piazza

Slides, Assignments and Discussion

piazza.com/cmu/fall2019/16385/home

gradescope

Assignment submission and grades

MB3N4Z

Project-based

7 programming assignments

Project-based

7 programming assignments

a lot of programming

Project-based

7 programming assignments

a lot of programming

seriously… a lot…

Grading

Programming Assignments: 100%

Assignments

1. Hough Transform (10%)
2. Bag of Visual Words (15%)
3. Neural Networks (15%)
4. Homography Estimation (15%)
5. 3D Reconstruction (15%)
6. Photometric Stereo (15%)
7. Video Tracking (15%)

Late day policy

- 5 late days for the entire semester
- Use up to 2 late days on one assignment
- 33% penalty for each late day after using all allowed late days
- E.g., 33% reduction of score if one day late, 66% reduction if two days late, 0% if three days late

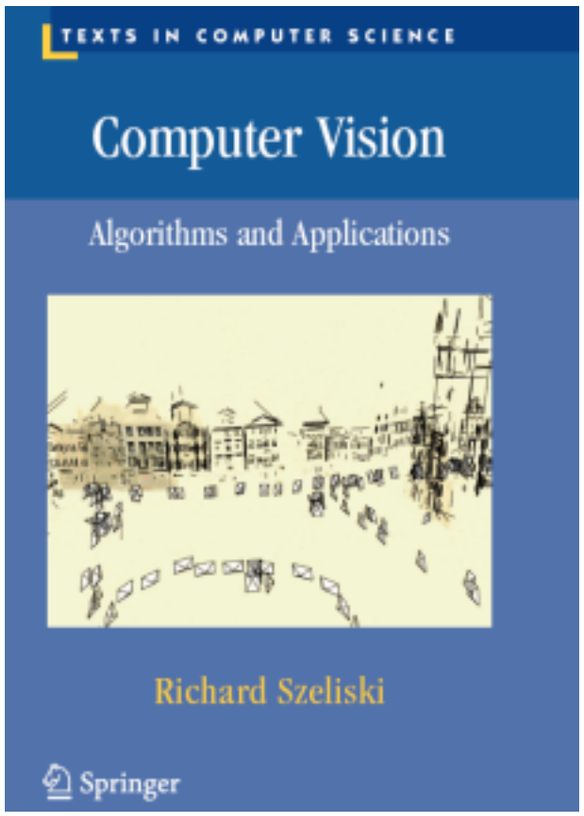
Schedule

Will change! Always check Piazza for latest version!

Date	Topic	Lecturer	Assignments
Aug-26	Introduction, Overview, Policies	Kitani	
Aug-28	Filtering, Pyramids, Gradients	Kitani	
Sep-2	NO CLASS (Labor Day)	-	
Sep-4	Hough Transforms	Kitani	
Sep-9	Quadratics, Harris Corners, Multi-scale Laplace	Kitani	HW1 Release (Hough)
Sep-11	Feature Descriptors	Kitani	
Sep-16	Bag-of-words, K-means, Nearest Neighbor	Kitani	
Sep-18	Probability, Naive Bayes, SVM	Kitani	
Sep-23	Perceptron, MLP	Kitani	HW2 Release (BoW/SVM)
Sep-25	Gradient Descent, Backpropagation	Kitani	
Sep-30	Classification: LeNet, AlexNet	Kitani	
Oct-2	Classification: VGG, ResNet, GoogleNet	Kitani	
Oct-7	Detection: RCNN, Fast, Faster, SSD, YOLO	Kitani	HW3 Release (Digit Recognition)
Oct-9	Image Formation (Exposure, Focus, Pinhole. Lens)	Narasimhan	
Oct-14	2D Transforms, Homography, RANSAC	Narasimhan	
Oct-16	Camera Models	Narasimhan	
Oct-21	2-view Geometry (PnP, Triangulation)	Narasimhan	HW4 Release (Homography)
Oct-23	SFM (Reconstruction, TK Factorization, BA)	Narasimhan	
Oct-28	Advanced Topic	Held	
Oct-30	Advanced Topic	-	
Nov-4	Stereo (Block matching, Rectification)	Narasimhan	HW5 Release (3D Reconstruction)
Nov-6	Radiometry and Reflectance	Narasimhan	
Nov-11	Photometrics Stereo, Shape from Shading	Narasimhan	
Nov-13	Brightness Constancy, Optical Flow	Narasimhan	
Nov-18	Image Registration (Additive/Inverse)	Narasimhan	HW6 Release (Photometric Stereo)
Nov-20	Mean-Shift Tracking, State Estimation	Narasimhan	
Nov-25	Bayesian Inference, Kalman Filtering, Mono-SLAM	Narasimhan	
Nov-27	NO CLASS (Thanksgiving)	-	
Dec-2	Advanced Topics	-	HW7 Release (Tracking)
Dec-4	Advanced Topics	-	

Book

(optional)



PDF online

http://szeliski.org/Book/

Enjoy the class and master as much as you can!