Quiz information

Quiz name	Final Exam
Course name	الرؤية الحاسوبية - (1_606384)
Open the quiz	Wednesday, 21 January 2026, 11:45 AM
Close the quiz	Wednesday, 21 January 2026, 1:15 PM
Open for	1 hour 30 mins
Number of complete graded first attempts	26
Total number of complete graded attempts	26
Average grade of first attempts	64.82%
Average grade of all attempts	64.82%
Average grade of last attempts	64.82%
Average grade of highest graded attempts	64.82%
Median grade (for highest graded attempt)	64.17%
Standard deviation (for highest graded attempt)	11.79%
Score distribution skewness (for highest graded attempt)	0.5159
Score distribution kurtosis (for highest graded attempt)	-0.4198
Coefficient of internal consistency (for highest graded attempt)	73.76%
Error ratio (for highest graded attempt)	51.23%
Standard error (for highest graded attempt)	6.04%

Q#	Question type	Question name	Attempts	Facility index	Standard deviation	Random guess score	Intended weight	Effective weight	Discrimination index	Discriminative efficiency
1	Multiple choice	FX:An image of size 200 × 300 stored as a grayscale image contains how many intensity values?	26	96.15%	19.61%	25.00%	2.50%	1.99%	25.37%	89.69%
2	Multiple choice	FX:Which image representation stores values in the range [0, 1] by convention?	26	30.77%	47.07%	25.00%	2.50%	3.94%	39.61%	49.83%
3	True/False	FX:A binary image always occupies less memory than a grayscale image.	26	34.62%	48.52%	50.00%	2.50%	1.52%	-3.36%	-4.07%
4	Multiple choice	FX:Which task belongs to the pre-processing stage of Computer Vision?	26	73.08%	45.23%	25.00%	2.50%	1.97%	2.94%	4.20%
5	Multiple choice	FX:Why is Python commonly used with OpenCV?	26	80.77%	40.19%	25.00%	2.50%		-10.96%	-18.16%
6	True/False	FXGoogle Colab requires manual installation of OpenCV before use.	26	57.69%	50.38%	50.00%	2.50%	2.01%	0.92%	1.12%
7	Multiple choice	FX MAQ Which are valid	26	87.18%	16.54%		2.50%	1.66%	20.80%	26.21%

		environments mentioned for OpenCV development?							
8	Multiple choice	Which OpenCV feature makes it suitable for real-time applications?	26	23.08%	42.97%	25.00%	2.50%	2.45%	11.29%	14.92%
9	Multiple choice	Why do many algorithms prefer grayscale images?	26	73.08%	45.23%	25.00%	2.50%	4.10%	46.73%	69.66%
10	True/False	Resizing an image to a very large size may cause loss of details.	26	7.69%	27.17%	50.00%	2.50%	1.59%	7.73%	13.45%
11	Multiple choice	In cv2.resize(img, (200,200)), the values represent:	26	46.15%	50.84%	25.00%	2.50%		-31.79%	-38.05%
12	Multiple choice	Which preprocessing step is MOST suitable for data augmentation?	26	42.31%	50.38%	25.00%	2.50%	5.18%	72.43%	86.84%
13	Multiple choice	Which operations are mainly used for visualization and debugging?	26	92.31%	18.40%		2.50%	1.86%	23.72%	43.95%
14	True/False	Brightness adjustment changes pixel intensity uniformly across the image.	26	84.62%	36.79%	50.00%	2.50%	2.96%	27.55%	50.72%
15	Multiple choice	Which filter assigns the average of neighboring pixels?	26	80.77%	40.19%	25.00%	2.50%	2.31%	10.92%	18.28%
16	Multiple choice	Which smoothing filter best removes salt-and-pepper noise?	26	65.38%	48.52%	25.00%	2.50%	4.40%	50.56%	67.20%
17	True/False	Sharpening filters reduce noise in images.	26	53.85%	50.84%	50.00%	2.50%	4.68%	55.25%	66.45%
18	Multiple choice	A histogram with most values near 0 indicates the image is:	26	92.31%	27.17%	25.00%	2.50%	0.89%	-1.52%	-3.65%

