



# Computer Vision: **Got Any Grapes?**

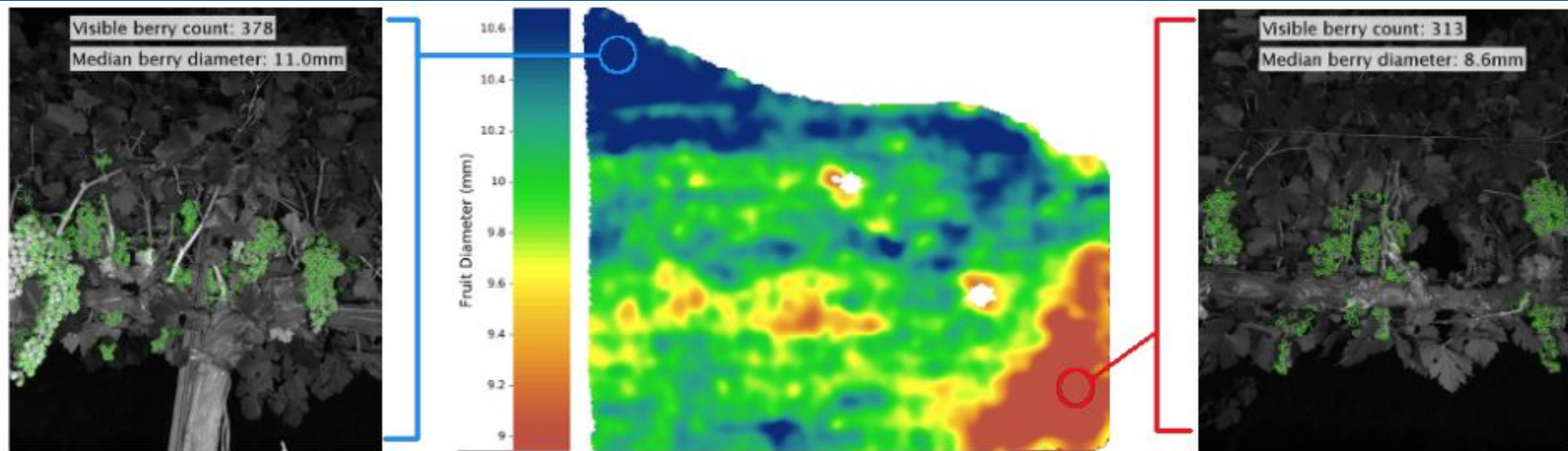
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By Team RoboCrop Jr.

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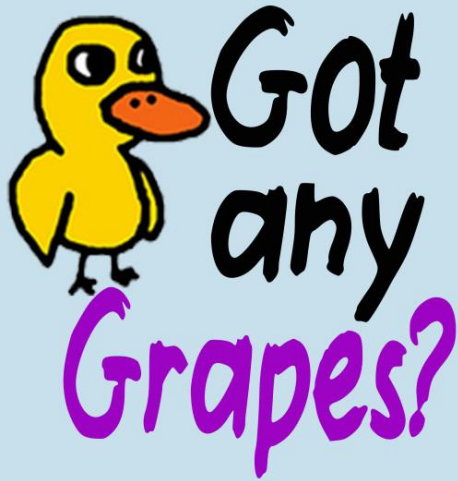
# Motivation



