

# Course Introduction



# Hi!

- [Ilias](#) [TOUGUI](#), PhD
- Assistant Professor at UIR
- Computer science researcher and educator specializing in machine learning applications for healthcare.
- <https://www.liaou.xyz/>

# Course Introduction

- What is computer vision?
- Course fast-forward and logistics

What is  
computer vision?



Photo by Svetlana Lazebnik

**What a person sees**



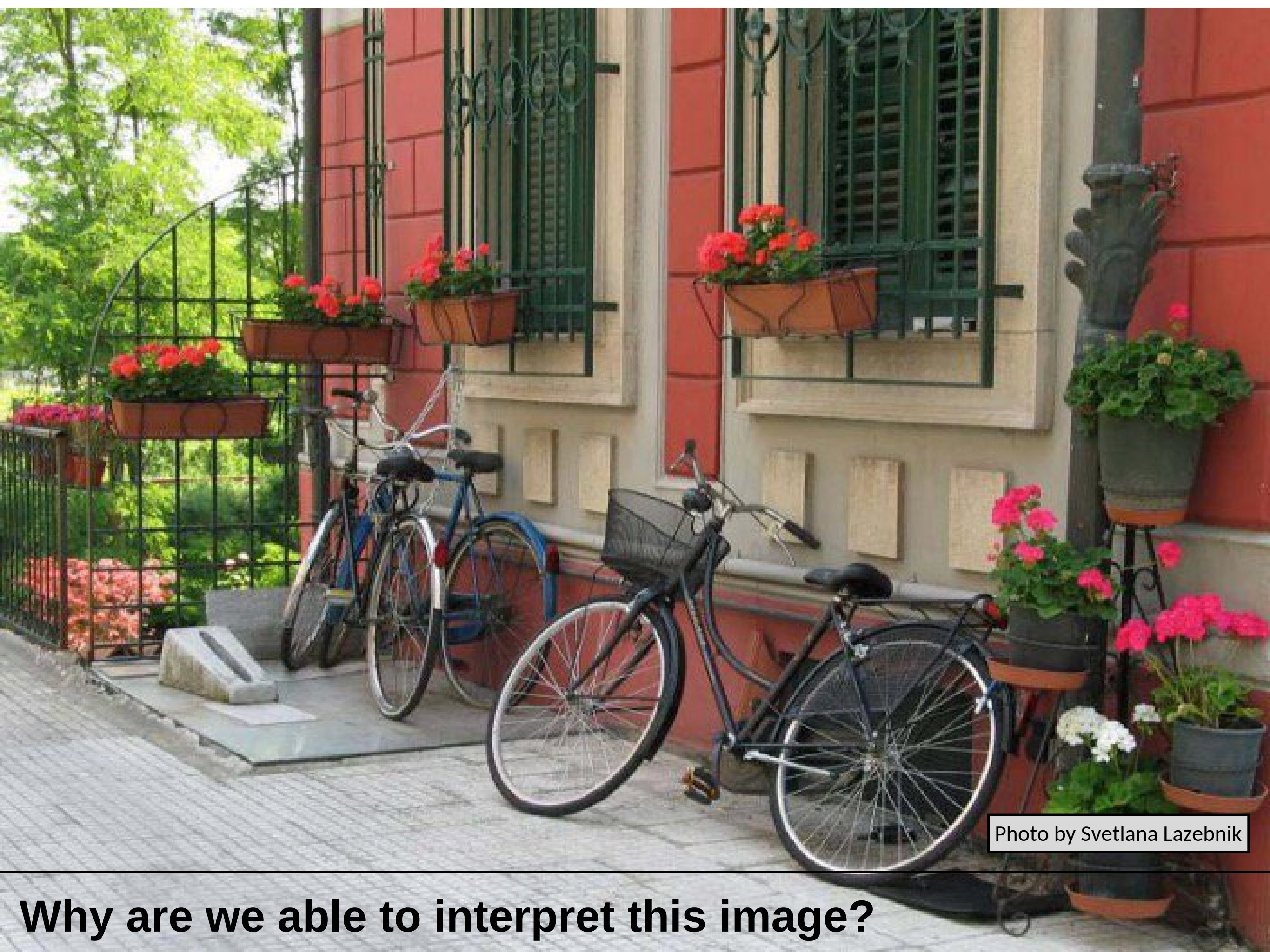


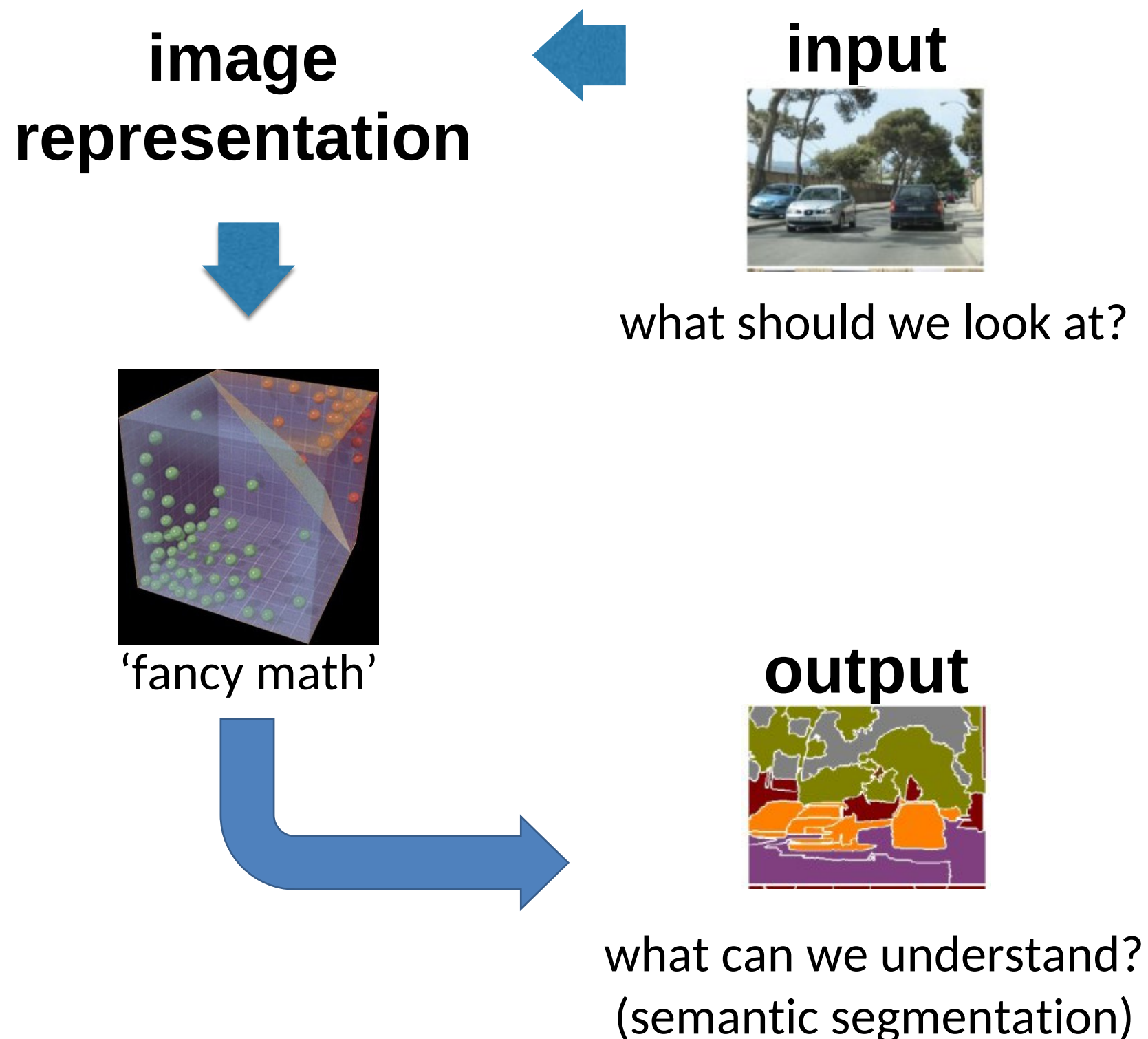
Photo by Svetlana Lazebnik

**Why are we able to interpret this image?**

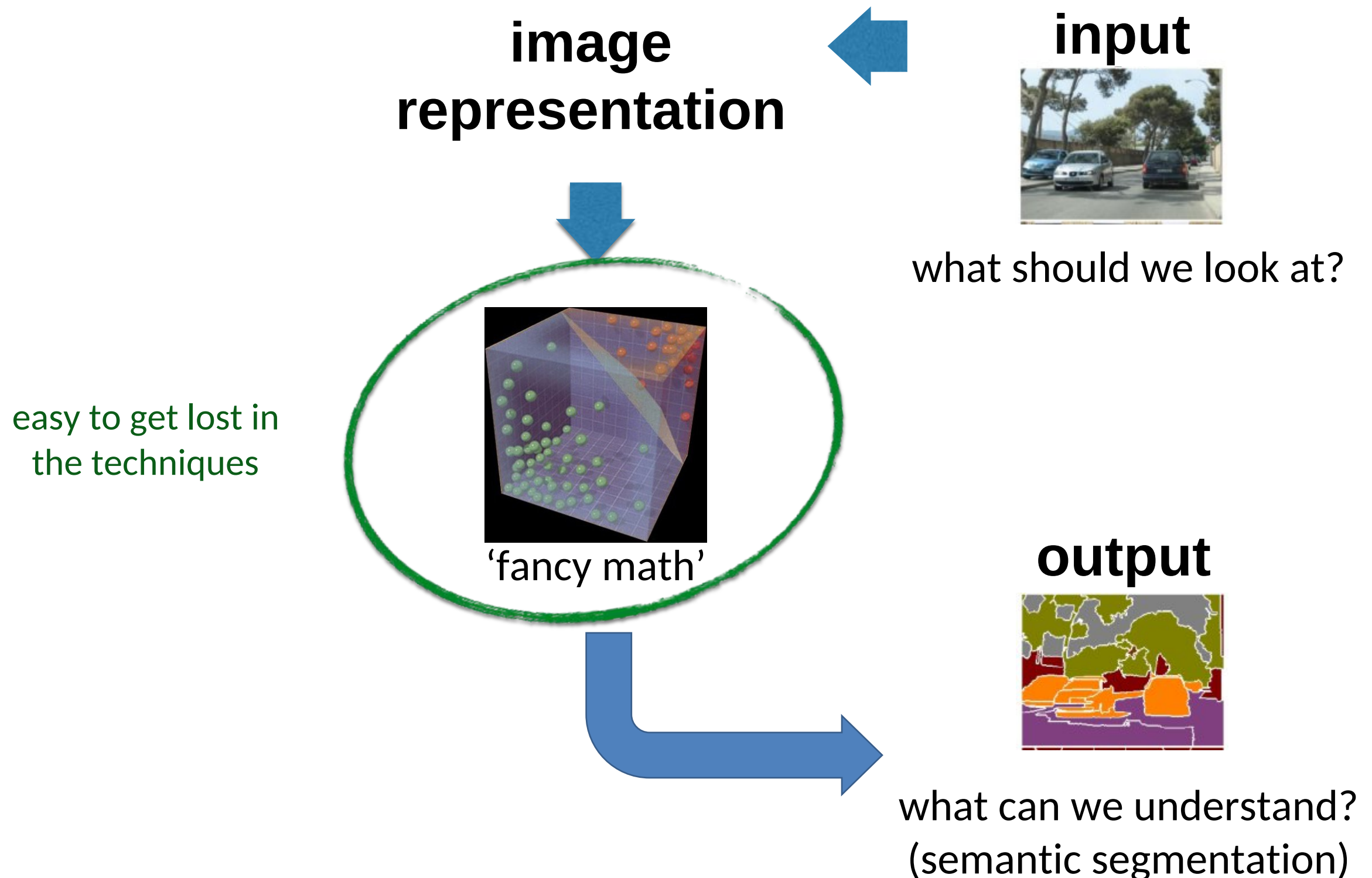
The goal of computer vision is  
to give computers  
**(super) human-level perception**



