Artificial Intelligence
Teacher Guide

Artificial Intelligence is a *CS and Society* resource which aims to:

- introduce some popular applications of artificial intelligence, and
- get students thinking about their related ethical implications.

The resource is divided into four sections:

DIP

The DIP section is designed to introduce the topic, discover what students already know, and encourage curiousity.

This section contains definitions of artificial intelligence, machine learning, and training data. It also includes an activity which allows students to participate in a machine learning simulation.

- AI for Oceans: rebrand.ly/ai-for-oceans

DINE

The DINE section is designed to introduce new concepts and explore content.

This section is further divided into three artificial intelligence applications. The self-driving cars section contains a kahoot activity to separate facts from fiction, and a video about the benefits and the dangers of having self-driving cars.

- Kahoot activity: rebrand.ly/kahoot-self-driving-cars
- (Optional) Paper kahoot: kahootSelfDrivingCars.pdf
- Pros and Cons video: rebrand.ly/pro-con-self-driving-cars
- Blank list: listBlankSelfDrivingCars.pdf
- Fillable list: listFillableSelfDrivingCars.pdf
- Complete list: listCompleteSelfDrivingCars.pdf

The voice recognition section contains a brainstorming task, an article about the ethics of analyzing speech, and some reflection questions.

- (Optional) Online brainstorming tools: mindmeister.com, mindmup.com
- Ethics article: rebrand.ly/ethics-of-analyzing-speech
- Blank reflection: reflectionAnalyzingSpeech.pdf
- Fillable reflection: reflectionFillableAnalyzingSpeech.pdf

The facial recognition section contains videos that introduce the technology, highlight some applications, and demonstrate facial recognition bias. It also includes some discussion questions.

- Facial Recognition video: rebrand.ly/pbs-facial-recognition
- Gender Shades video: rebrand.ly/gender-shades

The DIGEST section is designed to make learning personal. It challenges students to reflect, internalize, and act.

This section asks students to put themselves in the role of a self-driving car and make ethical decisions. It also asks students to consider contributing their voice to a global voice dataset. Lastly, it provides an activity where students can explore how they feel about the use of facial recognition technology.

- Moral Cars video: rebrand.ly/moral-cars
- Moral Machine: moralmachine.net
- Common Voice: commonvoice.mozilla.org/en
- Level of Comfort activity: rebrand.ly/facial-recognition-applications

    Note that the Level of Comfort activity does not provide an easy way to save results. This activity could be assessed by visual inspection, or by having students take a screenshot of their completed work.

The DESSERT section is designed for those who want more. It may contain links to additional videos, articles, websites, or include some enrichment challenges.

This section contains links to more information about artificial intelligence in general, self-driving cars, voice, and facial recognition.

- A People's Guide to AI: rebrand.ly/peoples-guide-ai
- CNBC: rebrand.ly/driverless-cars
- Washington Post: rebrand.ly/self-driving-cars-vision
- Scientific American: rebrand.ly/speech-recognition-bias
- 10 Year Challenge: rebrand.ly/10-year-challenge-meme
- Gender Shades: gendershades.org

Visit cemc.uwaterloo.ca/resources/cs-and-society.html for more *CS and Society* resources.