19	Multiple choice	Histogram equalization is applied to:	26	73.08%	45.23%	25.00%	2.50%	4.13%	47.42%	70.64%
20	Multiple choice	Histogram equalization helps to:	26	78.85%	25.19%		2.50%	2.87%	43.20%	51.95%
21	Multiple choice	Thresholding converts a grayscale image into:	26	92.31%	27.17%	25.00%	2.50%	2.36%	24.34%	57.54%
22	True/False	Adaptive thresholding uses a single global threshold value.	26	61.54%	49.61%	50.00%	2.50%	3.00%	16.27%	20.70%
23	Multiple choice	Which thresholding method automatically selects the best cutoff value?	26	80.77%	40.19%	25.00%	2.50%	3.77%	44.60%	75.26%
24	Multiple choice	Which operator detects edges in both directions at once?	26	30.77%	47.07%	25.00%	2.50%	4.20%	46.85%	57.17%
25	Multiple choice	Why is Canny edge detection preferred?	26	53.85%	50.84%	25.00%	2.50%	3.02%	15.68%	18.50%
26	True/False	Sobel operator computes intensity changes separately along X and Y directions.	26	7.69%	27.17%	50.00%	2.50%	1.99%	15.65%	27.12%
27	Multiple choice	Which operation shrinks white regions?	26	65.38%	48.52%	25.00%	2.50%	4.07%	41.21%	54.41%
28	True/False	Morphological operations are mainly applied to binary images.	26	100.00%	0.00%	50.00%	2.50%	0.00%		
29	Multiple choice	Opening is defined as:	26	88.46%	32.58%	25.00%	2.50%	2.41%	19.30%	43.46%
30	Multiple choice	Which operation fills small black holes?	26	46.15%	50.84%	25.00%	2.50%	4.23%	42.54%	49.21%
31	Multiple choice	Which operations help clean noisy binary images?	26	69.23%	28.55%		2.50%	3.18%	46.60%	54.43%
32	Multiple choice	Why are features extracted from images?	26	88.46%	32.58%	25.00%	2.50%	1.76%	6.91%	14.01%
33	True/False	Corners are considered	26	88.46%	32.58%	50.00%	2.50%	1.02%	-2.25%	-4.60%

		stable image features.								
34	Multiple choice	Which method detects keypoints and computes binary descriptors?	26	61.54%	49.61%	25.00%	2.50%	4.77%	60.07%	76.34%
35	Multiple choice	HOG mainly captures:	26	69.23%	47.07%	25.00%	2.50%	3.71%	33.83%	45.85%
36	Multiple choice	Which are shape features?	26	84.62%	19.39%		2.50%	2.22%	33.27%	40.79%
37	Multiple choice	In the CV pipeline, Machine Learning is applied after:	26	88.46%	32.58%	25.00%	2.50%	2.91%	31.46%	70.24%
38	True/False	Machine Learning models operate directly on raw pixels in this course.	26	69.23%	47.07%	50.00%	2.50%	0.86%	-7.67%	-10.70%
39	Multiple choice	Which model is considered a simple baseline classifier?	26	0.00%	0.00%	25.00%	2.50%	0.00%		
40	True/False	Histogram equalization may reduce image contrast if the original image already has a well-distributed range of intensity values.	26	73.08%	45.23%	50.00%	2.50%		-12.60%	-18.37%

Statistics for question positions

Show chart data

An image of size 200 × 300 stored as a grayscale image contains how many intensity values?

Model response	Partial credit	Count	Frequency
200	0.00%	0	0.00%
300	0.00%	1	3.85%
60,000	100.00%	25	96.15%
180,000	0.00%	0	0.00%
[No response]	0.00%	0	0.00%

Which image representation stores values in the range [0, 1] by convention?

Model response	Partial credit	Count	Frequency
uint8 grayscale image	0.00%	5	19.23%
Binary image	0.00%	13	50.00%
Double image	100.00%	8	30.77%
RGB color image	0.00%	0	0.00%
[No response]	0.00%	0	0.00%

A binary image always occupies less memory than a grayscale image.

Model response	Partial credit	Count	Frequency
False	100.00%	9	34.62%
True	0.00%	17	65.38%
[No response]	0.00%	0	0.00%

Which task belongs to the pre-processing stage of Computer Vision?

Model response	Partial credit	Count	Frequency
Object classification	0.00%	4	15.38%
Face recognition	0.00%	0	0.00%
Image thresholding	100.00%	19	73.08%
Decision-making	0.00%	3	11.54%
[No response]	0.00%	0	0.00%

Why is Python commonly used with OpenCV?

Model response	Partial credit	Count	Frequency
It produces faster compiled code	0.00%	2	7.69%
It integrates well with NumPy arrays	100.00%	21	80.77%
It replaces C++ implementations	0.00%	2	7.69%
It requires no memory management	0.00%	1	3.85%
[No response]	0.00%	0	0.00%

Google Colab requires manual installation of OpenCV before use.

Model response	Partial credit	Count	Frequency
False	100.00%	15	57.69%
True	0.00%	11	42.31%
[No response]	0.00%	0	0.00%

What are the valid environments mentioned for OpenCV development?

(NOTE: This is an MAQ.)

Part of question	Response	Partial credit	Count	Frequency
106937	Jupyter Notebook	33.33%	22	84.62%
106938	PyCharm	33.33%	20	76.92%
106939	Google Colab	33.33%	26	100.00%
106940	Android Studio	0.00%	0	0.00%

Which OpenCV feature makes it suitable for real-time applications?

