Table 1: EE44 Computer Vision Exam Topic List

Topic	2019	R	2018	R	2017	R	2016	R	2015	R
Interest Points	✓	✓								
Scale Invariant Feature Transform	✓	✓	✓							
Scale-Space Extrema Detection	✓									
ML Terms	✓		✓							
Feature Normalization	✓				✓					
LOOCV	✓									
SVM Classification	✓	✓			✓					
Histogram of Oriented Gradients (HOG)	✓	✓	✓							
Precision & Recall	✓									
HOG VS SIFT	✓									
Confusion Matrix	✓									
Hidden Layer in ANN	✓									
Weight Matrix & Bias Vector	✓				✓					
Logistic Classifier					✓					
Gradient Descent	✓						✓			
Translational Invariance in CNN	✓									
Convolution	✓									
Dilated Convolution in CNN	✓									
Receptice Field of CNN	✓									
Stride and Padding in CNN	✓				✓					
Transfer Learning in CNN	✓									
Union Evaluation Metric in CNN	✓									
Non-Maximum Suppression in CNN	✓									
Region-Based CNN (R-CNN)	✓									
Salient Features		✓								
Training & Testing		✓								
Unbalanced Data Sets		✓	✓							
Hughes Phenomenon		✓			✓					
Sequential Algorigthms		✓								
Binary Decision Tree		✓								
Bias & Variance		✓	✓							
Fully Connected Layer in ANN		✓	✓		✓					
Back-Propagation in ANN		✓	✓							
Softmax in ANN		✓					✓			
Multinomial Logistic Classification		✓								
Overfitting in ANN		✓								
Visualization		✓								
Standard/Depthwise Separable Convolution		✓								
Fine Tuning Learning in CNN		✓								
Autoencoders in CNN		✓								
Adversarial Image		✓								
RootSIFT			✓							
Convolution Layer in CNN			✓	✓	✓					
Pooling Layer in CNN			✓		✓					
Stochastic Gradient Descent			✓				✓			
Back Propagation Maths			✓							
Momentum in Gradient Descent			✓				✓			
U-Net			✓							
Semantic VS Instance Segmentation			✓							
Bounding Box Evaluation Method			✓							
CNN design			✓							
Distance Metrics					✓					
Random Subsampling VS K-Fold CV										
Optimal Feature Selection										
Random Forest										
Deformable Part Models (DPM)										
CNN Dropout					✓					
VGGNet					✓					
ResNet					✓					
YOLO CNN					✓					
Morphology					✓	✓	✓			
CMOS vs CCD					✓					
Optical/Lighting Terms					✓		✓			
2.5D vs 3D					✓					
Epipolar Contraint					✓					
PCA					✓					
Eigenimage					✓					