

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	7. April	Introduction to Computer Vision Administrative Information Geometric Image Formation Radiometry Projection Coordinate Systems
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TOPIC: IMAGE FEATURES

Week 2	14. April	Digital Camera Capture Noisy Sensors Convolution
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No lecture 17.04.14

Week 3	21. April	Smoothing Edge Detection
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No lecture 22.04.14

Week 4	28. April	Edge Detection - continued Multi-resolution Analysis
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No lecture 01.05.14

Week 5	5. May	Texture Filters Texture Synthesis Shape from Texture
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Week 6	12. May	Color – the physics of color Color – illumination Color – surfaces Color – trichromacy Color perception Color spaces
Week 7	19. May	Hough Transform Deformable Models

TOPIC: MULTIPLE IMAGES

Week 8	26. May	Basic Binocular Stereo Setup Correspondence Problem Triangulation Structured Light
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No lecture 29.05.14

Week 9	2. June	Multiview Geometry Epipolar Geometry Basic Introduction to Motion Analysis Optical Flow Motion Field Differential Method
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Week 10	9. June	Kalman Filtering
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No lecture 10.06.14

Week 11	16. June	Kalman Filtering - continued
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No lecture 19.06.14

Week 12	23. June	Particle Filtering
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Week 13	30. June	SIFT Features Building Rome in a Day
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Week 14	7. July	Building Rome in a Day - continued Review
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