# Typical perception pipeline

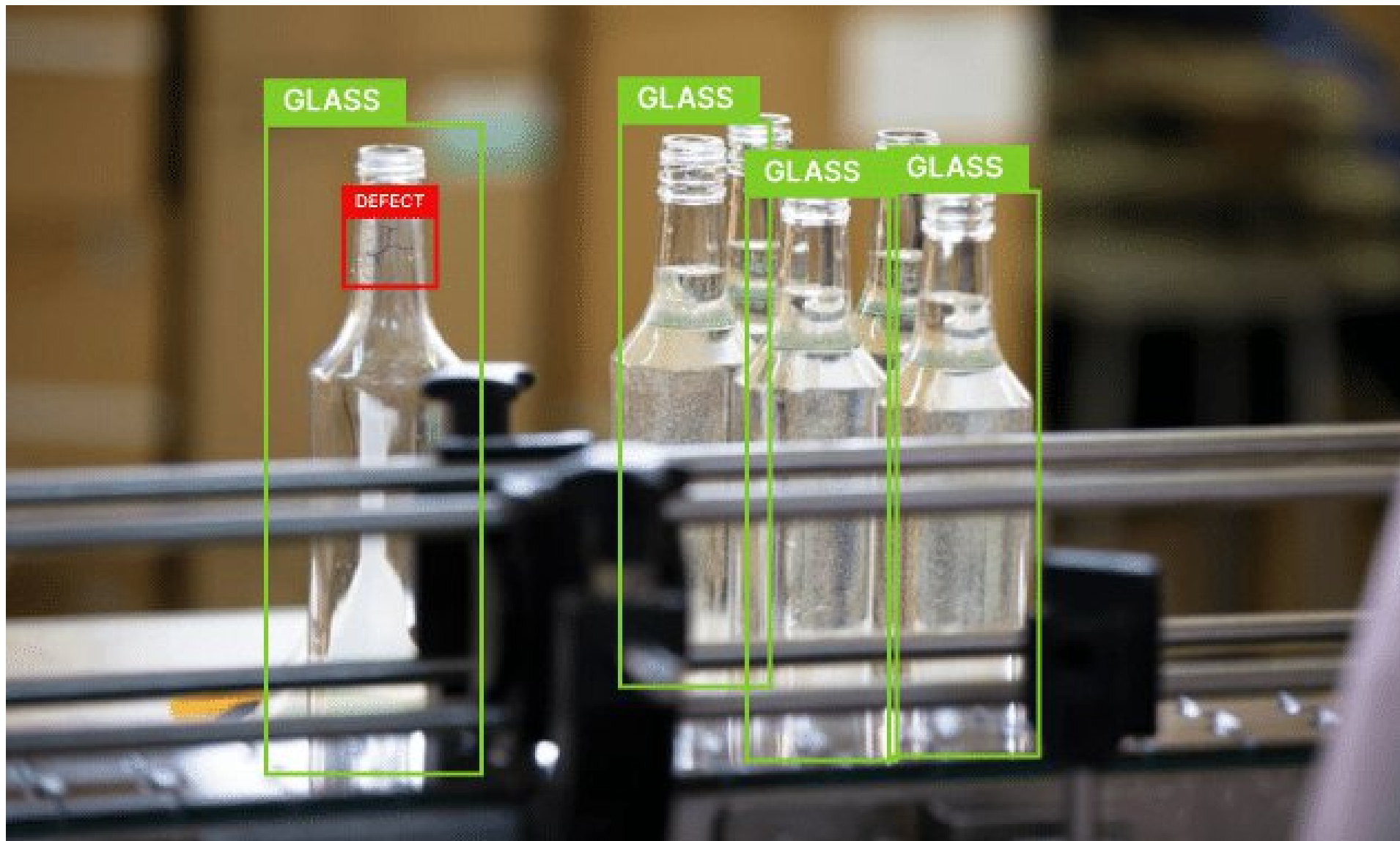


# Typical perception pipeline



# Applications of computer vision

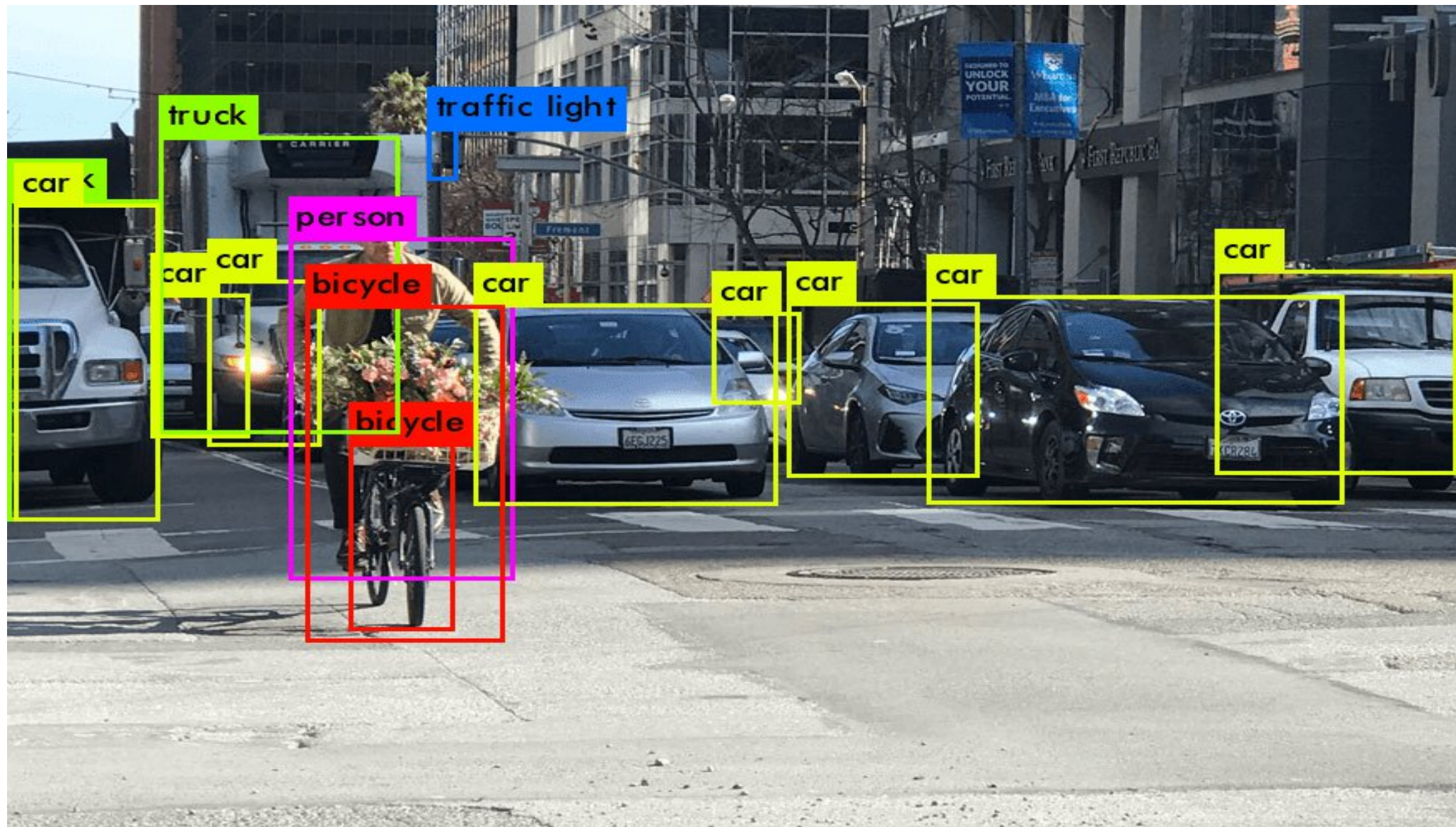
# Computer Vision in Industry



e.g. Automated visual inspection



# Computer Vision in Transportation



e.g. Object Recognition and Traffic Management