Model response	Partial credit	Count	Frequency
GUI support	0.00%	11	42.31%
Optimized algorithms	100.00%	6	23.08%
Built-in datasets	0.00%	2	7.69%
Cloud integration	0.00%	7	26.92%
[No response]	0.00%	0	0.00%

Why do many algorithms prefer grayscale images?

Model response	Partial credit	Count	Frequency
They contain more color information	0.00%	1	3.85%
They reduce computation cost	100.00%	19	73.08%
They increase image resolution	0.00%	3	11.54%

They enhance contrast automatically	0.00%	3	11.54%
[No response]	0.00%	0	0.00%

Resizing an image to a very large size may cause loss of details.

Model response	Partial credit	Count	Frequency
False	100.00%	2	7.69%
True	0.00%	24	92.31%
[No response]	0.00%	0	0.00%

In `cv2.resize(img, (200,200))`, the values represent:

Model response	Partial credit	Count	Frequency
Height then width	0.00%	12	46.15%
Width then height	100.00%	12	46.15%
Rows then columns	0.00%	1	3.85%
Scale factors	0.00%	1	3.85%
[No response]	0.00%	0	0.00%

Which preprocessing step is MOST suitable for data augmentation?

Model response	Partial credit	Count	Frequency
Grayscale conversion	0.00%	6	23.08%
ROI cropping	0.00%	3	11.54%
Flipping	100.00%	11	42.31%
Histogram equalization	0.00%	6	23.08%
[No response]	0.00%	0	0.00%

Which operations are mainly used for visualization and debugging?

(NOTE: this is a MAQ)

Part of question	Response	Partial credit	Count	Frequency
107001	Drawing rectangles	50.00%	25	96.15%
107002	Adding text	50.00%	23	88.46%
107003	Saving images	0.00%	5	19.23%
107004	Thresholding	0.00%	11	42.31%

Brightness adjustment changes pixel intensity uniformly across the image.

Model response	Partial credit	Count	Frequency
False	0.00%	4	15.38%
True	100.00%	22	84.62%
[No response]	0.00%	0	0.00%

Which filter assigns the average of neighboring pixels?

Model response	Partial credit	Count	Frequency
Median Blur	0.00%	3	11.54%
Gaussian Blur	0.00%	0	0.00%
Averaging Blur	100.00%	21	80.77%
Sharpening	0.00%	2	7.69%
[No response]	0.00%	0	0.00%

Which smoothing filter best removes salt-and-pepper noise?

Model response	Partial credit	Count	Frequency

Gaussian	0.00%	6	23.08%
Averaging	0.00%	1	3.85%
Median	100.00%	17	65.38%
Laplacian	0.00%	2	7.69%
[No response]	0.00%	0	0.00%

Sharpening filters reduce noise in images.

Model response	Partial credit	Count	Frequency
False	100.00%	14	53.85%
True	0.00%	12	46.15%
[No response]	0.00%	0	0.00%

A histogram with most values near 0 indicates the image is:

Model response	Partial credit	Count	Frequency
Overexposed	0.00%	0	0.00%
Bright	0.00%	1	3.85%
Dark	100.00%	24	92.31%
Balanced	0.00%	1	3.85%
[No response]	0.00%	0	0.00%

Histogram equalization is applied to:

Model response	Partial credit	Count	Frequency
RGB images directly	0.00%	1	3.85%
Binary images	0.00%	4	15.38%
Grayscale images	100.00%	19	73.08%
Color histograms only	0.00%	2	7.69%
[No response]	0.00%	0	0.00%

Histogram equalization helps to:

(Note: this is an MAQ)

Part of question	Response	Partial credit	Count	Frequency
107053	Improve contrast	50.00%	19	73.08%
107054	Remove noise	0.00%	11	42.31%
107055	Spread pixel intensities	50.00%	22	84.62%
107056	Detect edges	0.00%	8	30.77%

Thresholding converts a grayscale image into:

Model response	Partial credit	Count	Frequency
Color image	0.00%	1	3.85%
Binary image	100.00%	24	92.31%
Double image	0.00%	1	3.85%
Edge image	0.00%	0	0.00%
[No response]	0.00%	0	0.00%

Adaptive thresholding uses a single global threshold value.

Model response	Partial credit	Count	Frequency
False	100.00%	16	61.54%
True	0.00%	10	38.46%
[No response]	0.00%	0	0.00%

Which thresholding method automatically selects the best cutoff value?

Model response	Partial credit	Count	Frequency
Simple	0.00%	0	0.00%
Adaptive	0.00%	4	15.38%
Otsu	100.00%	21	80.77%
Binary	0.00%	1	3.85%
[No response]	0.00%	0	0.00%

Which operator detects edges in both directions at once?

