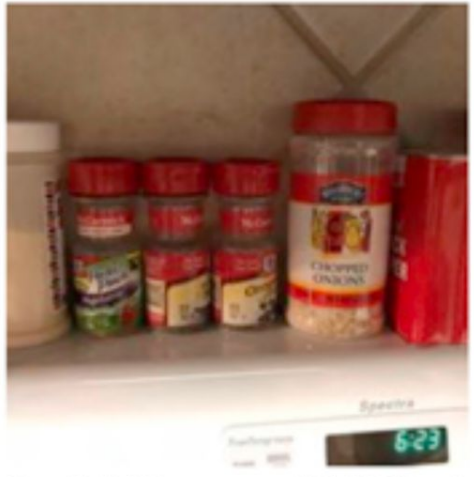
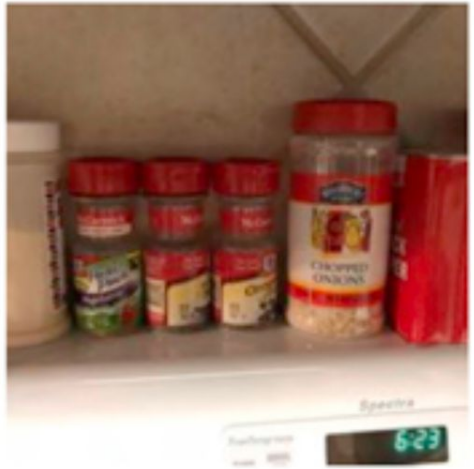
Computer Vision and Society

Fairness

1. Algorithmic fairness
2. Biases in data (spurious relations)




Fairness



Ground trutt Spices
Azure: bolt, wall, counter, food
Clarifal: containe;, food, can, medicine, stock
Google: seasoning seasoned sal, ingredient, spice, spice
Amazon: sheit, tin, pantry, furniture, aluminum
Watson: tin, food, pantry, pairt, can
Tencent: spice rack, chal

Ground truth: Soap
Arure: tales, design, art, sink
Clarital: people, faucet, heathcars, ltvatory, wash ciose:
Google: product, Baud, wate, fud, battroom eccessory
Amazon: sink indoors, borde
Watson: gas las, storaga tank, loletry, disper 10ã0 disper
Tencent lotion, toletry, soap dispenses, depersal

Ground truth Soap
Arure: food, cheese, bread, cake, sandwich
Clarifal: food, wosd, cooking, delicious, hea thy
Google: food, dish, cuisine, comfort food, spam
Amazon: food, confectionary, sweets, burger
Watson: food. food product, turmeric, seasoning
Tencent: food, dish, matter, fast food, nutriment

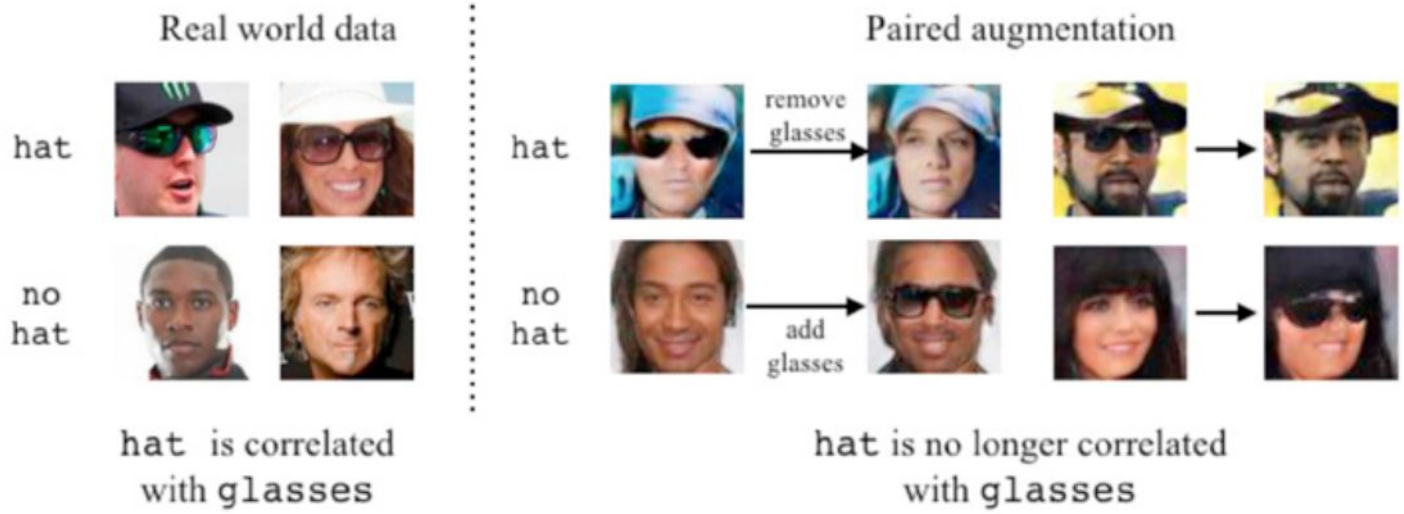
Ground truth Spices
Azure: bolle, beer, counter, denik, open
Clarital: container, food, bottle, drink, stock
Google: product, yelow, drink, bottle, plaste bottle
Amazon: beverage, beer, alcohol, drink, bollle
Watson: Bod lvdar food supple, panty, condmert, 100/
Vencent: condiment, sauce, flavoner, catsup, hol sauce

