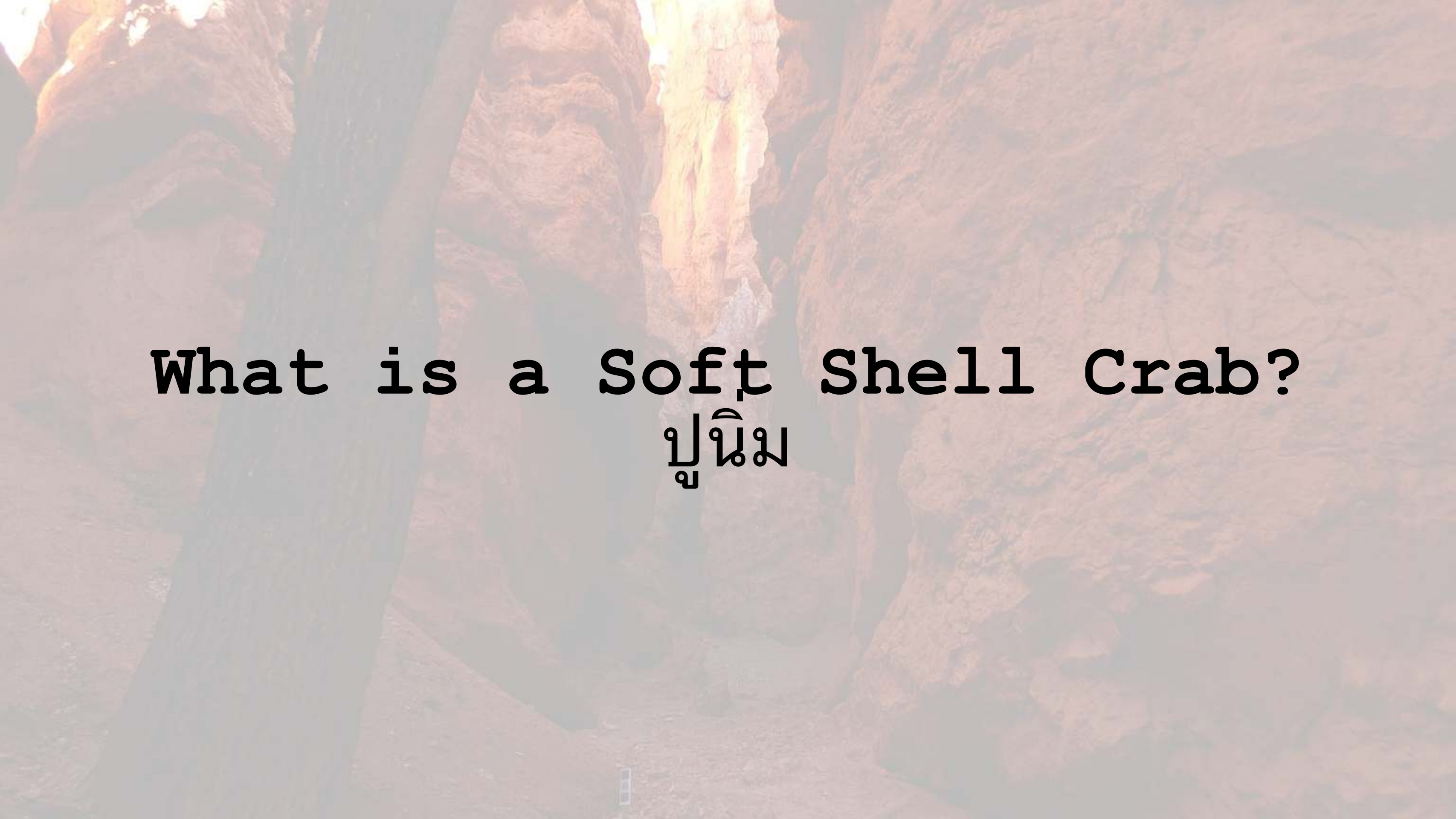


A nighttime photograph of a city skyline reflected in water. A large suspension bridge is in the foreground, its structure and lights visible. In the background, several skyscrapers are illuminated, with their lights reflecting on the water. The sky is dark blue.

