

SSP 100 - 10

How Computers See

10 / 13 / 2026

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Today's Topics

- Questions/Comments?
- A few comments on relating last class to Optical Character Recognition and License Plate Readers
- Class discussion on the reading/watching
- Use some class time to formulate potential essay thesis statements, individually

OCR and license plate reading

- Solutions to mnist must predict a digit (0..9)
- Solutions to general OCR need to handle a larger character set (letters, digits, punctuation etc.) and of different fonts
- Example usage:

[https://en.wikipedia.org/wiki/Optical character recognition](https://en.wikipedia.org/wiki/Optical_character_recognition)

OCR and license plate reading

- License plate reading is a more difficult problem yet --- besides detecting the plate and extracting the individual characters, problems of moving vehicles, weather, damaged plates, etc.
- Currently done with CNNs
- e.g. <https://ieeexplore.ieee.org/document/11187533>

Clarification of what is learned by a neural network

- There was a good question last week about what is learned --- is it a function?
- I think I answered a different question (about the decision boundary) so let me clarify.
- Let's revisit the neural network playground link from last time.

Class discussion

- Randomly assigned groups of 4 and 5
- Discussion topics:
 - Pros and cons of automated license plate readers (ALPR)
 - For the cons – thought on if any of them be remedied
 - by better computer vision
 - by other technology improvements
 - by non-technological improvements
 - or not able to be overcome

Towards an essay

- Individually, come up with potential essay arguments
- For an added challenge, you are not required to actually agree with the argument you are making.
- Let's visit this page:
- https://www.skidmore.edu/writing_guide/terms/argument.php

Towards an essay

- Your argument could fall into any of these example categories (or others).
 - A pro ALPR stance
 - An anti ALPR stance
 - A balanced ALPR stance
- Other topics that seemed to resonate with some of you (or at least that was my reading of the room when discussing these topics):
 - Ethical use of Amazon Mechanical Turk (mentioned when TED talk referred to its use in labelling millions of images for ImageNet creation) – can argue for, against, or a balanced view
 - Use of the word learning in Machine Learning -- relation (or lack thereof) to biological learning
- Ethical considerations of anything else that came up so far this semester.