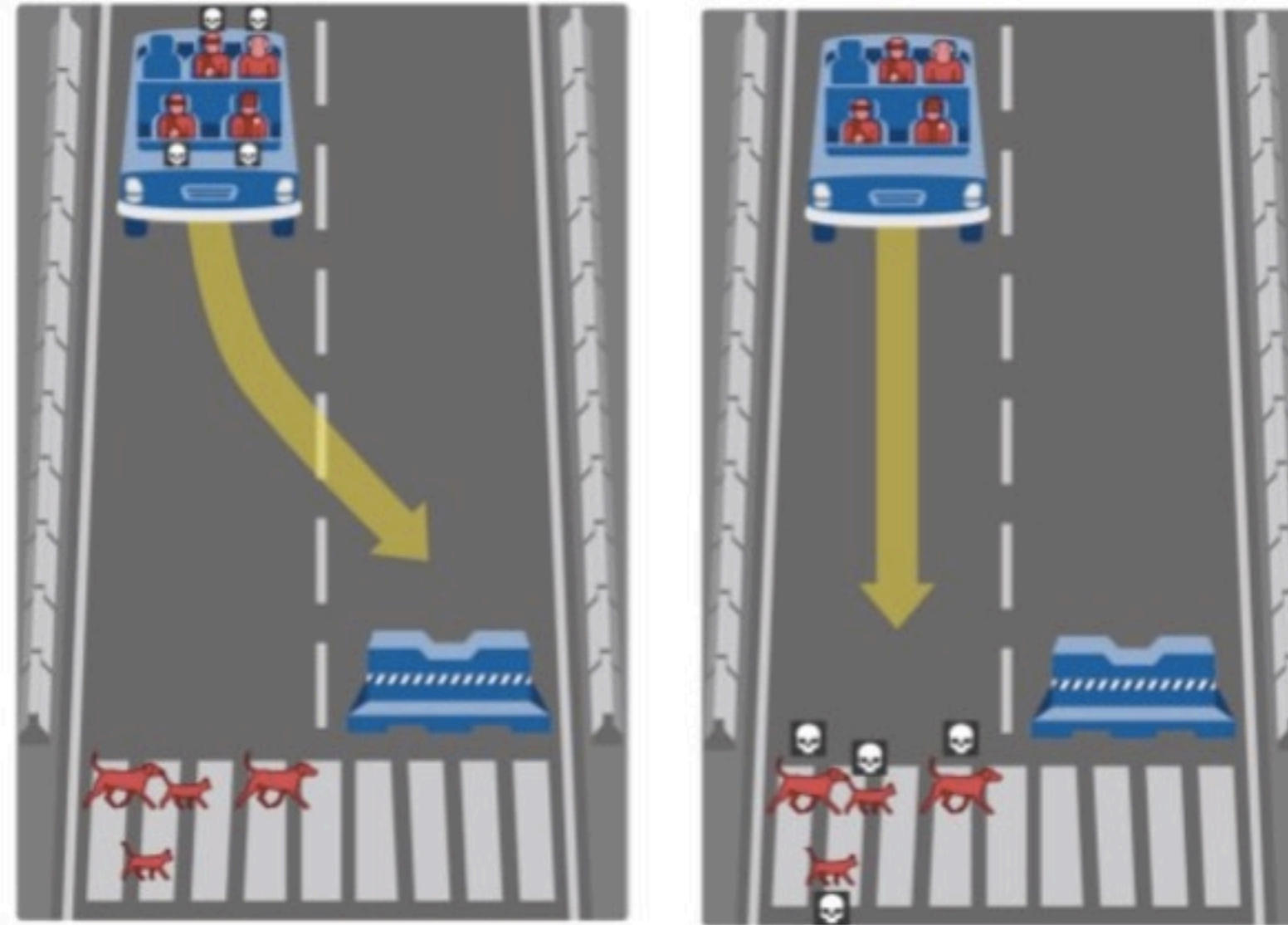
- **Debate**: How do we choose?

Case Study: Self-Driving Car Crashes

What should the self-driving car do?

Case Study: Self-Driving Car Crashes

What should the self-driving car do?

The Ethical Use of Data

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Main Questions:

- What data is OK to use?

- When data is private and what is public?

- Who owns your data?

- What should be done to anonymize data?

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Discussion Topic: ϵ-Differential Privacy

- Add some noise to data to protect identity

- Bonus regularization?

Can Machines Be Racist?

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Can Machines Be Racist?

- In 2016 it was discovered that FaceBook was letting advertisers target housing adds based on race, a blatant violation of the Federal Fair Housing Act.

- How can we guard against this?

- Whose fault is it when it happens?

Acknowledgments

Many of the articles used in this lecture were sourced by Alvin Grissom II

Resources:

- Eli Pariser, *The Filter Bubble: How the New Personalized Web is Changing What we Read and How We Think*
- MIT Moral Machine: http://moralmachine.mit.edu/
- Bo Moore, *What the Ashley Madison Hack Teaches Us about Ethics, Noisy Data and Machine Learning*

In Class

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