How I got crabs with Python

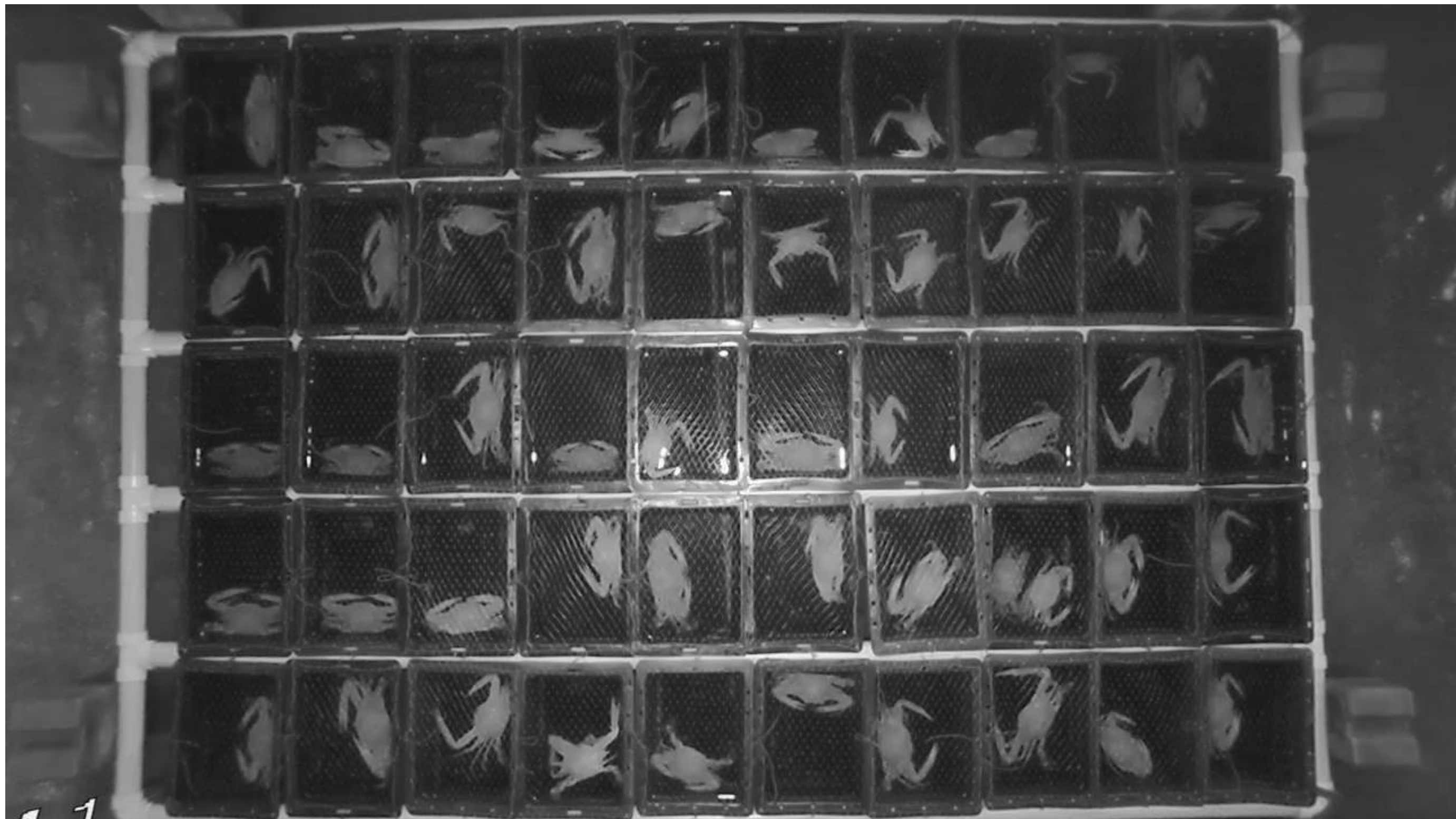


What is a Soft Shell Crab?