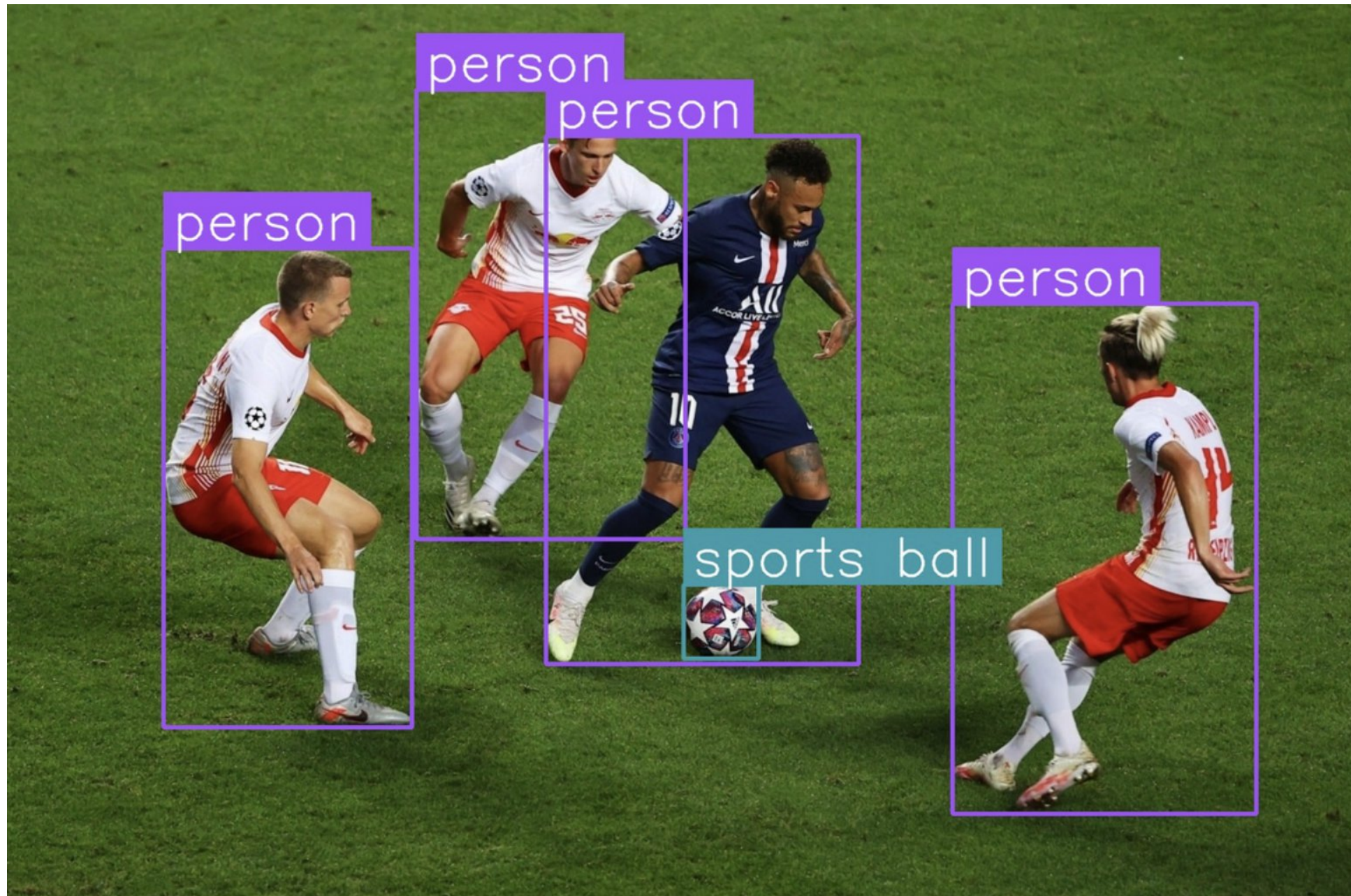
# Computer Vision in Biometrics



e.g. Face ID



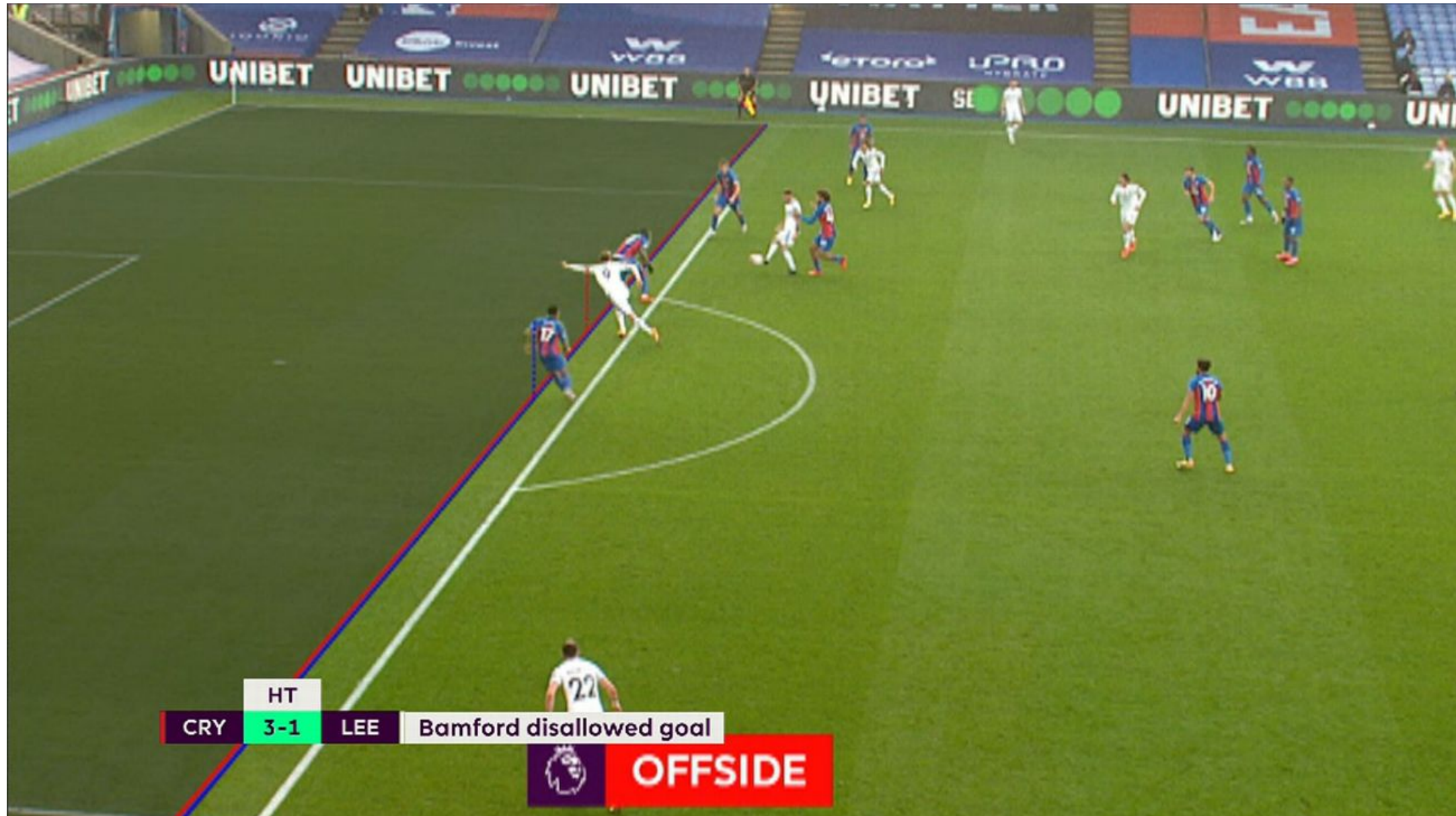
# Computer Vision in Sports



e.g. Player and Ball Tracking



# Computer Vision in Sports



e.g. Video assistant referee (VAR)

