

Name : Kevalya Gupta

Div : A1

PRN : 1032210925

Experiment #3 (Post lab question)

→ Erosion : It is a morphological operation in image processing that involves the shrinking or wearing away of the boundaries of object in an image. It is achieved by moving a structuring element over the image and replacing each pixel with the minimum pixel value covered by the structuring element.

Structuring element : It is a small matrix typically a ~~soo~~ square or a circle, used in erosion and dilation operation. It defines the neighborhood around each pixel that is considered during the operation.

→ Dilation : It is another morphological operation that involves the expanding or thickening of the boundaries of object in an image. Similar to erosion it is performed using a structuring element, but in this case, each pixel in the image is replaced by the maximum pixel value covered by the structuring element.

Structuring element : It's choice influences the extent of dilation or erosion. For eg a larger structuring element will result in a more pronounced dilation effect.

(ii)

Ans2) Opening : It is a morphological operation that combines an erosion operation followed by a dilation operation. It is particularly useful for removing noise and small objects from an image. Opening can also be used to separate objects close to each other.

Application of opening : In medical imaging, opening can be employed to enhance the visibility of structures such as blood vessels by removing small unwanted details or noise from the image.

Closing : It is the reverse of opening, consisting of a dilation operation followed by an erosion operation. It is effective in closing small gaps occurring in an object or nearby object.

Application of closing : In the field of document analysis, closing can be applied to join broken characters in handwritten text. This helps improve optical character recognition accuracy by ensuring that characters are connected and recognized as complete entities.

T.Y. B.Tech. (ECE) Academic Year 2023-24 Semester: VI
Continuous Assessment Rubric

COURSE: Computer Vision (ECE4026B)
STUDENT:

EXPT NO.:

EVALUATOR: J. A. Lele

DATE:

DIMENSION	SCALE					SCORE (25)
	1	2	3	4	5	
Regularity and punctuality	Submitted without performance	Performed late and submitted later than scheduled date with permission	Performed on schedule; submitted two weeks late	Performed on schedule; submitted one week late	Performed and submitted as per schedule	5
Overall Understanding of experiment	Neither shows any understanding of the experiment nor can relate it to theory.	Objectives are not clear.	Can only state the objective but shows poor understanding	Understands objective but cannot place it in context of a theory topic	Understands objective and can relate it to an appropriate theory topic	4
Understanding the Procedure	Cannot follow the procedure	Follows the procedure half heartedly	Follows right procedure but cannot analyze data	Follows right procedure but can analyze data and interpret it without justification	Follows right procedure, can analyze data and interpret it with justification	4
Experiment Skills	Does not participate in experiment	Performs the experiment only with the help from supervisor/others and is confused.	Performs the experiment with some supervisory help but not keeping record.	Performs experiment on own without supervisory help, keeping record partially	Performs experiment on his/her own without supervisory help; records all readings properly. Keeps the setup clean.	5
Ethics	Copies the results from others	Completes the result analysis with help from others but forgets to acknowledge the help.	Completes the result analysis with help from others and acknowledges the help.	Produces his own result analysis but tries to manipulate	Produces his own result analysis faithfully and owns up the results without any manipulation	5

Total

Teacher's signature with date:

Student's signature with date:

RAO
8/3/24