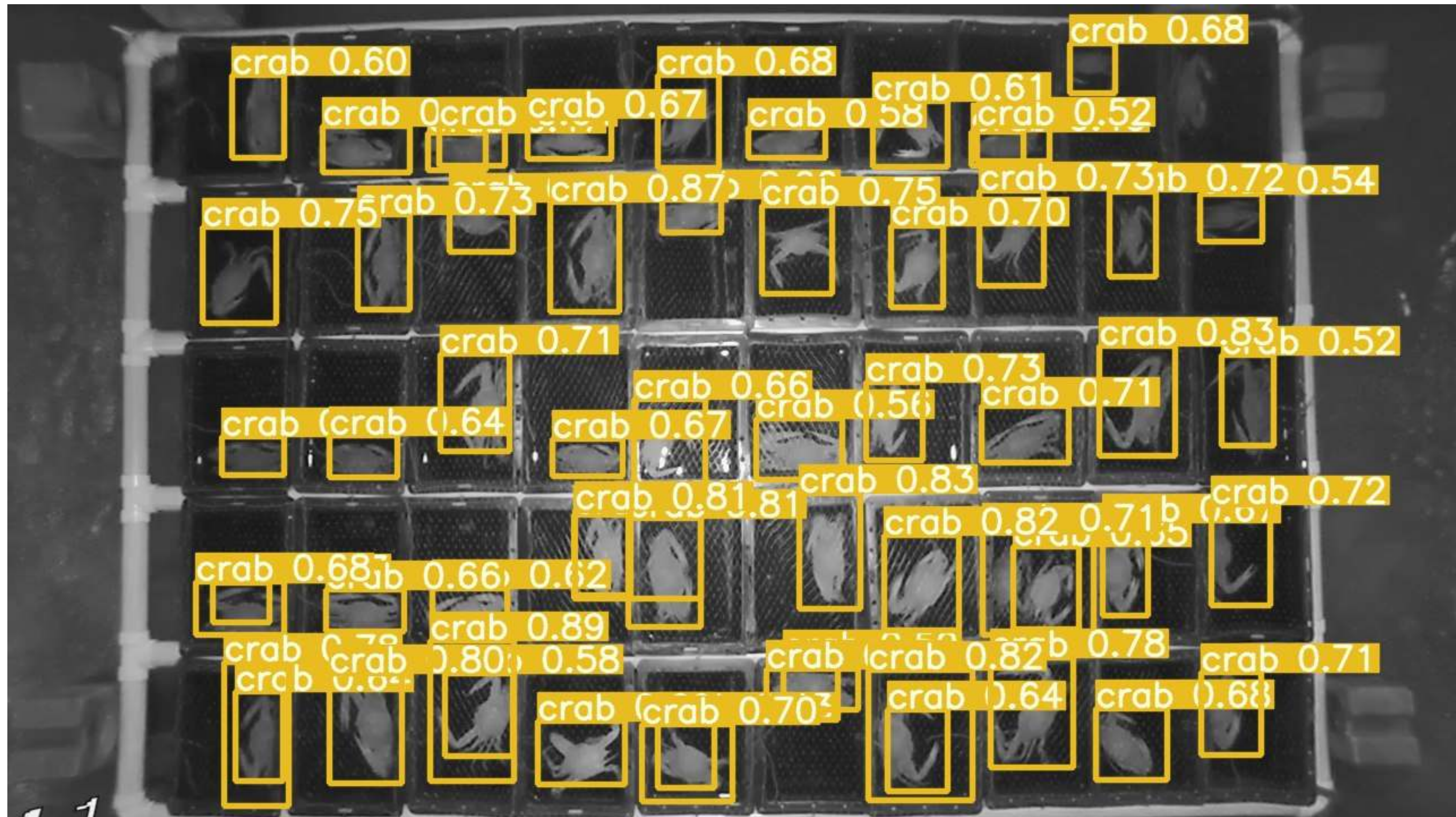
ปูนิ่ม







Machine Learning and computer vision



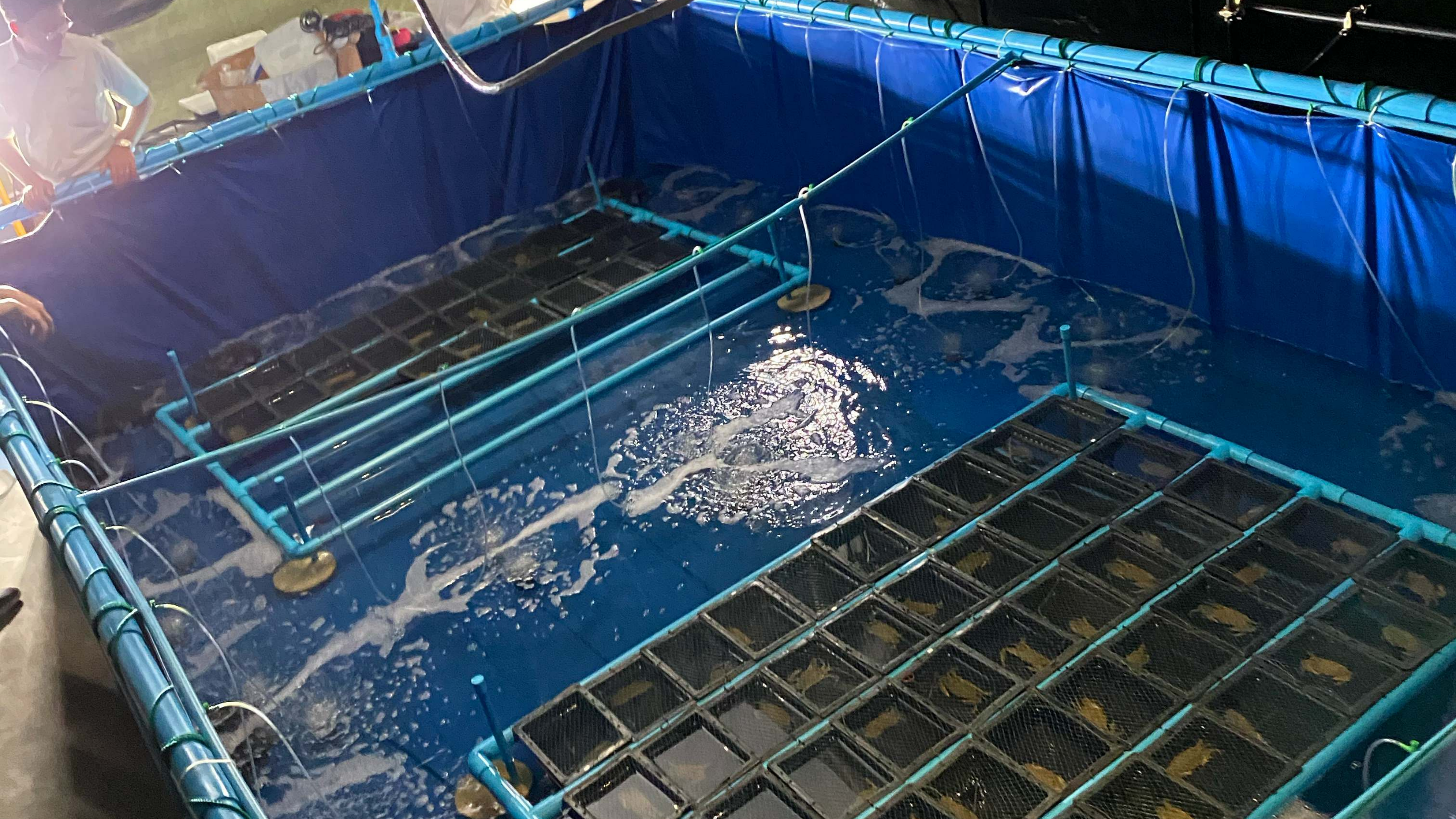
30 seconds about me

- Founder Loom Network
- DigitalOcean
- Go Developer 5 years
- Spoken all over the world
- Rode an elephant at my wedding
- ชอบพูดไทยเวลาเมา

