

# A Crash Course on SimpleCV

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# Overview

Quick Start!

What is SimpleCV?

What makes up SimpleCV?

SimpleCV

Getting Started

Second Section

# Get Started!

There are a lot of dependencies for SimpleCV and it is a bit tough for beginners. We've brought disks that are ready to go!

- ▶ Windows / Linux
  - ▶ Boot from USB drive.
  - ▶ Alternatively install VirtualBox and the image.
  - ▶ <https://www.virtualbox.org/>
- ▶ Macs
  - ▶ Newer macs are persnikety about booting from a USB drive.
  - ▶ Install virtual box and the ISO and go to town.
- ▶ When you get home install from SuperPack or preferably source libs.
  - ▶ take awhile and is not a perfect science.
  - ▶ <https://github.com/ingenuitas/SimpleCV>
  - ▶ If you want to contribute this is a great place to start.

# About the tutorial

- ▶ It will be a lot of live coding. I'll lead, you follow along.
- ▶ If you have a question feel free to interrupt.
- ▶ If you are having an issue raise a flag. Anthony will help you.

# What Makes Up SimpleCV?



# SimpleCV != OpenCV



- ▶ OpenCV is really busy, we help by wrapping python.
- ▶ We add lots of other fun stuff (OCR, Barcodes, etc.)
- ▶ We are not competing, we are complementing.
- ▶ Purposes are different. Python is great for prototyping. C++ great for embedded.

# Core Dependencies

- ▶ OpenCV Python Bindings
- ▶ Numpy
- ▶ SciPy
- ▶ SciKits Learn and Orange
- ▶ PyGame (this is going away)
- ▶ Python Imaging Library (PIL)
- ▶ ipython
- ▶ PIL (Python Imaging Library)

# Optional Dependencies

- ▶ Barcodes- Zebra Crossing ZXIng
- ▶ Optical Character Recognition (OCR) - Tesseract
- ▶ Beautiful Soup
- ▶ Kinect Support - freenect
- ▶ Unit Tests - nose
- ▶ Web Stuff - flask / CherryPy
- ▶ Arduino - pyfirmata
- ▶ Many Many Many more.



# This is why we put everything in a superpack / virtual box / bootable drive

- ▶ Just get to the core library functions.
- ▶ We encourage you to install the full library when you get home.
- ▶ Help is available if you need it.

## Getting Help after the tutorial.



- ▶ Primary Source: <http://help.simplecv.org/questions/>
- ▶ Documentation <http://www.simplecv.org/docs/>
- ▶ Tweet at us: @Simple\_CV
- ▶ Another Good Resource:  
<http://www.reddit.com/r/ComputerVision>

## On the Printed Page

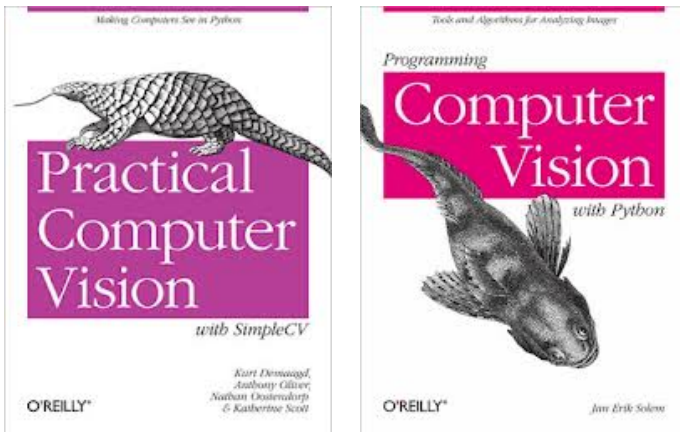


Figure: Two books about using Python for Computer Vision

## So why are we doing this?

- ▶ We are really nice people who believe in Python and Open Source.
- ▶ We are trying to disrupt industrial quality control systems.