Model response	Partial credit	Count	Frequency
Sobel	0.00%	8	30.77%
Canny	0.00%	8	30.77%
Laplacian	100.00%	8	30.77%
Gaussian	0.00%	2	7.69%
[No response]	0.00%	0	0.00%

Why is Canny edge detection preferred?

Model response	Partial credit	Count	Frequency
It is fastest	0.00%	3	11.54%
It produces thick edges	0.00%	8	30.77%
It handles noise well	100.00%	14	53.85%
It works on color images	0.00%	1	3.85%
[No response]	0.00%	0	0.00%

Sobel operator computes intensity changes separately along X and Y directions.

Model response	Partial credit	Count	Frequency
False	100.00%	2	7.69%
True	0.00%	24	92.31%
[No response]	0.00%	0	0.00%

Which operation shrinks white regions?

Model response	Partial credit	Count	Frequency
Dilation	0.00%	5	19.23%
Closing	0.00%	3	11.54%
Opening	0.00%	1	3.85%
Erosion	100.00%	17	65.38%
[No response]	0.00%	0	0.00%

Morphological operations are mainly applied to binary images.

Model response	Partial credit	Count	Frequency
False	0.00%	0	0.00%
True	100.00%	26	100.00%
[No response]	0.00%	0	0.00%

Opening is defined as:

Model response	Partial credit	Count	Frequency
Dilation → Erosion	0.00%	3	11.54%
Erosion → Dilation	100.00%	23	88.46%
Threshold → Blur	0.00%	0	0.00%

Blur → Threshold	0.00%	0	0.00%
[No response]	0.00%	0	0.00%

Which operation fills small black holes?

Model response	Partial credit	Count	Frequency
Erosion	0.00%	5	19.23%
Dilation	0.00%	5	19.23%
Opening	0.00%	4	15.38%
Closing	100.00%	12	46.15%
[No response]	0.00%	0	0.00%

Which operations help clean noisy binary images?

(Note: this is an MAQ)

Part of question	Response	Partial credit	Count	Frequency
107129	Erosion	50.00%	19	73.08%
107130	Opening	50.00%	17	65.38%
107131	Closing	0.00%	15	57.69%
107132	Sharpening	0.00%	9	34.62%

Why are features extracted from images?

Model response	Partial credit	Count	Frequency
To increase image size	0.00%	1	3.85%
To reduce computational complexity	100.00%	23	88.46%
To enhance color quality	0.00%	0	0.00%
To store images efficiently	0.00%	2	7.69%
[No response]	0.00%	0	0.00%

Corners are considered stable image features.

Model response	Partial credit	Count	Frequency
False	0.00%	3	11.54%
True	100.00%	23	88.46%
[No response]	0.00%	0	0.00%

Which method detects keypoints and computes binary descriptors?

Model response	Partial credit	Count	Frequency
HOG	0.00%	3	11.54%
Harris	0.00%	4	15.38%
ORB	100.00%	16	61.54%
Contours	0.00%	3	11.54%
[No response]	0.00%	0	0.00%

HOG mainly captures:

Model response	Partial credit	Count	Frequency
Color distribution	0.00%	0	0.00%
Edge orientation patterns	100.00%	18	69.23%
Pixel intensity values	0.00%	5	19.23%
Texture noise	0.00%	3	11.54%
[No response]	0.00%	0	0.00%

Which are shape features?

(Note: this is an MAQ)

Part of question	Response	Partial credit	Count	Frequency
107147	Area	33.33%	24	92.31%
107148	Perimeter	33.33%	22	84.62%
107149	Aspect ratio	33.33%	20	76.92%
107150	Histogram	0.00%	2	7.69%

In the CV pipeline, Machine Learning is applied after:

Model response	Partial credit	Count	Frequency
Image capture	0.00%	0	0.00%
Feature extraction	100.00%	23	88.46%
Visualization	0.00%	2	7.69%
Image saving	0.00%	1	3.85%
[No response]	0.00%	0	0.00%

Machine Learning models operate directly on raw pixels in this course.

Model response	Partial credit	Count	Frequency
False	100.00%	18	69.23%
True	0.00%	8	30.77%
[No response]	0.00%	0	0.00%

Which model is considered a simple baseline classifier?

Model response	Partial credit	Count	Frequency
SVM	0.00%	4	15.38%
KNN	100.00%	0	0.00%
Logistic Regression	0.00%	20	76.92%
CNN	0.00%	2	7.69%
[No response]	0.00%	0	0.00%

Histogram equalization may reduce image contrast if the original image already has a well-distributed range of intensity values.

Model response	Partial credit	Count	Frequency
False	0.00%	7	26.92%
True	100.00%	19	73.08%
[No response]	0.00%	0	0.00%