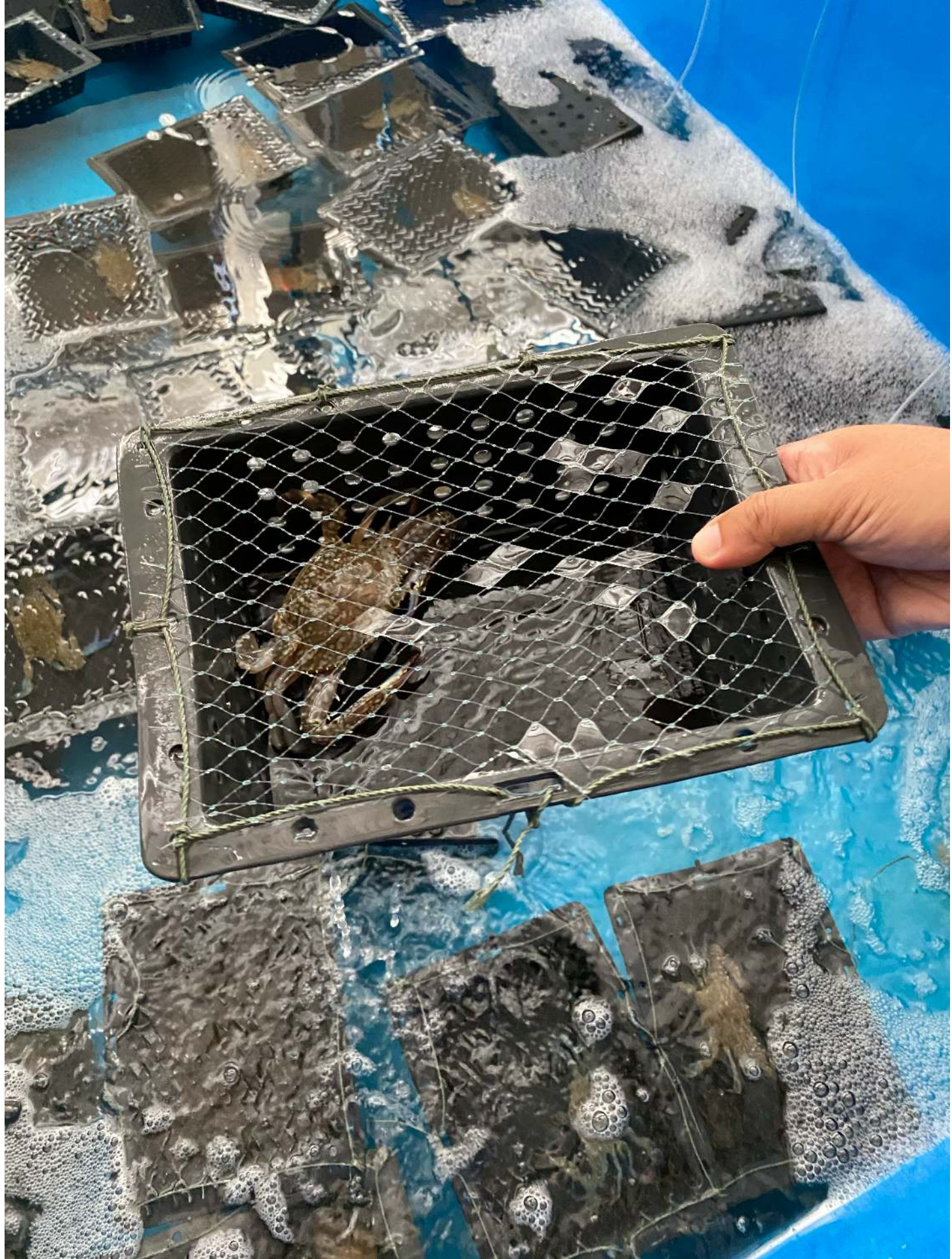




The Lab













ทำความรู้จักกับ

Internet of Things (IoT) คืออะไร?



≈ ทำไมใครๆ ก็พูดถึง



Air Conditioner

Updating firmware...

The product may be turned off during the update.

Do not unplug the power cord.



JETSON NANO™ 2GB DEVELOPER KIT



Jetson Nano

- 4 cpu @ 1.6ghz
- GPU with CUDA
- AI Accelerated
- 2 or 4GB Ram

Nvidia Docker

- Reuse same models from desktop machines
- Deploy full python distribution and pip modules
- Avoid management of all the python modules on the machine



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Gstreamer

- Accelerated video framework, GPU supported
- Allows you to build pipelines around video
- I.E Every 10 seconds push an image to your AI pipeline
- I.E Every 5 seconds upload a backup image to google cloud

Example GStreamer Pipeline

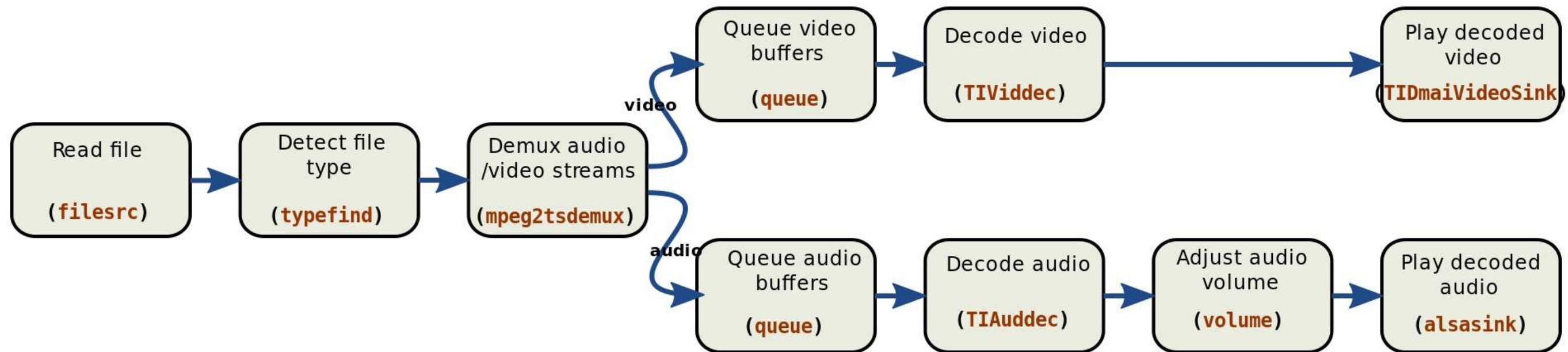
The goals of GStreamer are to separate the application (e.g. Video player, Video editor, etc.) from the streaming media complexity (e.g. hardware acceleration, remoteness)

GStreamer – streaming media

D-Bus – inter process communication

Use **gst-launch** command to create the GStreamer pipeline

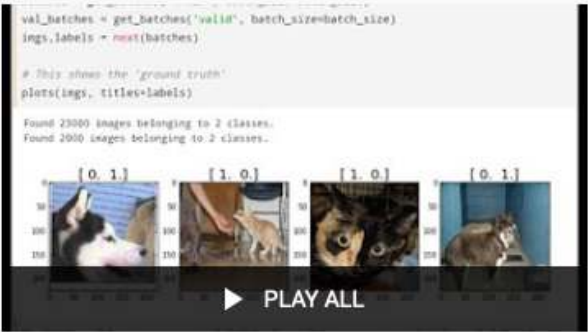
```
gst-rtsp-server - v4l2src ! video/x-raw,width=1280,height=720 ! omxh264enc ! video/x-h264,profile=baseline ! h264parse config-interval=1 ! rtph264pay nat
```



```
gst-launch filesrc location="video.ts" ! typefind ! mpeg2tsdemux name=demux \
    demux. ! 'video/x-h264' ! queue ! TIViddec ! TIDmaVideoSink \
    demux. ! 'audio/mpeg' ! queue ! TIAuddec ! volume volume=5 ! alsasink
```

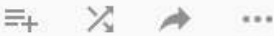
What is deep learning?

