Fruit Health Identification using Image Processing COMP3800

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Motivation

The U.S. fruits and vegetables industry is estimated to be worth over $5 billion. Companies rely on visually appealing products to sell to consumers. Additionally, abnormal defects in fruits can be an indicator of more severe agricultural problems.

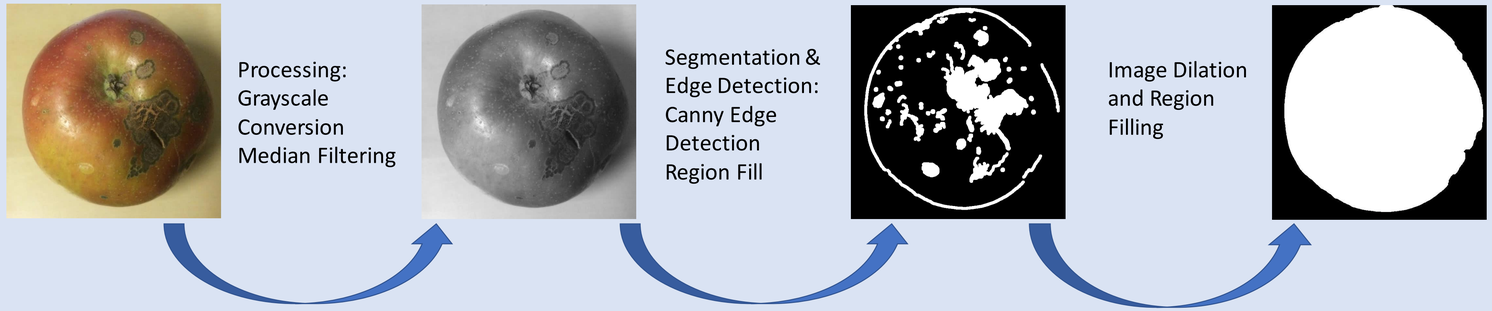
Future Work

- Improve fruit and anomaly identification accuracy
- Expand to input to various fruit types
- Train to ignore natural fruit color variations

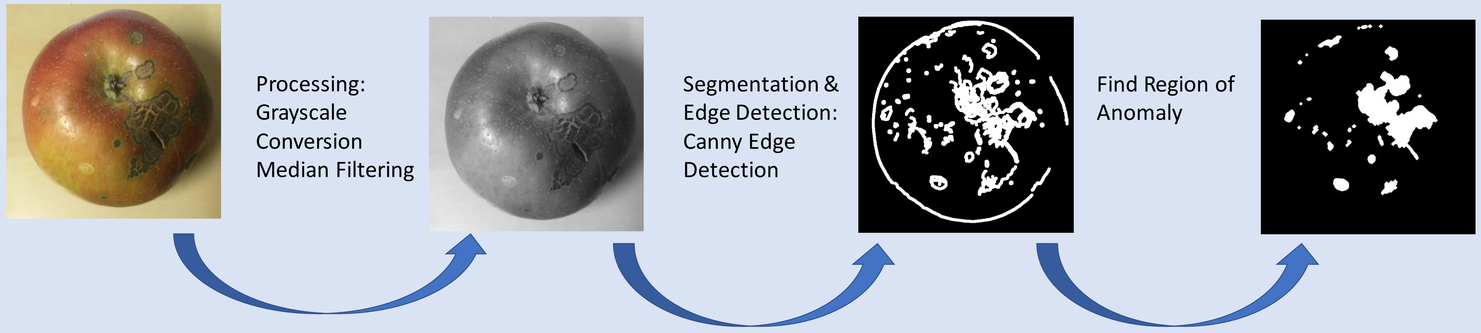
Related Works

- Istanbul Technical University:
  - Built specialized container to take pictures
  - Focused on apples
- Ambalika Institute of Management and Technology:
  - Used machine learning

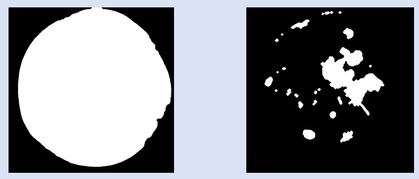
Detect Whole Fruit



Detect Anomaly



Analysis



By comparing the area of the whole fruit to the combined area of detected anomalies, a decision can be made as to whether the fruit should be discarded.

If more than 20% of the fruit holds anomalies, it is concluded that the fruit is not fit for consumption and is to be discarded.