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Author: tariq.ahmad
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Constrained Object Detection with Edge Impulse

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When

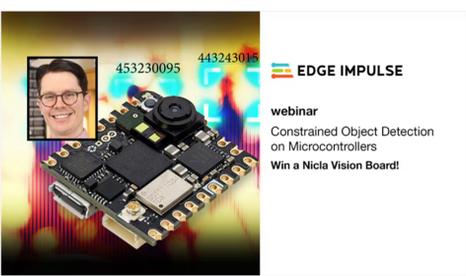
6 Sep 2022 11:00 AM to 12:00 PM Central Time (US & Canada)

Where

On24

Event Type

Webinar (On24)



Register and Attend for a Chance to Win a Nicla Vision Board for Asking the Best Questions!

Image classification has been a core focus of deep learning for many years. However, many computer vision applications require knowing where objects are in an image and the ability to count the number of objects, which goes far beyond simple image classification. This is where object detection comes in.

Object detection models are capable of finding objects of interest in an image and provide us details about those objects, such as their classification, location, size, relative distance from the camera, etc. A handful of object detection models, such as MobileNet V2 SSD and YOLOv5, are optimized for low-power systems, including smartphones and single board computers. However, most microcontrollers are still incapable of running such models due to their processing and memory limitations.

Edge Impulse has developed a new technique named "Faster Objects, More Objects" (FOMO) that performs constrained object detection on low-power devices, such as microcontrollers. FOMO provides the location of target objects in an image, but it does not give arbitrary bounding box information about the size or distance of objects. As a result, it requires up to 30x less processing power and memory than MobileNet V2 SSD or YOLOv5. In this talk, we will describe object detection, how FOMO works, and provide a live demonstration of constrained object detection on a microcontroller.

What you will learn by attending:

- Overview of popular image processing techniques using machine learning
 - Image classification
 - Object detection
 - Image segmentation
- Constrained object detection (FOMO)
 - Architecture
 - Use cases
 - Limitations
- FOMO demo with OpenMV



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Attend and Learn to Earn a Certificate:

Following this presentation there will be a short quiz to test your knowledge. Complete the quiz and watch the presentation either live or On Demand to earn a certificate. If you attend and demonstrate what you have learned, your certificate will be emailed to you.

To Earn a Certificate:

- View at least 30 minutes of the presentation
- Score a 100% on the quiz

The Presenter:

Shawn Hymel, Senior DevRel Engineer at Edge Impulse

Shawn is a machine learning DevRel engineer, instructor, and university program manager at Edge Impulse. He creates compelling technical videos, courses, and blog posts around edge machine learning and embedded systems that inspire and teach engineers of all skill levels. Shawn is an advocate for enriching education through STEM and believes that the best marketing comes from teaching. He can be found giving talks, running workshops, and swing dancing in his free time.

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