Fast.AI + PyTorch



fast.ai

11 videos • 14,767 views • Last updated on Jan 24, 2017



 tomashm78

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1:38:46

Lesson 1: Practical Deep Learning for Coders

Jeremy Howard
- 2



1:54:17

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- 3



2:03:18

Lesson 3: Practical Deep Learning for Coders

Jeremy Howard
- 4



2:03:47

Lesson 4: Practical Deep Learning for Coders

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31:11

Lesson 1 Overview

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Lesson 7: Practical Deep Learning for Coders

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Lesson 6: Practical Deep Learning for Coders

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2:03:47

Lesson 4: Practical Deep Learning for Coders

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2:03:04

Lesson 5: Practical Deep Learning for Coders

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46:49

Deep learning certificate "lesson 0"

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13:12

AWS Deep Learning setup

Jeremy Howard

fast.ai

Making neural nets
uncool again

Home

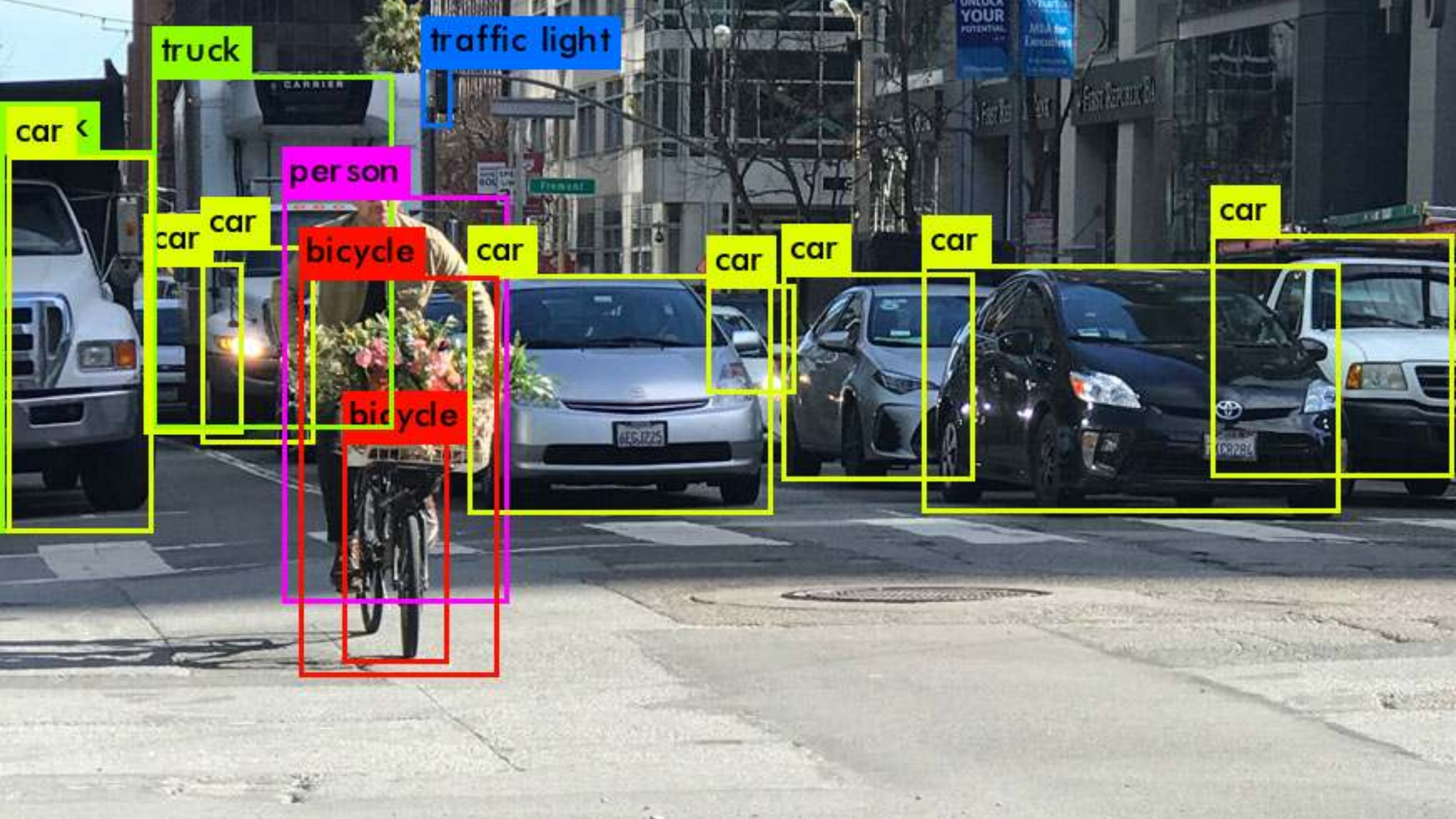
About

Our MOOC

Posts by Topic

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Yolo



truck

traffic light

car <

person

car

car

bicycle

car

car

car

car

car

bicycle

Labeling data is a nightmare



Appearance



Rotate Right



Resize To Fit



Undo



Redo



Delete Label



Clear All



