

Computer Vision

RECOMMENDED TEXTBOOKS

Emanuele Trucco and Alessandro Verri. *Introductory Techniques for 3-D Computer Vision*. Prentice Hall 1998. ISBN: 0-13-261108-2H.

David A. Forsyth and Jean Ponce. *Computer Vision: a Modern Approach*. (2nd ed.) Prentice Hall 2011. ISBN: 0-13-608592X

Lecture Plan

TOPIC: IMAGE FORMATION

Week 1	15. April	Introduction to Computer Vision Administrative Information Geometric Image Formation Radiometry
Week 2	22. April	Radiometry - continued Projection Coordinate Systems

TOPIC: IMAGE FEATURES

Week 3	29. April	Digital Camera Capture Noisy Sensors Convolution Smoothing
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No lecture 01.05.13

Week 4	6. May	Edge Detection Multi-resolution Analysis
Week 5	13. May	Texture Filters Texture Synthesis
Week 6	20. May	Shape from Texture Color – the physics of color

No lecture 20.05.13

Week 7	27. May	Color – illumination Color – surfaces Color – trichromacy Color perception Color spaces
Week 8	3. June	Hough Transform Deformable Models

TOPIC: MULTIPLE IMAGES

Week 9	10. June	Basic Binocular Stereo Setup Correspondence Problem Triangulation Structured Light
Week 10	17. June	Epipolar Geometry Basic Introduction to Motion Analysis Optical Flow Motion Field
Week 11	24. June	Optical Flow, Motion Field Differential Method Kalman Filtering
Week 12	1. July	Kalman Filtering - continued Particle Filtering
Week 13	8. July	Particle Filtering - continued SIFT Features
Week 14	15. July	Building Rome in a Day Review