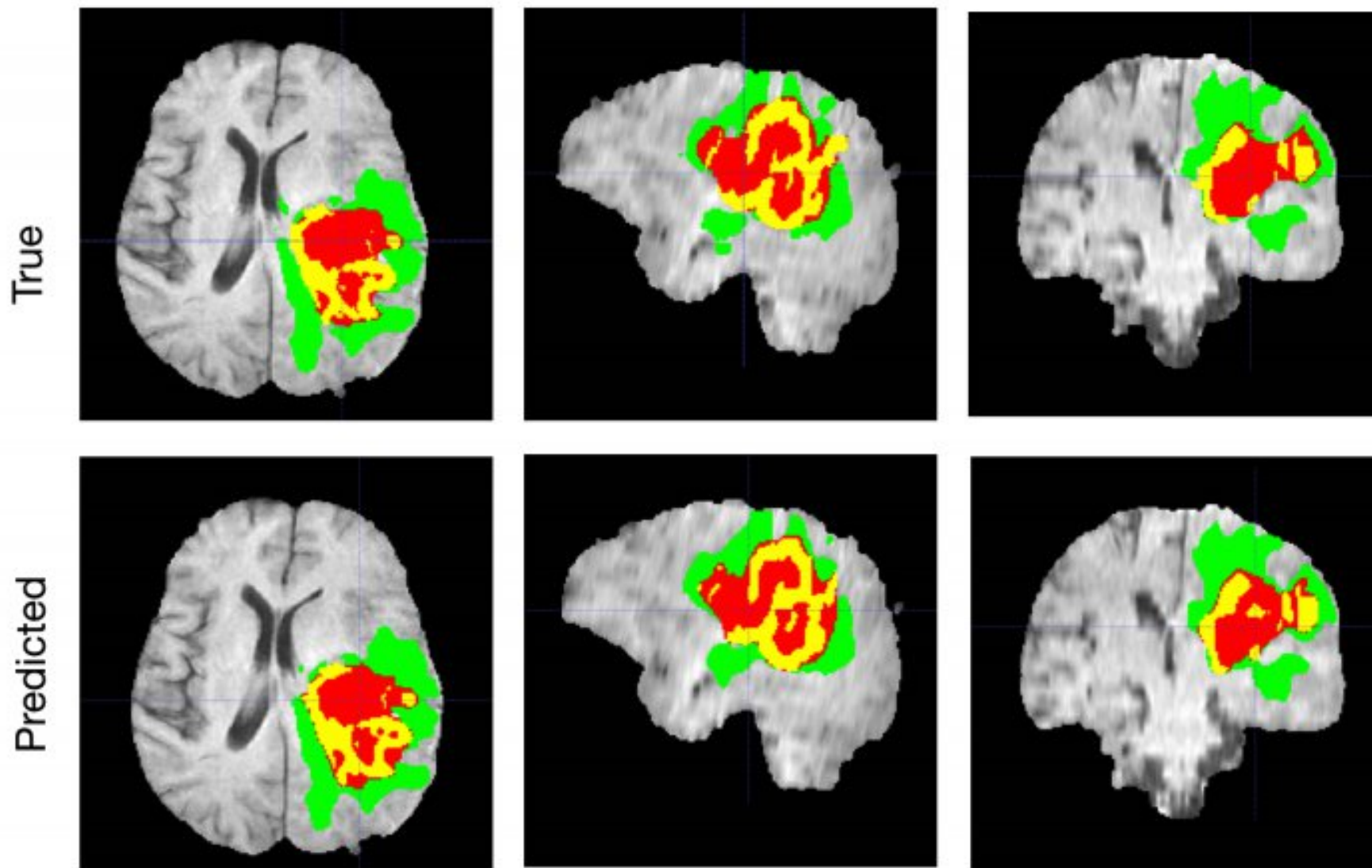


# Computer Vision in Agriculture



e.g. Detecting Plant disease

# Computer Vision in Healthcare



e.g. Brain tumor segmentation with AI

# Computer Vision in Cars

BIMMERTODAY



BMW 5/6/7 series

e.g. BMW night vision





# Computer Vision in Cars



e.g. Automated Parking

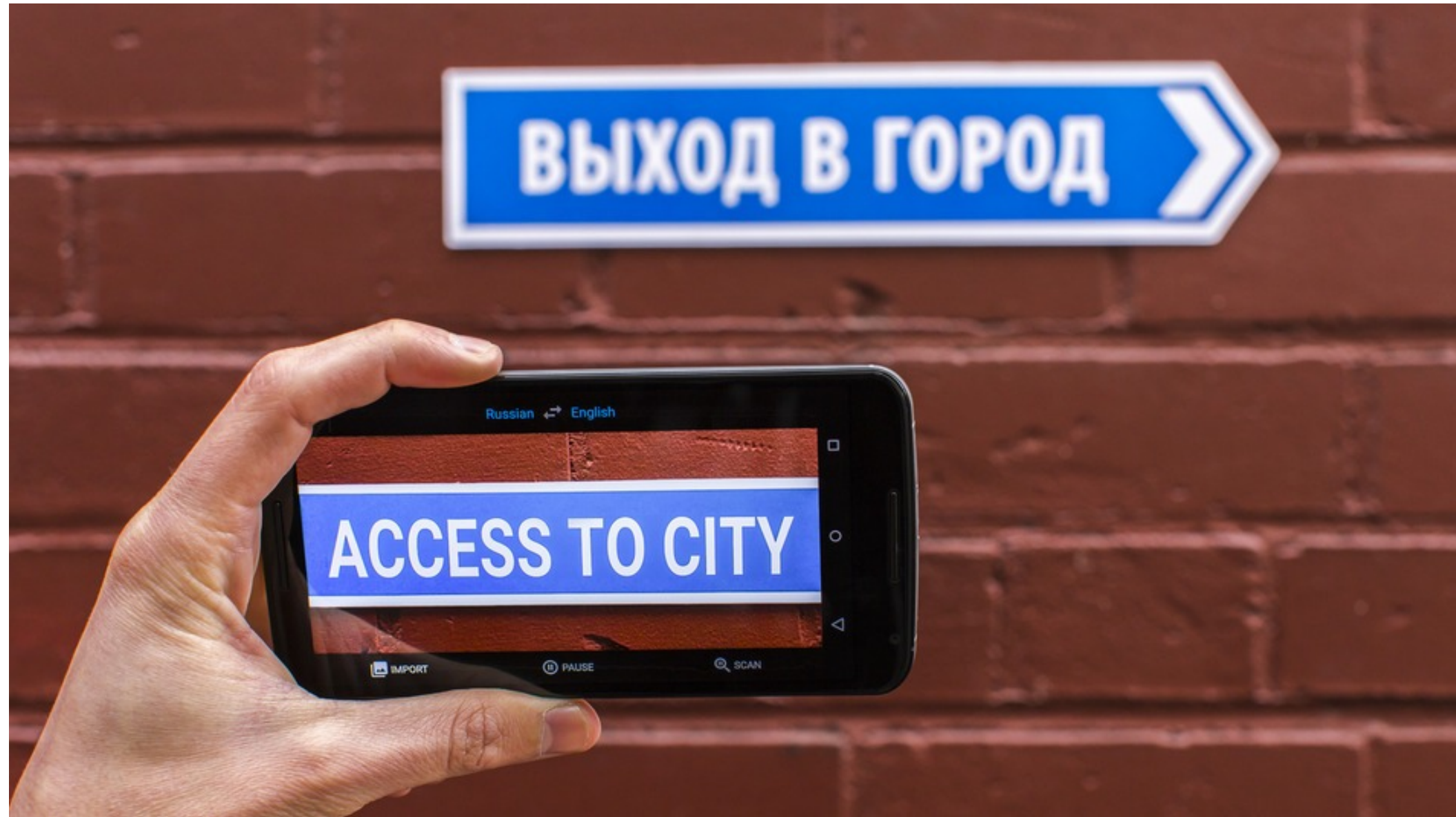