# The Process



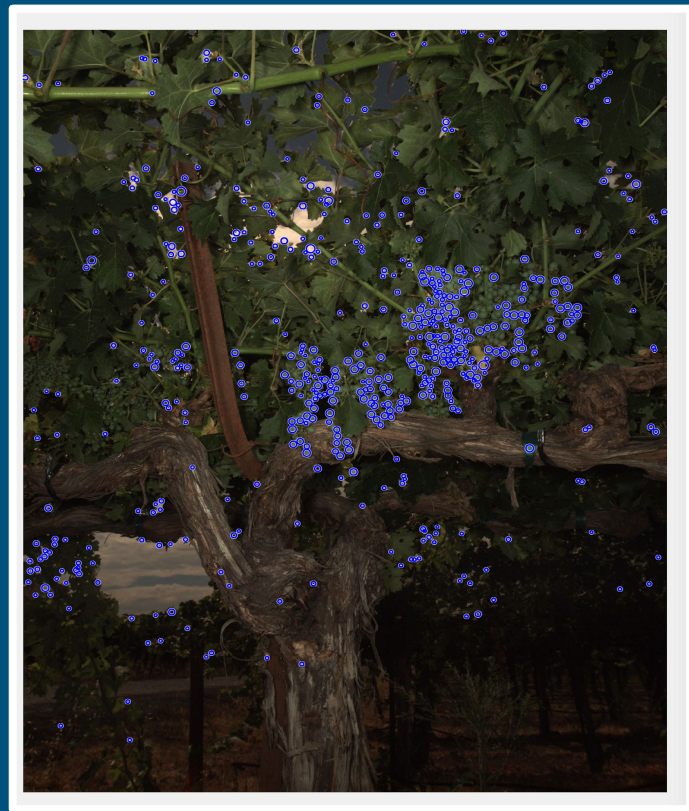
# Our task: Counting grapes



# Our starting point



**imfindcircles**



# The First Step: Image filtering



**Brightness  
Doubled**

**Contrast  
Doubled**

**imfindcircles**



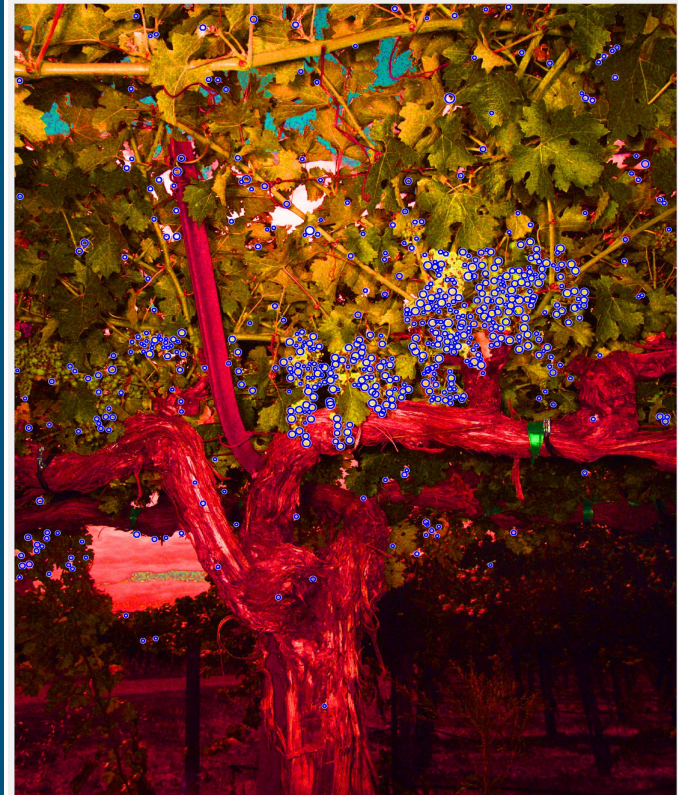
# The Best Filter: Saturated Bright



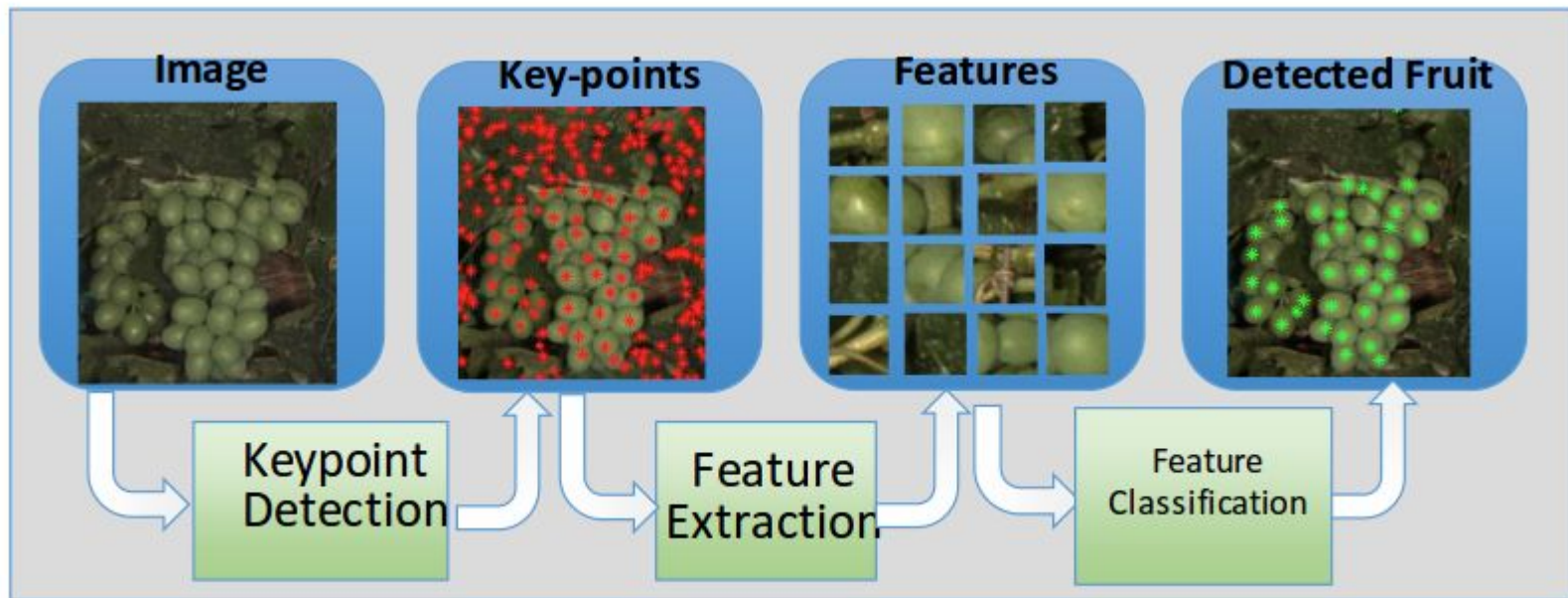
**Hue  
Modification**

**Saturation  
Doubled**

**imfindcircles**



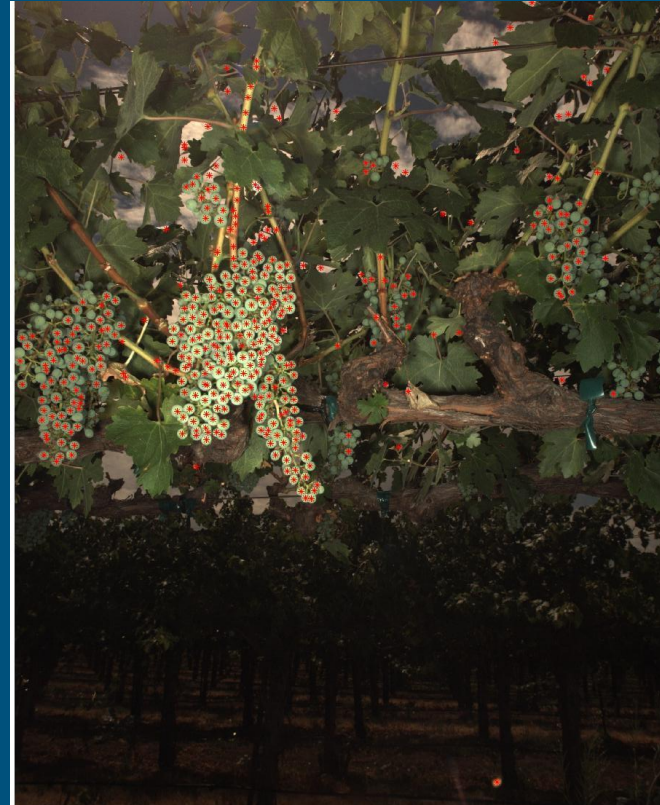
