**Goal:** Inferring the properties of the world from one or more images

- Photographs
- Video Sequences
- Medical images
- Microscopy data

→ Image Understanding
Challenges

Vision involves dealing with:
• Noisy images
• Many-to-one mapping
• Aperture problem

→ Requires:
• Assumptions about the world
• Statistical and physics-based models
• Training data

True image understanding seems to require a great deal of thinking. We are not quite there yet.
Cameras are becoming ever more prevalent and Deep networks have immensely boosted the performance of Computer Vision algorithms:

- Tremendous potential for applications.
- A window on the way the mind works.
- But limited understanding of why things work.

➡ Still much work to be done !!!!
➡ Lots of jobs in Switzerland and elsewhere.
Course Outline

Introduction:
• Definition
• Human vision
• Image formation

Extracting features:
• Contours
• Texture
• Regions

Shape recovery:
• From one image
• Using additional images
Deep Learning Revolution

or

...

deep nets
Final Exam

Tuesday 20.06.2023 from 09h15 to 10h45 (CE1, CE1515)

• One sheet of hand-written notes is allowed.
• No other documents or electronic devices.