

AI and Computational Thinking with VEX

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Workshop Goals

By the end of this workshop you will be able to:

- Explain what environmental factors impact the AI Vision Sensor
- Code with the AI Vision Sensor to complete a task

What Comes to Mind?

AI & Computational Thinking:

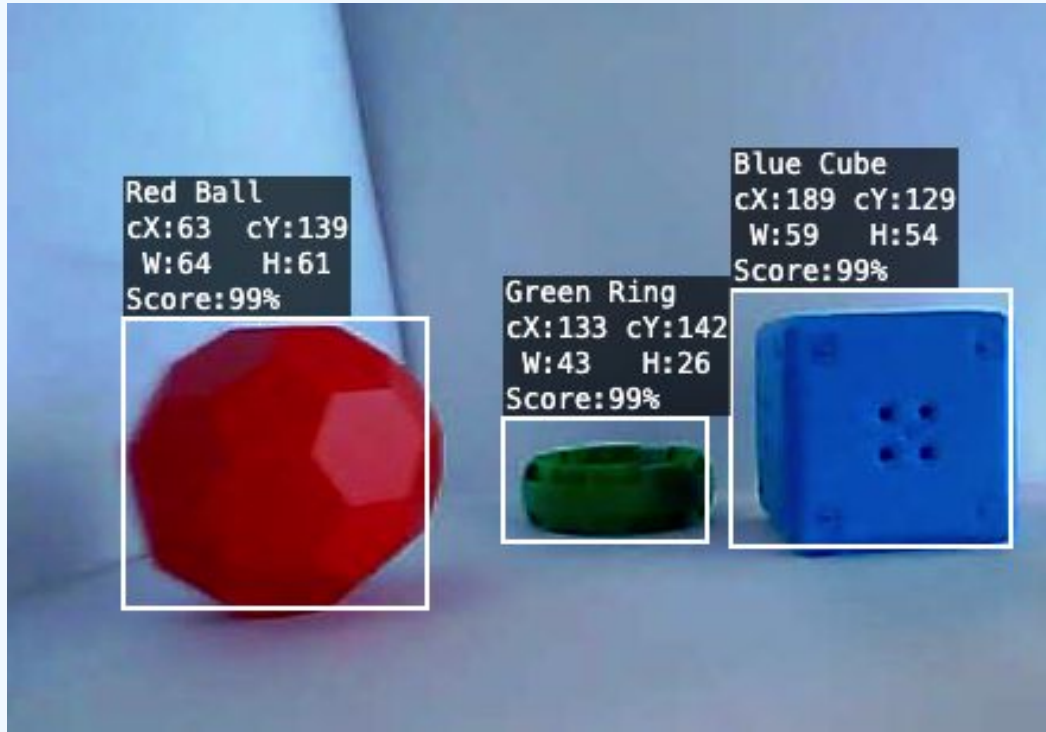
- Definitions or examples
- How you use it
- Questions you have

What is Artificial Intelligence?

“Artificial Intelligence is a branch of computer science concerned with techniques that allow computers to do things that, when people do them, are considered evidence of intelligence.”