# Computer Vision for VR/AR



e.g., Pokemon GO



# Computer Vision in Smartphones



e.g., Google Translate

# Computer Vision in Arts



e.g., Style Transfer



# Computer Vision for Visual Effects



e.g., Hollywood Movies

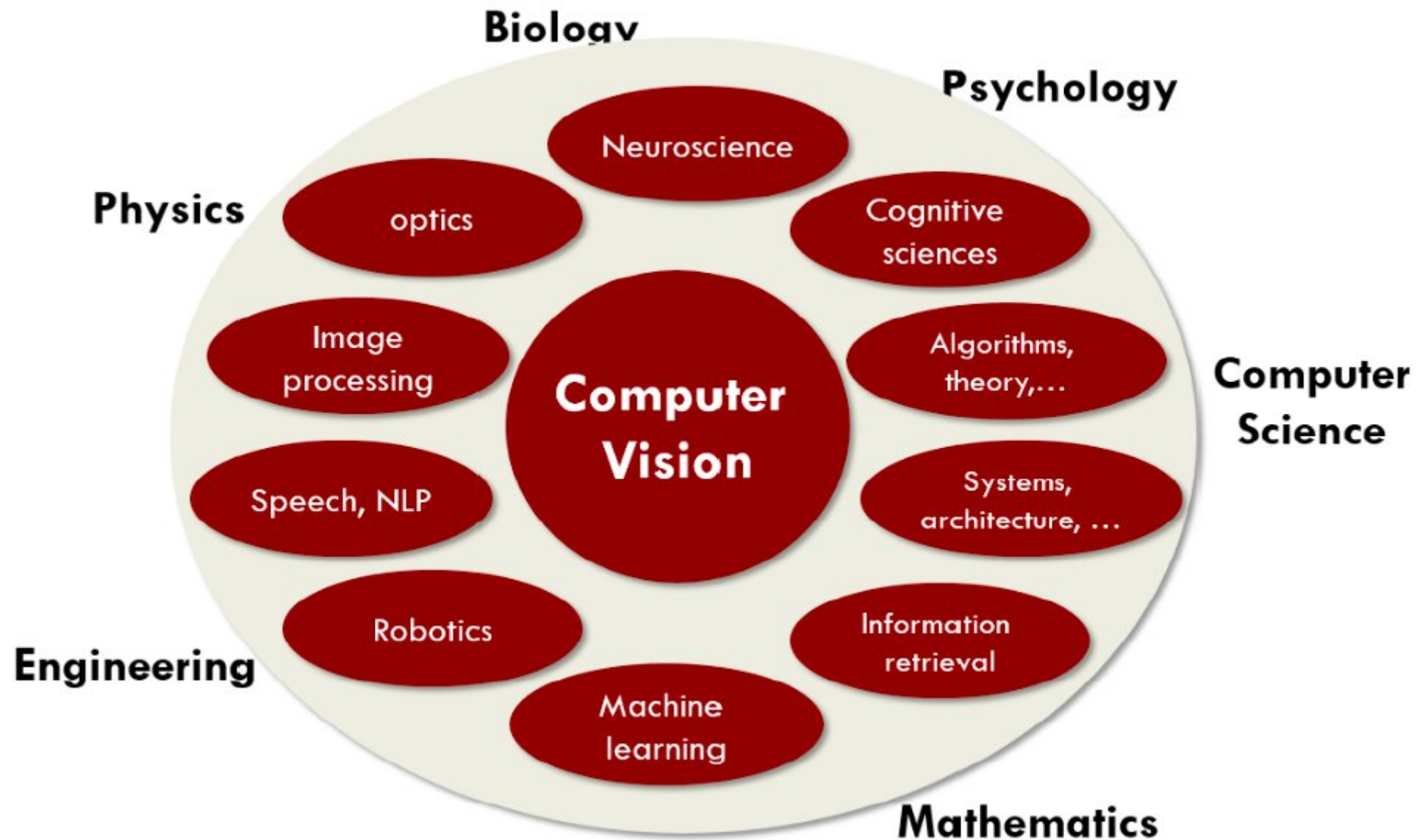


It's a good time to do  
computer vision



Industry aggressively  
hiring CV graduates

