Summary

Computer Vision aims at modeling the world from digital images acquired using video or infrared cameras, and other imaging sensors. We will focus on images acquired using digital cameras. We will introduce basic processing techniques and discuss their field of applicability.

Content

Introduction
• History of Computer Vision
• Human vs Machine Vision
• Image formation

Extracting 2D Features
• Contours
• Texture
• Regions

3D Shape Recovery
• From one single image
• From multiple images

Learning Prerequisites

Recommended courses
Foundations of Image Science

Learning Outcomes

By the end of the course, the student must be able to:
• Choose relevant algorithms in specific situations
• Perform simple image-understanding tasks

Teaching methods
Ex cathedra lectures and programming exercises using matlab.

Assessment methods
With continuous control

Resources

Bibliography

Ressources en bibliothèque
• Multiple View Geometry in Computer Vision / Zisserman
• Computer Vision: Algorithms and Applications / Szeliski

Websites
• http://cvlab.epfl.ch/

Moodle Link
• http://moodle.epfl.ch/course/view.php?id=472