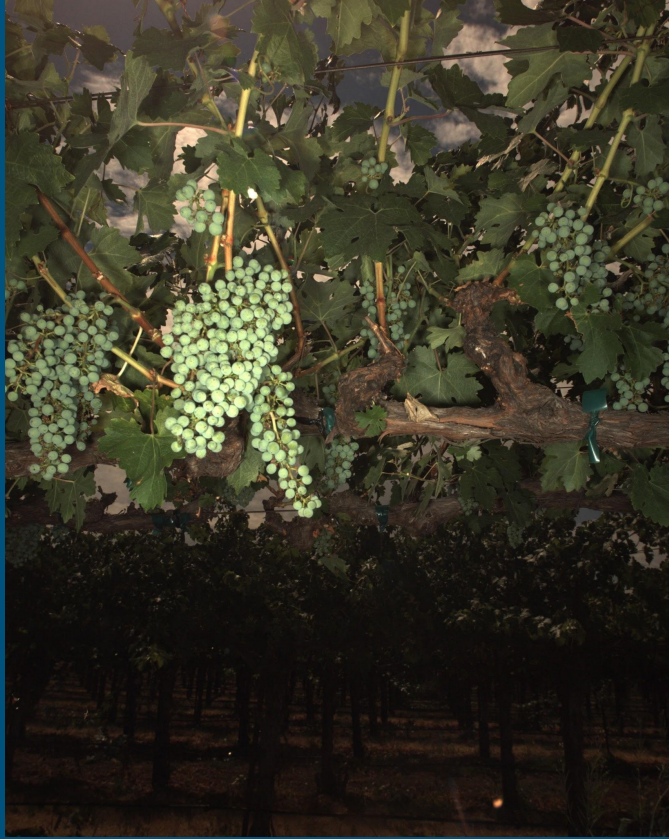
# The Second Step: Classifying Grapes



*Nuske et al. (2014)*



# SVM classifier using raw images for training



# SVM with filtered image for training



# Future Steps

- Train the SVM on multiple filters with different weights
- Overlaying grapes
- Calculating depth
- Image stitching

# Future Applications

- Other crops
- Plant identification
- Astronomy crater identification

# Thank you!

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organizers