Auto Add from Previous



Instructions



Help Topic

Labels

Crab

Polygon



0

Moulting Crab

Polygon



0

Place

Polygon



0

Image Issue

Select



OK

Cancel

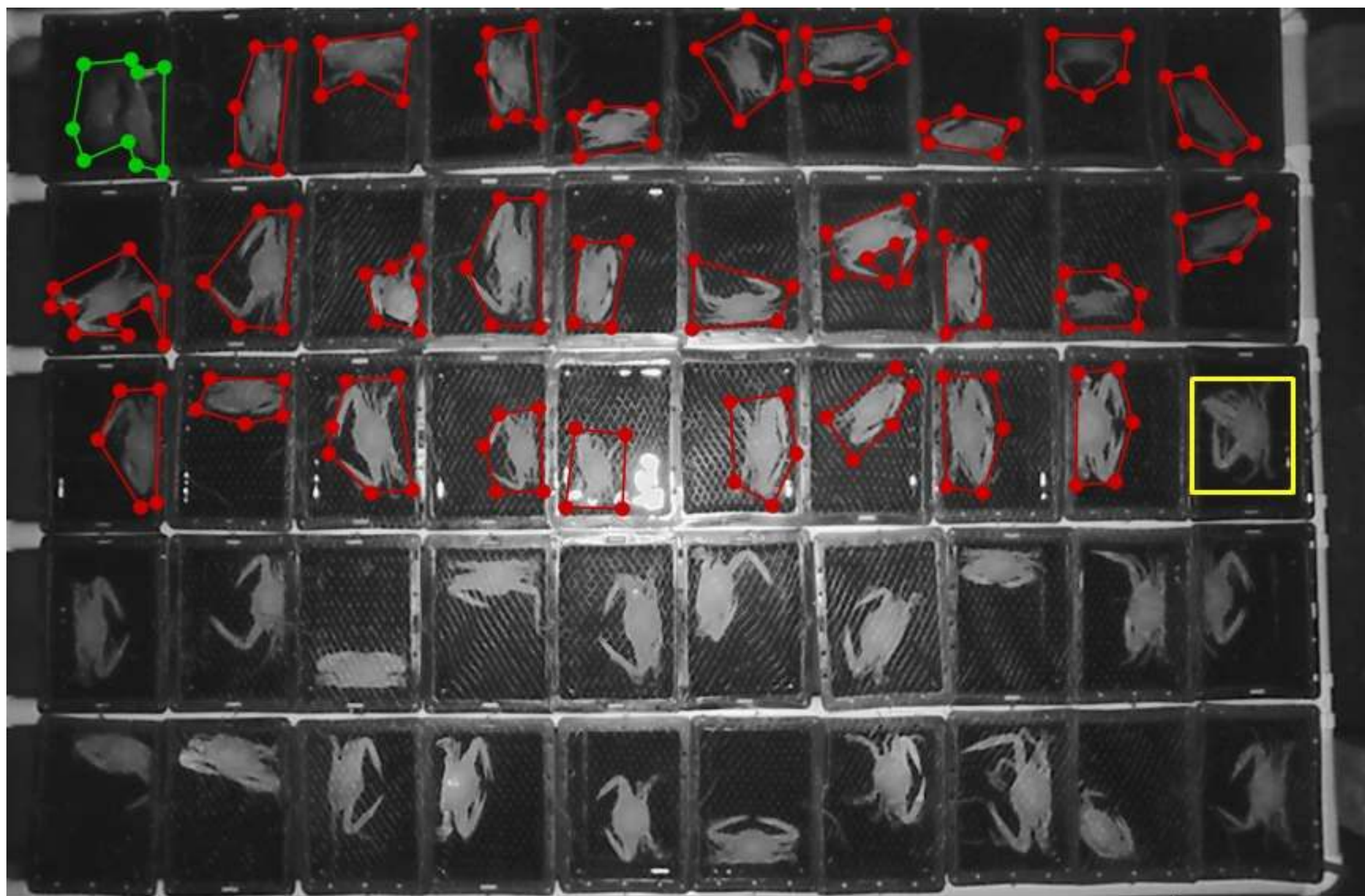
12-42-14.png

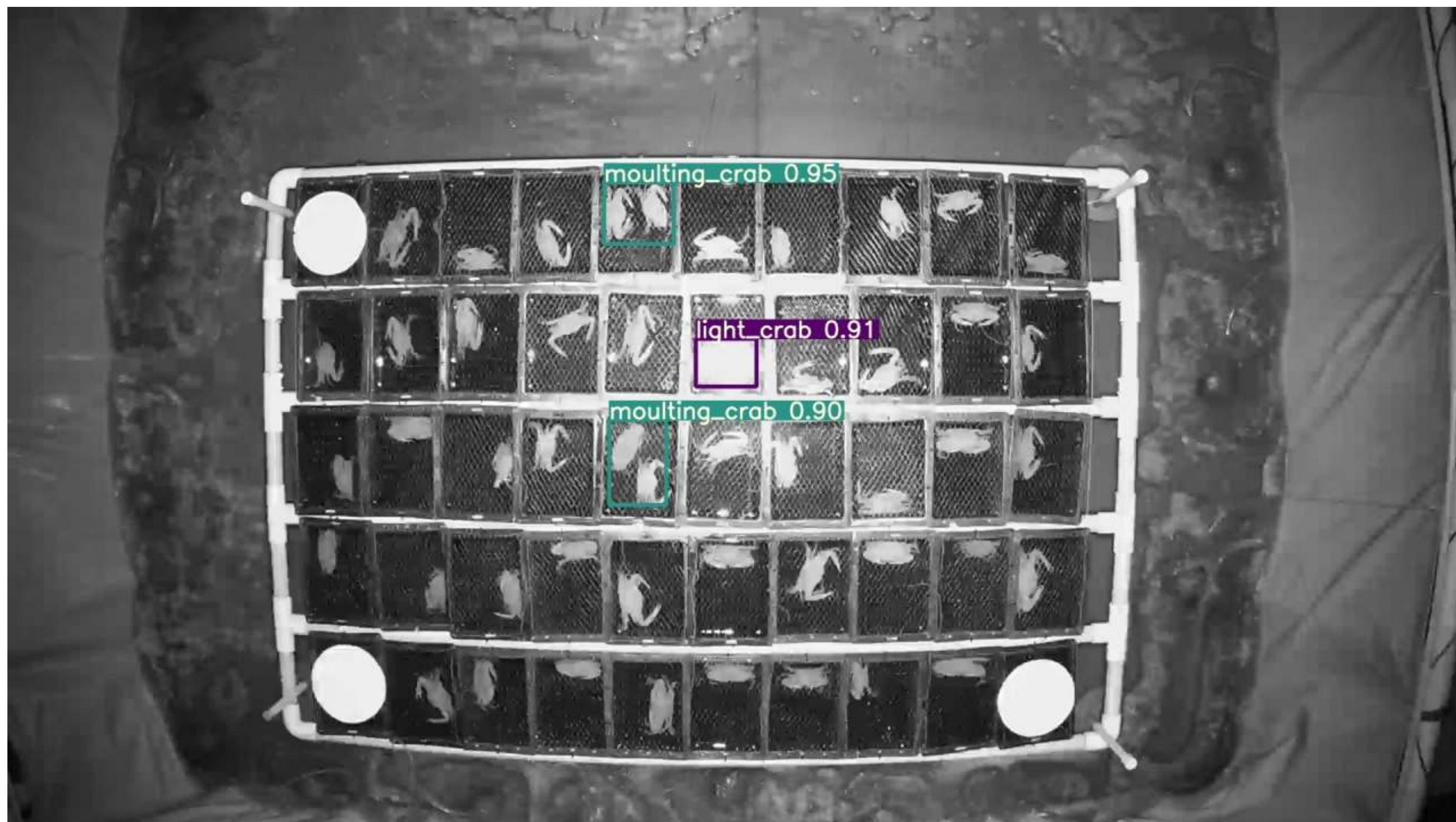
1280x720

★ Unsubmitted

Skip

Submit





Why do AI on the Edge?

- 3g connection to the farm, have up to 8-12 video cameras, a lot of bandwidth needed
- Can work with no internet connectivity
- Allows privacy of data, if customer doesn't want to share their datasets

Take Aways

- Tons of opportunities in Thailand to automate infrastructure
- Machine Learning is mature and easy
- Python is suitable for IOT
- IOT is cheap and high performance

Questions?



- OctoVision
- Yes we're hiring!!