# CV at the intersection of multiple disciplines

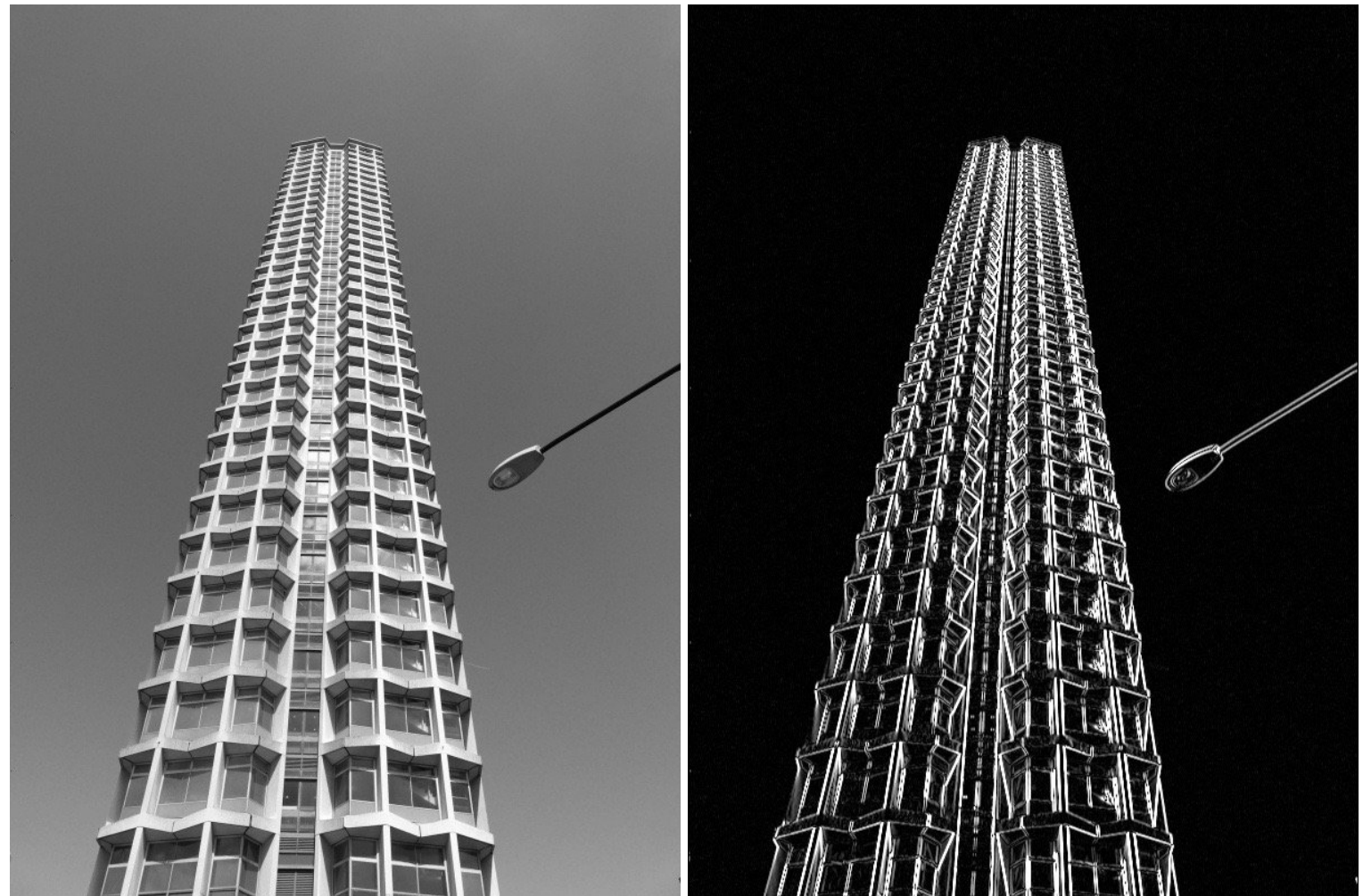


# Course logistics

# Topics to be covered (Tentative)

Image processing:

- Point Processing
- LSIS and Convolution
- Image Filtering
- Fourier Transform

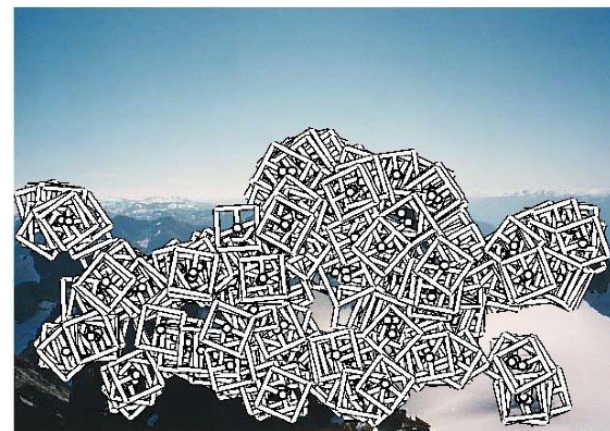
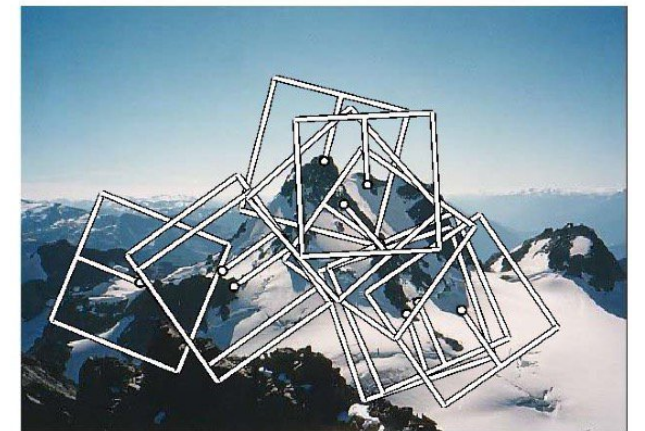
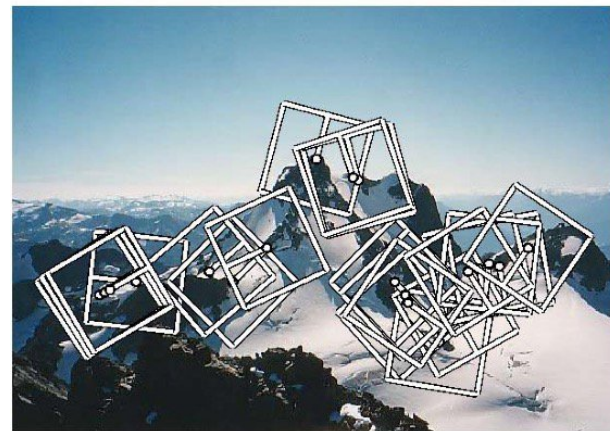
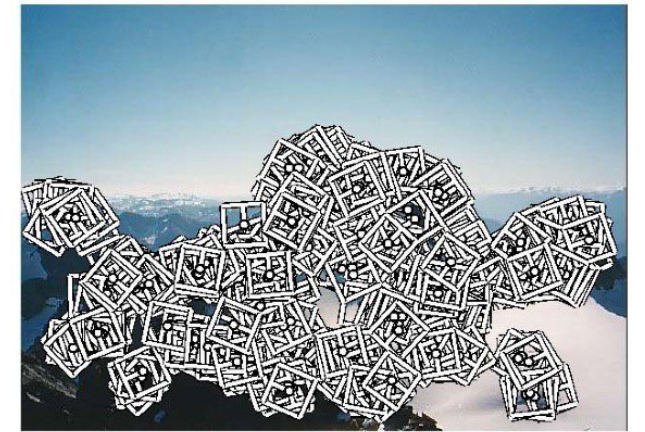