- Dr. David S. Touretzky

AI Vision Sensor





IMAGE_497.jpg

AI Database

VEX IMAGE 680 480 3 0

Ball na 0 0 25 0 109 40

BlueBarrel na 0 0 489 360 531 408

OrangeBarrel na 0 0 432 0 521 64

Robot na 0 0 56459 680 250

Ball na 0 0 111 361 159 407

OrangeBarrel na 0 0 430 9 488 84

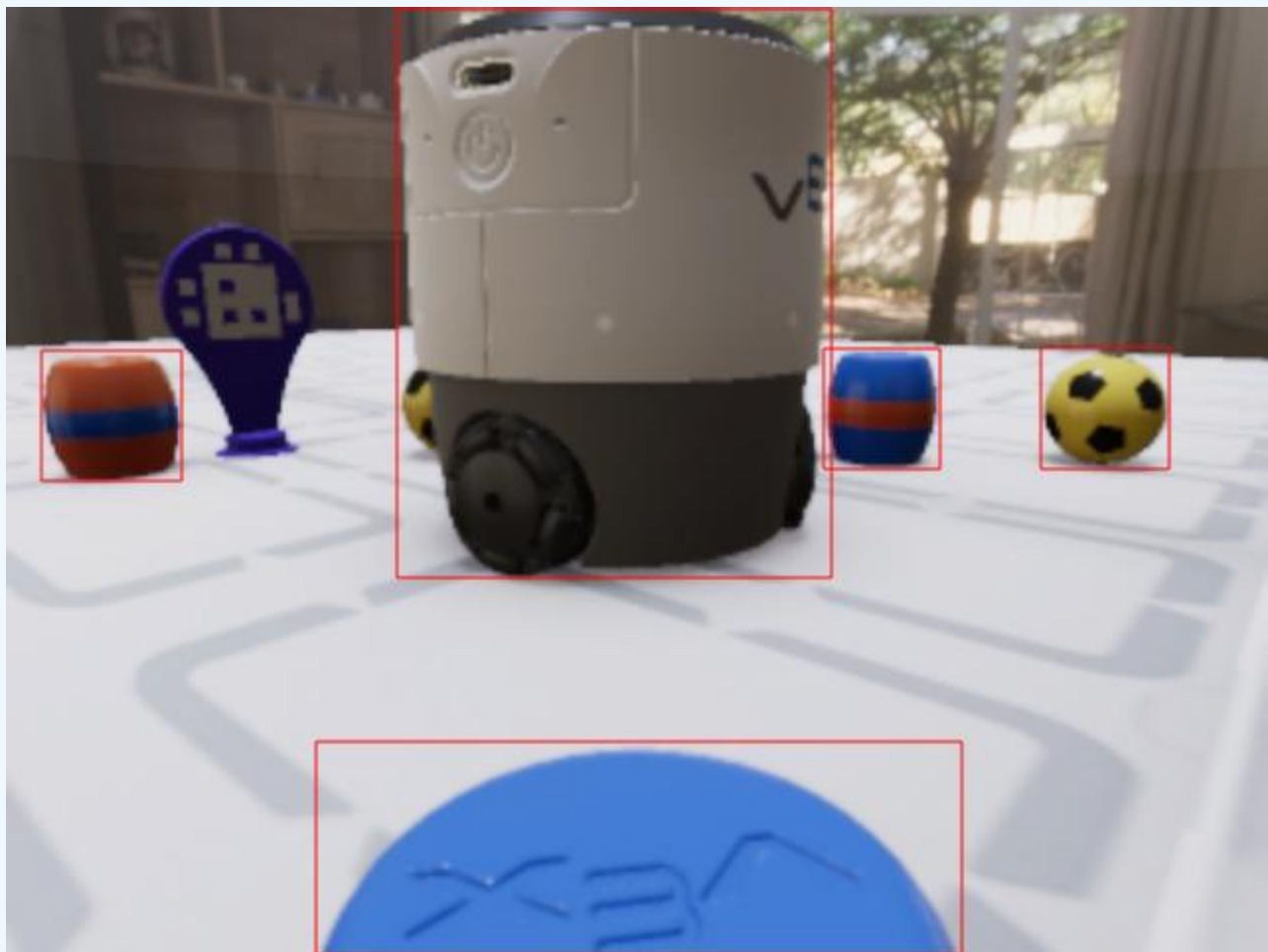
Robot na 0 0230 133 349 282

Ball na 0 0 345 307 402 365

BlueBarrel na 0 0 245 279 296 316

OrangeBarrel na 0 0 0 271 65 351

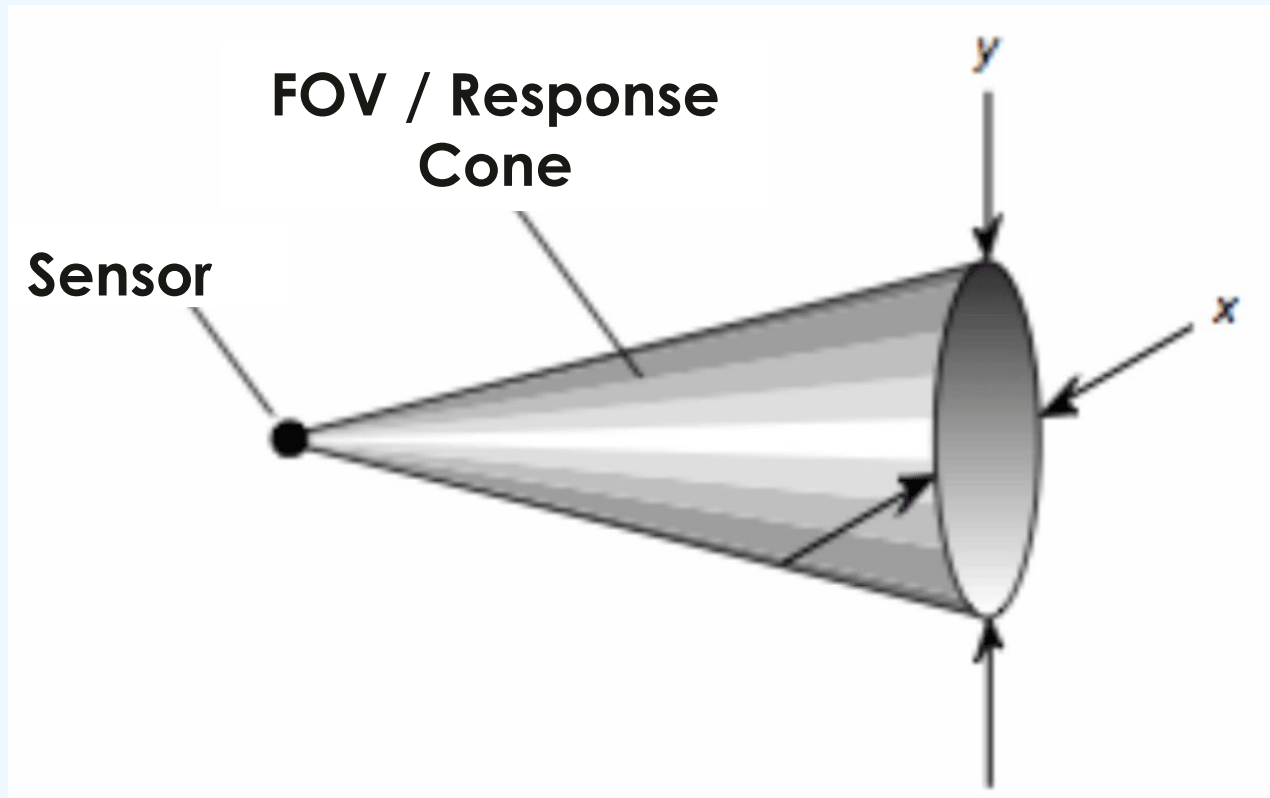




AI Vision Sensor & Privacy

- The model runs entirely on the sensor
- No data is sent or stored externally
- Supports student data privacy (FERPA, GDPR)

Field of View



Can you “trick” the AI Vision Sensor?

Explore:

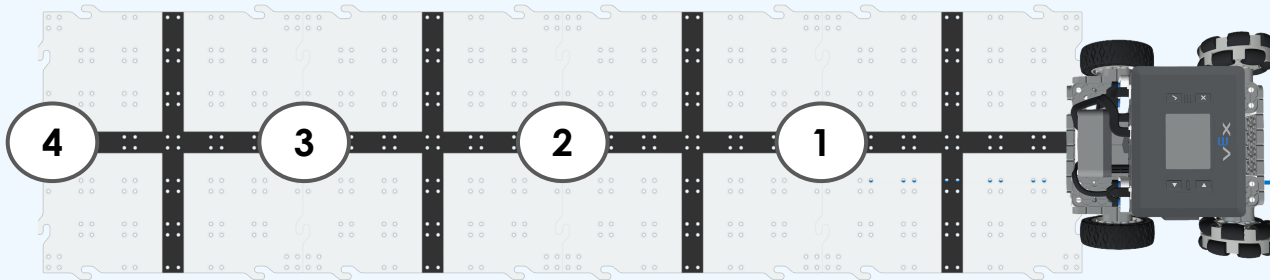
- Choose 2+ different objects (drawings, colored paper, classroom items).
- Place the robot at the edge of the field.
- Test each object in multiple positions (start closest).

Test:

- Does the sensor detect the object?
- If so, what does it detect it as?

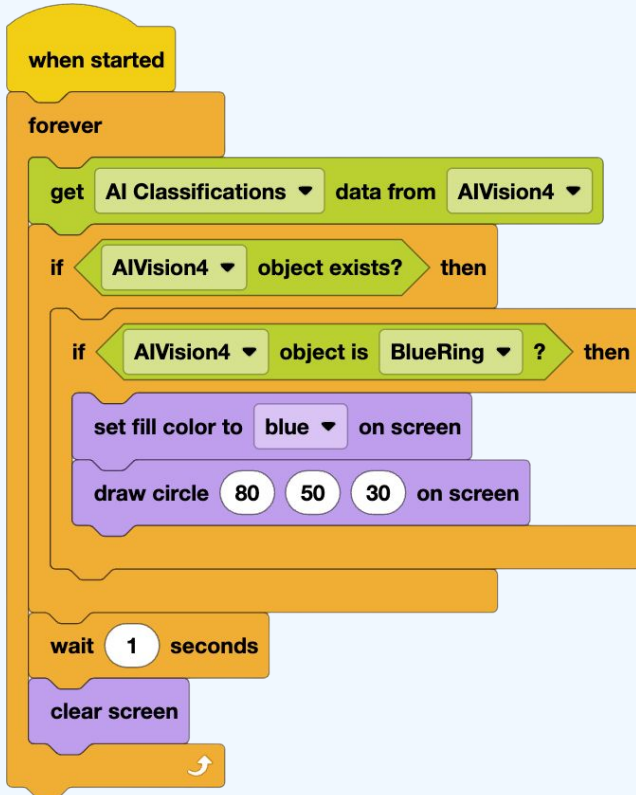
Discuss:

- What patterns do you notice?
- How does position affect detection?
- How could you prevent incorrect detections?



Detect and React

Code the robot to react to different objects in front of the AI Vision Sensor



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- Tag me in the **VEX PD+ Community!** @Lauren_Oberst
- Email: Lauren@vex.com

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