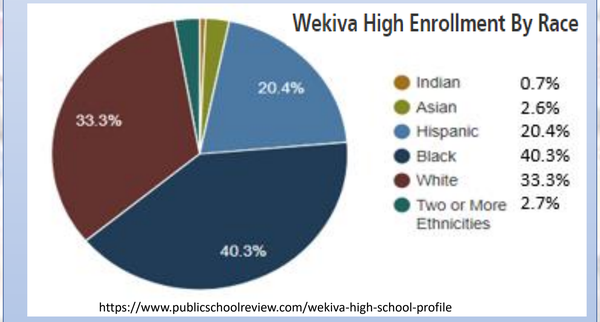
OBJECTIVE:

- Students will be able to describe different methods for image crowd counting.
- Students will learn what is Computer Vision and where you can apply.
- Students will learn how to use Edge Detection to count a large crowd

---

WEKIVA HIGH SCHOOL

- Title 1 school & 100% Free lunch
- 2126 students (05/2018) All students have laptop, some don't have home internet
- 49% female



https://www.publicschoolreview.com/wekiva-high-school-profile

---

REFERENCES:

- UCF Computer Vision Department / PhD Students projects

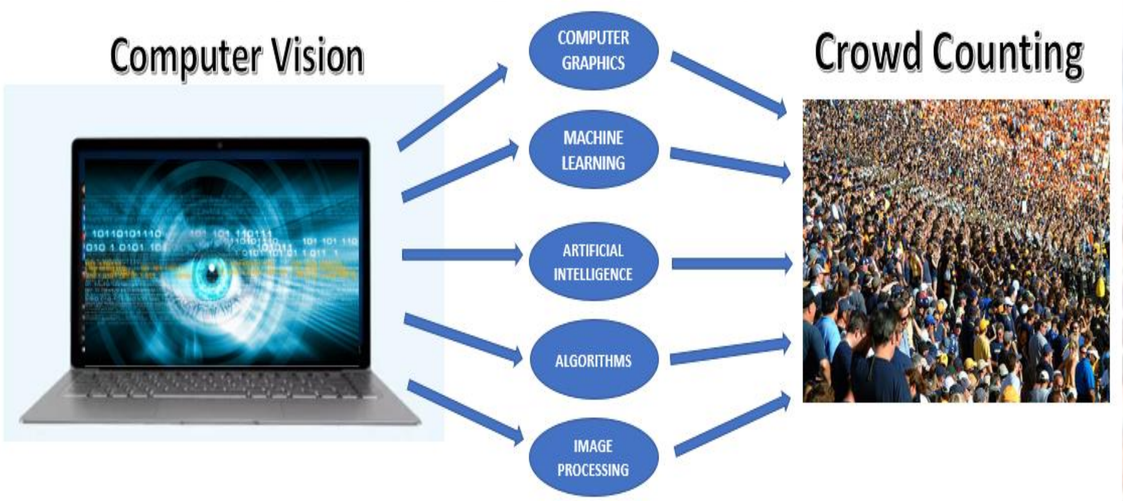
ACKNOWLEDGEMENTS :

- Dr Mubarak Shah and Dr. Lobo – UCF Computer Vision Department
- Kishan S Athrey , Muhammad Tayyab Rodney Lalonde – UCF PhD Students

UCF CENTER FOR RESEARCH IN COMPUTER VISION

Introducing Computer Vision / Large Crowd Counting

MIRTES CORREA – WEKIVA HIGH SCHOOL – OCPS
RET (Research Experience for Teachers) - Summer 2018



MOTIVATION AND EDUCATIONAL GOALS

- To introduce the concepts of Computer Vision, crowd counting and edge detection
- Show all the opportunities on the Computer Science jobs
- Use real-world applications of Computer Vision and Computer Science
- Practice and compare different methods for Large Crowd Counting
- Create Algorithm for count large crowd image

LESSON PLAN (4 days)

DAY 1 - Computer Vision

- definition and areas of application
- UCF and Computer Vision projects and programs
- Students classwork: why and where Computer Vision makes our lives better?

DAY 2 & 3 – CROWD COUNTING

- Algorithm: count people/objects of an image
- Introduce Jacob's Method for Crowd counting
- Students count crowd manually using Jacobs's Method
- Introduce software for large Crowd counting
- Compare manual and software methods

Day 4 – EDGE DETECTION

- Explain how a computer see an image
- Explain Convolution intuition / edge detection
- Practice example (multiply matrix to detect edge)

Standard(s)/Benchmark(s) Addressed

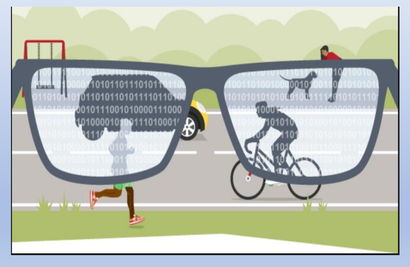
SC.912.CS-CS.2.14 - tools applied to provide automated testing environments.

SC.912.CS-CS.3.1 - digital tools or resources real-world task.

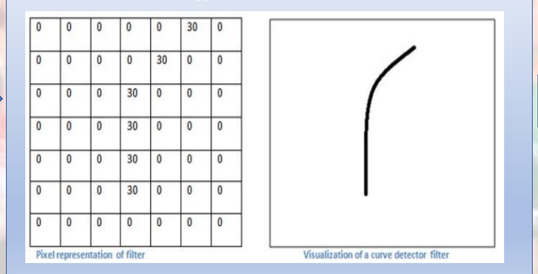
SC.912.CS-CS.2.10 - Design and implement a simple simulation algorithm.

UNDERSTANDING CROWD COUNTING

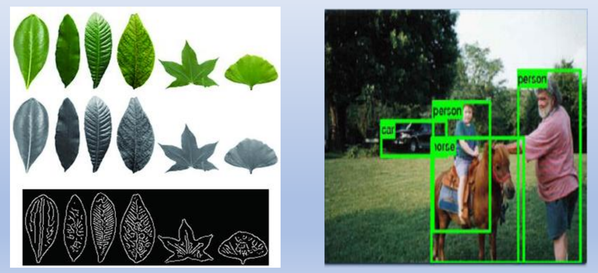
How computer see an image



Convolution intuition Edge detection



Edge Detection using computer software



How computer software counts crowds

