Vuforia in FTC

Oct. 18, 2019

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Thank you to the University of Victoria for hosting the FTC Workshop series!

What is Vuforia?

- Vuforia is a computer vision library for
  - Identifying objects
  - Tracking objects
  - Providing relative information on the object

Why Vuforia?

- Vuforia is built into the FTC app!
- This means no extra compilation
- The FTC vision targets are designed with Vuforia in mind

Image 1
Front Wall (audience)
Red Side

Image 2
Front Wall (Audi
Blue Side

Image 3
Red Alliance Wall
Front Zone

Image 4
Blue Alliance Wa
Front Zone

Image 5
Red Alliance Wall
Back Zone

Image 6
Blue Alliance Wa
Back Zone

Image 7
Back Wall
Red Side

Image 8
Back Wall
Blue Side

How can I implement Vuforia?

- Vuforia is supported in both Java programming
  - OnBot Java
  - Android Studio
- And Blocks

  *I have not personally used Vuforia in Blocks so I may not be as helpful for questions There is a good overview here https://github.com/FIRST-Tech-Challenge/SKYSTONE/wiki/Identifying-Vuforia-VuMarks

Vuforia Licensing

In order to use Vuforia you will need to obtain a license from Vuforia.

Go to https://developer.vuforia.com/license-manager and create an account

Then click Get Development Key

Vuforia Licensing

Then click on your new license.

Name	Primary UUID ⓘ	Type	Status ⌄	Date Modified
FTC Alumni	N/A	Develop	Active	Oct 16, 2019

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Vuforia Licensing

And copy the license into your app

License Manager > FTC ALumni

FTC Alumni   Edit Name   Delete License Key

License Key	Usage

Please copy the license key below into your app

AR91uCL/////AAABmWEqxuR2hEIem1LC30N8ymeIAv2PF4aWFLLQoSV4NE3m7qUmSYcBh3pj8U/vfCwyxL/f59q6IhEJuFkNslAnRRyQDS
F22cxYu2Um6n25qBIovifMa5av1hDK1D/zxS9vuxI3mE/vnpR5vHmfOS1xTqMilTv/t8021IWwV43w1Xi3VkiqrxKEwzq9qT1dbi4iNacX

Programming a Robot

- Today we will program a robot to follow the skystone
- Using OnBot Java

Resources

This document outlines the order that the Vuforia objects are in

https://github.com/FIRST-Tech-Challenge/SkyStone/blob/master/FtcRobotController/src/main/assets/Skystone.xml

Next Week - Lift Systems

Oct 25 at 4:30 - 6:00pm

Not sure if you want to use a linear slide, drawer slide, scissor lift or rack and pinion. This workshop will go over some of the options your team can use to lift the skystones and build a skyscraper!

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