## What makes up SimpleCV?

## Early Prototypes

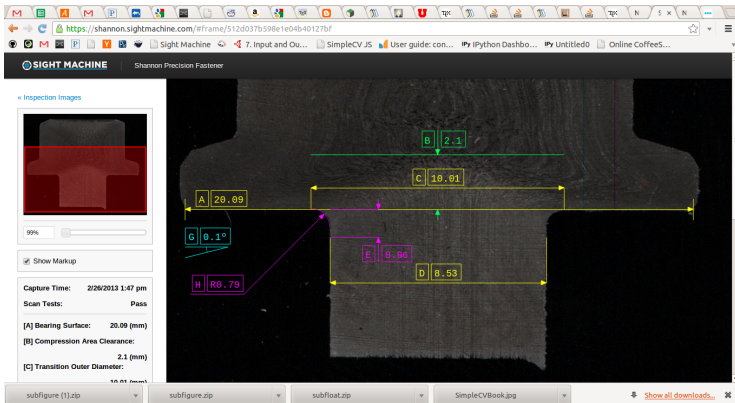


Figure: Early Customer - Industrial Fastener Morphology and Metallurgy

## What makes up SimpleCV?

## Early Prototypes

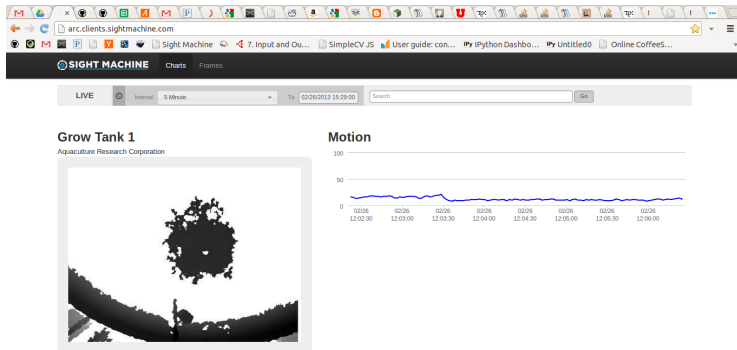
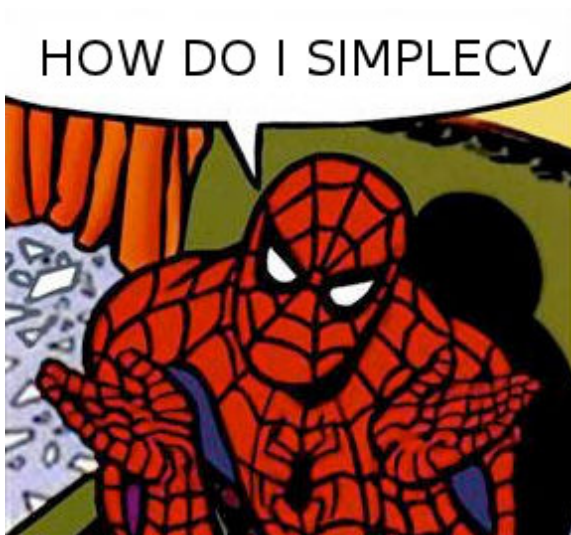


Figure: Early Customer - Aquaponics Research Facility

# How do I SimpleCV?



## Paragraphs of Text

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# Bullet Points

- ▶ Lorem ipsum dolor sit amet, consectetur adipiscing elit
- ▶ Aliquam blandit faucibus nisi, sit amet dapibus enim tempus eu
- ▶ Nulla commodo, erat quis gravida posuere, elit lacus lobortis est, quis porttitor odio mauris at libero
- ▶ Nam cursus est eget velit posuere pellentesque
- ▶ Vestibulum faucibus velit a augue condimentum quis convallis nulla gravida

# Multiple Columns

## Heading

1. Statement
2. Explanation
3. Example

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# Table

Treatments	Response 1	Response 2
Treatment 1	0.0003262	0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296

Table: Table caption

# Theorem

Theorem (Mass–energy equivalence)

$$E = mc^2$$

# Verbatim

## Example (Theorem Slide Code)

```
def doStuff(a,b,c=[1,2,3]):  
    a = 5  
    b = a  
    c.reverse()  
  
derp = [1,2,3,4]  
for i in derp:  
    doStuff()  
    pass  
print derp
```

# Verbatim

Example (Theorem Slide Code)

$$E = mc^2$$

# Figure

Uncomment the code on this slide to include your own image from the same directory as the template .TeX file.

# Citation

An example of the `\cite` command to cite within the presentation:

This statement requires citation [Smith, 2012].



# References



John Smith (2012)

Title of the publication

*Journal Name* 12(3), 45 – 678.

# The End