

Computer vision project

Measurement system

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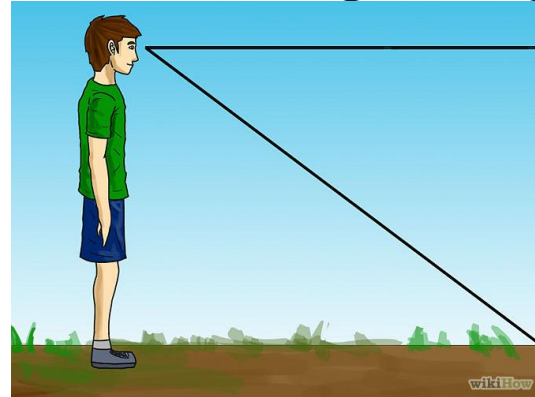


Agenda

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- Description
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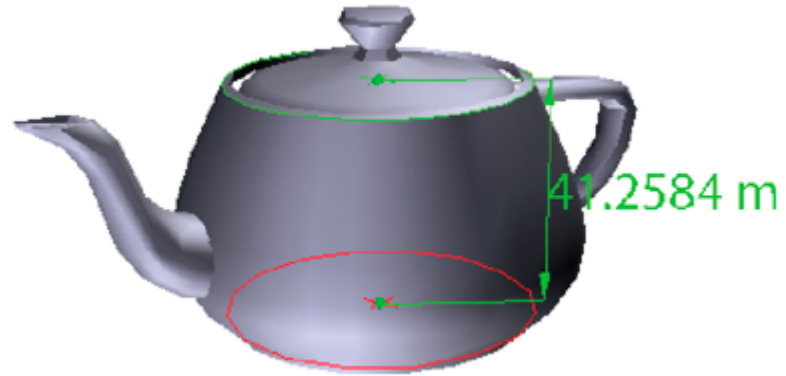
Introduction

Measurements provide structure and remove the chaos that would result without any congruent method of understanding weight, mass, temperature, etc.



Objective

An application capable of detecting the size of objects.



Motivation

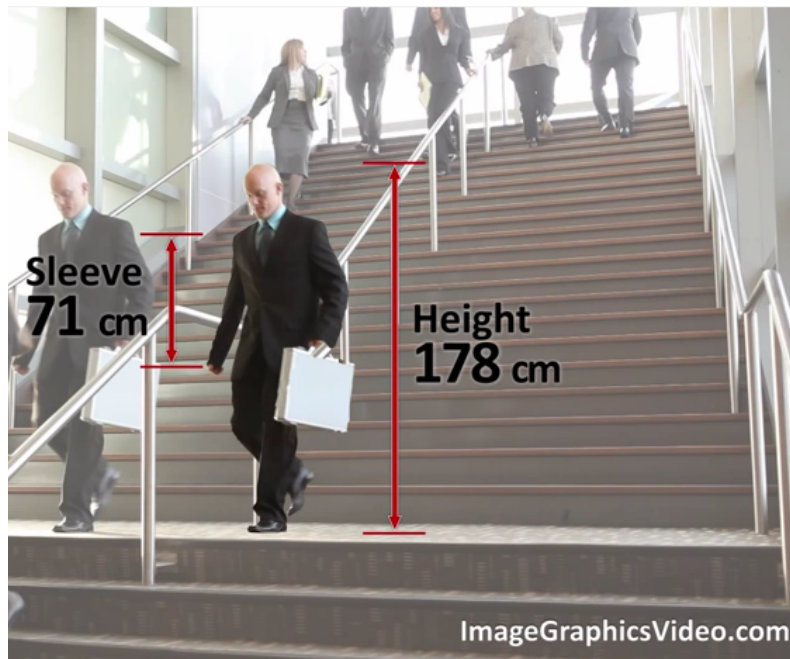
- Industry needs automated inspection because in the manufacturing processes there are uncertainties, tolerances, defects, relative position and orientation error, which can be solved by vision sensing.
- Computer Vision offers consistency, accuracy and repeatability in non-contact measurements. It contrasts to the subjectivity, fatigue, slowness and cost associated with human inspection.

Description

A Computer Vision measurement system using digital images is as follows:

- 1) Image acquisition
- 2) Image pre-processing;
- 3) Shape detection
- 4) Recognition of the interested objects
- 5) Measurement

Taking one object size as reference



Mars-Bound NASA Rover Carries Coin for Camera Checkup



Tools

Language



Main libraries:

Tkinter

PIL

Numpy



Schedule

Activity/week	1	2	3	4	5	6	7
Research							
Define project structure							
Enhance detection of a known object							
Detection of geometric shapes							
Calibrate measurement							
Implement measurement detection							
Testing							
Rework							

References

Fabiana R. Leta et al. (2006). DISCUSSING ACCURACY IN AN AUTOMATIC MEASUREMENT SYSTEM USING COMPUTER VISION TECHNIQUES. Brazil: ABCM

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Q&A

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