SSP 100 - 10
How Computers See

10 / 29 / 2026

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Today's Topics

- Questions/Comments?
- Reminder: In-class exam on TUE 11/3
- Finish Discussion of YOLO and Joseph Redmon's TED videos
- Announce next homework
- Use remainder of class time to write thoughts/get started on next homework.

Discussion of TED videos

- In the 1st video “How computers learn to recognize objects instantly” from 2017, Joseph Redmon discusses his YOLO algorithm.
- What is YOLO and what does it do?
- What did it improve vs. prior work?

Discussion of TED videos

- In the 1st video from 2017, Joseph Redmon discusses his YOLO algorithm.
- What is YOLO and what does it do?
  - It is a machine learning technique for detecting objects in images and where they are in the images (in a bounding box)
- What did it improve vs. prior work?
  - Can do the task in 20 milliseconds, vs. prior work that took 20 seconds to process an image
  - 20 milliseconds is 1/50 of a second
  - Allows it to run in real time on video at 30 fps
    - because 1/50 < 1/30

Discussion of TED videos

- He said it is a general purpose system, that can be trained for any image domain.
- What domains did he mention?

Discussion of TED videos

- He said it is a general purpose system, that can be trained for any image domain.
- What domains did he mention?
  - Self driving cars
  - Finding cancer cells in tissue biopsies
  - Detecting animals in Nairobi National Park
  - What objects do you think it needed to train on for these domains?

Discussion of TED videos

- He said it is open source and in the public domain – free for anyone to use
- Last line in the first video:
- "can't wait to see what people will build with this technology"

Discussion of TED videos

- Second video “Computers can see. Now what?” from June 2018
- Mentions CNNs and that they sort of mimic how the human visual system works
- train it on seeing many images of different objects in a supervised manner
- Can predict identity, age, mood (e.g. happy/angry/etc.) of humans

Discussion of TED videos

- If running on a smartphone could help visual tasks for the blind
- self driving vehicles (could potentially reduce traffic accidents)
- In Congo - track western lowland gorillas and track their behavior
- At University of Oslo – a master’s student was using YOLO to find and diagnose cancer
- Underwater robot to navigate and explore the ocean

Discussion of TED videos

- Army General showed him using Yolo on drone footage to find and track vehicles on a battlefield
- Ends with Computer Vision can be used for good
- But it is being used to
  - invade privacy
  - sell advertising
  - maintain structures of power

Short article

- Written in 2020
- What did it say?

Thesis statements

- In the past I asked you to come up with a couple of thesis statements that you could use for potential essays.
- Come up with a thesis statement related to the recent TED videos on YOLO.
- Let’s visit this page and read it:
- https://www.skidmore.edu/writing_guide/terms/argument.php

Homework

- Let me read the next homework assignment

In class work

- Log in to the computers and do
- Applications → Office → Libreoffice Writer
- Type your stuff
- Save it to disk
- Also Export As PDF
- Send me a pdf of what you worked on right before class ends.