# Topics to be covered (Tentative)

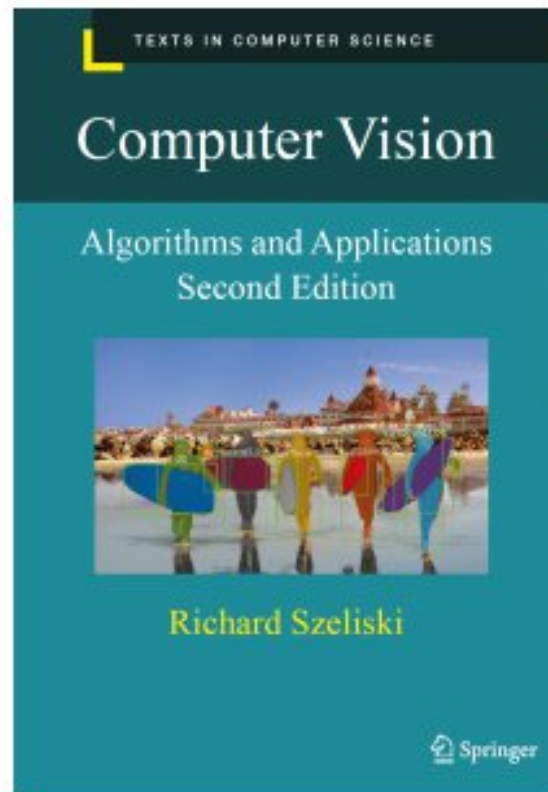
Feature detection and correspondences:

- Edge detection
- Boundary detection
- SIFT detector





# Free Book



PDF online

<http://szeliski.org/Book/>

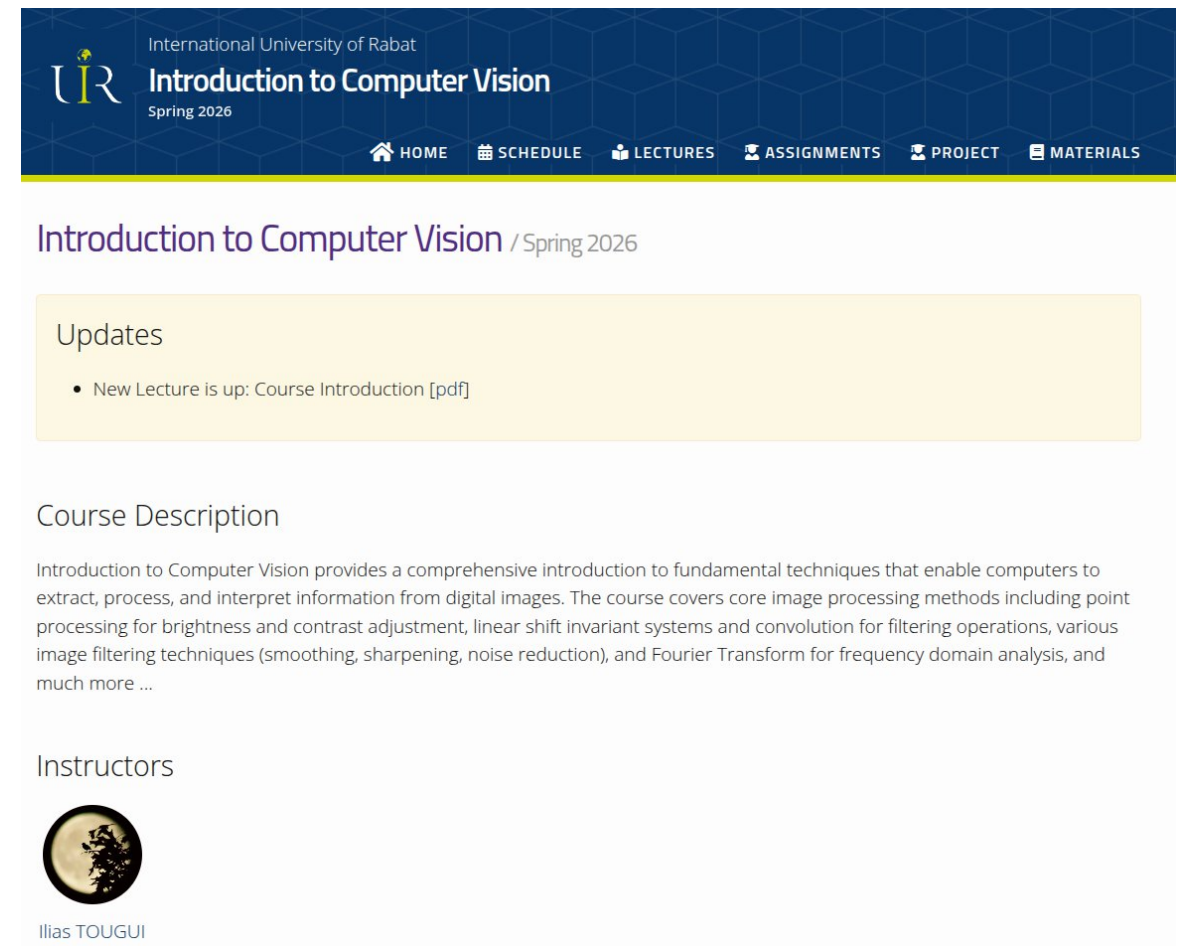
# Course Websites

<https://liaoux.github.io/uir-cv-2026/>

- Lecture slides
- Lab documents
- Suggested Readings
- Final Project Description

<https://connect.uir.ac.ma/>

- Labs / Project submissions



The screenshot shows the homepage of the 'Introduction to Computer Vision' course website. The header is dark blue with the UIR logo and course title. A navigation bar includes links for HOME, SCHEDULE, LECTURES, ASSIGNMENTS, PROJECT, and MATERIALS. The main content area has a yellow box for 'Updates' mentioning a new lecture. Below is a 'Course Description' section with a paragraph about the course content. At the bottom, the 'Instructors' section features a circular profile picture of Ilias TOUGUI.

International University of Rabat  
**Introduction to Computer Vision**  
Spring 2026

HOME SCHEDULE LECTURES ASSIGNMENTS PROJECT MATERIALS

### Introduction to Computer Vision / Spring 2026


#### Updates

- New Lecture is up: Course Introduction [pdf]

#### Course Description

Introduction to Computer Vision provides a comprehensive introduction to fundamental techniques that enable computers to extract, process, and interpret information from digital images. The course covers core image processing methods including point processing for brightness and contrast adjustment, linear shift invariant systems and convolution for filtering operations, various image filtering techniques (smoothing, sharpening, noise reduction), and Fourier Transform for frequency domain analysis, and much more ...

#### Instructors



Ilias TOUGUI



# Grading Policy

**The grading is based on:**

- Labs / Assignments (individually)
- 1 Final Project (mid-term) (in groups of 2)
- Final Exam