Fairness

1. Generative Adversarial Networks (GANs) to Create Unbiased Datasets and Algorithms
    a. “Fairness GAN, which included a classifier trained to perform as poorly as possible on predicting the classification result based on a protected attribute.”
    b. “The authors used GANs to generate pairs of realistic looking images that were balanced with respect to each protected attribute.”

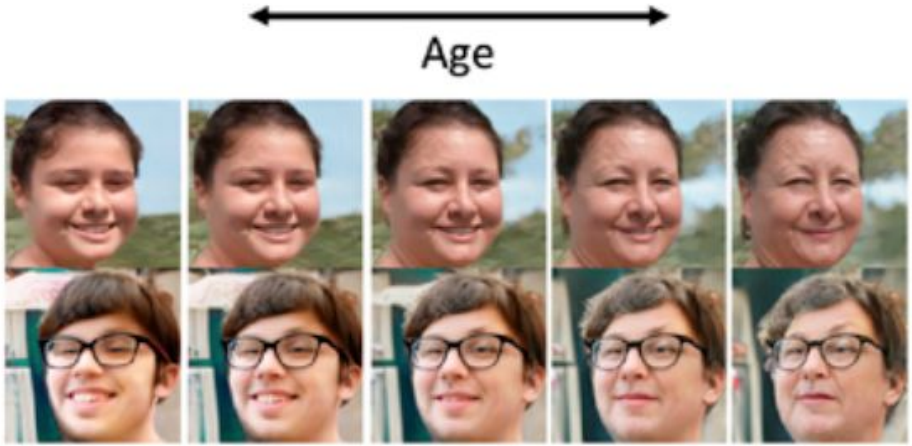
Fairness

1. “The authors used GANs to generate pairs of realistic looking images that were balanced with respect to each protected attribute.”



Fairness

1. “It may be difficult to distinguish whether a given biased result is caused by algorithmic bias or by biases in the dataset”
    a. “Counterfactuals for Analyzing Algorithmic Biases”



Privacy

1. “Datasets of medical results, financial transactions, views of public places, all can contain information that must remain private.”
    a. “For example, in 1997, the medical records of the governor of Massachusetts were identified by matching anonymized medical data with publicly available voter registration records”
2. “Differential privacy allows extracting aggregated information about a population from a database without revealing information about any single individual.”

Ethics

1. Facial analysis for resume screening
2. Face recognition at protests
3. Privacy concerns about alway on cameras
4. Self driving cars
    a. 30,000 deaths annually in US due to human mistakes
    b. Self driving cars could reduce this number drastically, but there will still be fatalities?
    c. “societal-scale version of “the trolley problem”

Ethics

1. CV in warfare?
2. Allow machines to make decisions in general?
3. Workplace monitoring by computers for
    a. Improving productivity
    b. Improving safety
    c. Preventing harassment

References

1. Foundations of Computer Vision - Chapter 4