

**Event Report On**  
**AICTE SPICES & CVM**  
**UNIVERSITY**  
**Sponsored SKILL CARNIVAL**  
**Webinar on**  
**“Image Processing and Its Applications”**  
**7<sup>th</sup> August, 2021**



**Organized By: -**

**ISTE STUDENT CHAPTER (CE & IT  
branch)**

**Madhuben & Bhanubhai Patel Institute of Technology**

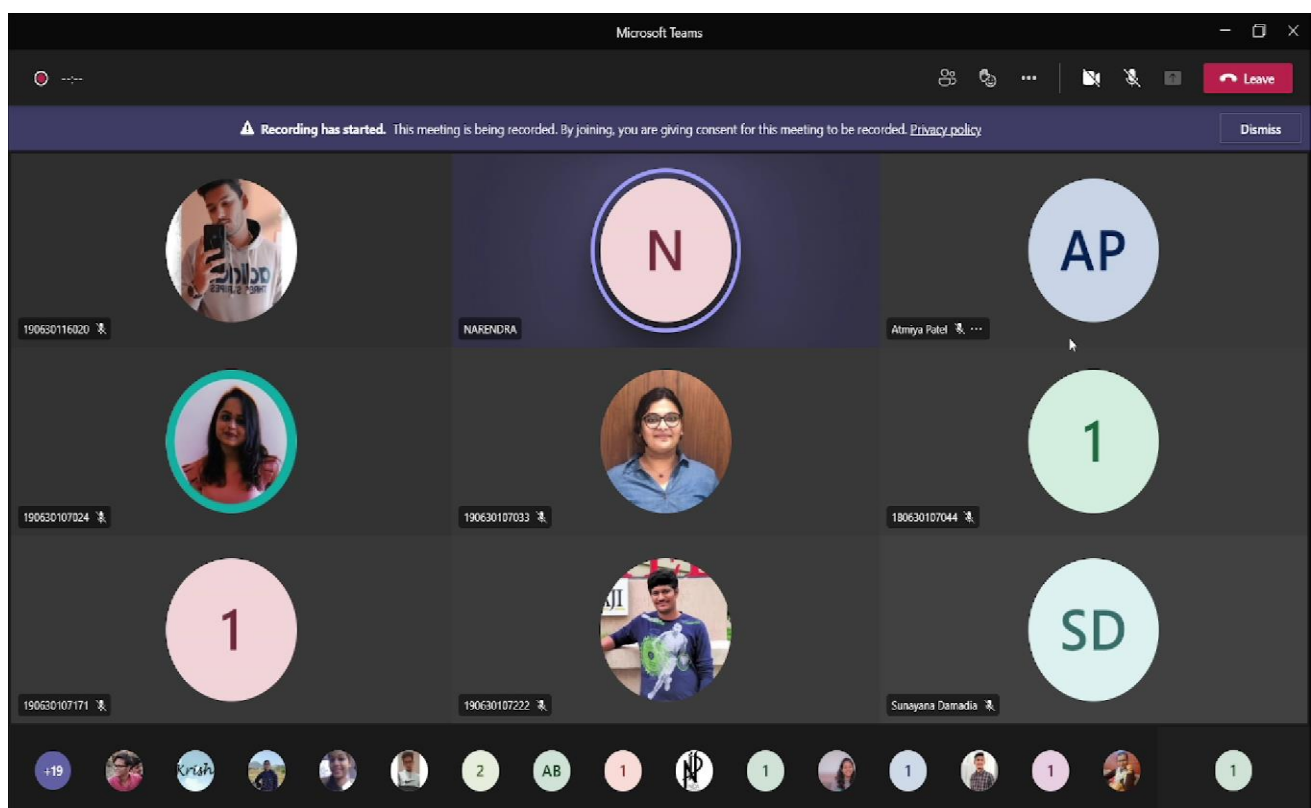
(A Constituent College of CVM University), New Vallabh Vidyanagar

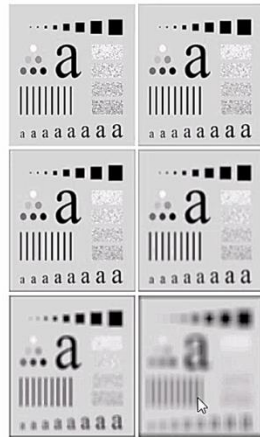
The Webinar on **Image Processing and its Applications** was organized by department of Computer Engineering & Information Technology under ISTE Student Chapter of MBIT. Webinar was conducted through online mode on Microsoft Teams on 7<sup>th</sup> August, 2021 during 3:00 to 4:30 pm. Prof. Atmiya Patel (CE Dept., MBIT) commenced the session with an expert introduction.

The expert was Prof. N. M. Patel. He is a faculty of Computer Engineering Department in BVM institute of Engineering & Technology (An autonomous institution).

He delivered brief presentation on Image Processing And Its Applications. He explored basics of Image processing with practical implementation. Some amazing topics covered by Speaker are:

- Why digital Image processing?
- Steps of Digital Image Processing.
- Digital Image Processing.
- Image Enhancement.
- Image restoration.
- Image file formats.
- Some basic grey level transformations.
- Piecewise Linear Image transformation.
- Grey Level Slicing.
- Image filtering.
- Image enhancement in frequency domain.
- Dilation.
- Erosion.
- Boundary extraction.





Averaging filter with masks of sizes  $n=3, 5, 9, 15$  and  $35$  respectively

Small detailed is removed using different size mask

When mask size is larger than smaller object is removed

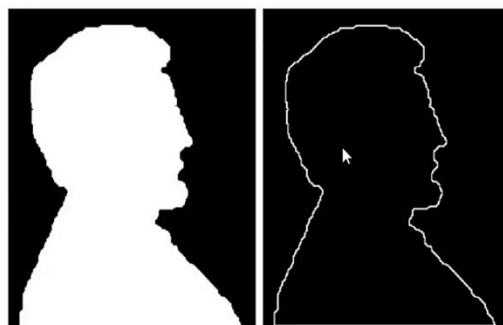
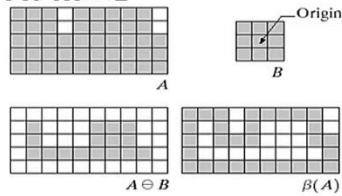
Intensity of smaller objects blend with the background and larger objects become bloblike and easy to detect.



## Boundary Extraction - Examples

a b  
c d

**FIGURE 9.13** (a) Set  $A$ . (b) Structuring element  $B$ . (c)  $A$  eroded by  $B$ . (d) Boundary, given by the set difference between  $A$  and its erosion.



a b

**FIGURE 9.14** (a) A simple binary image, with 1's represented in white. (b) Result of using Eq. (9.5-1) with the structuring element in Fig. 9.13(b).



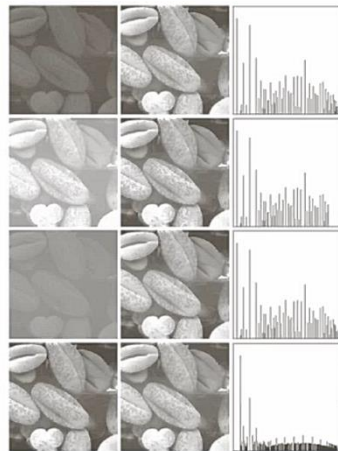
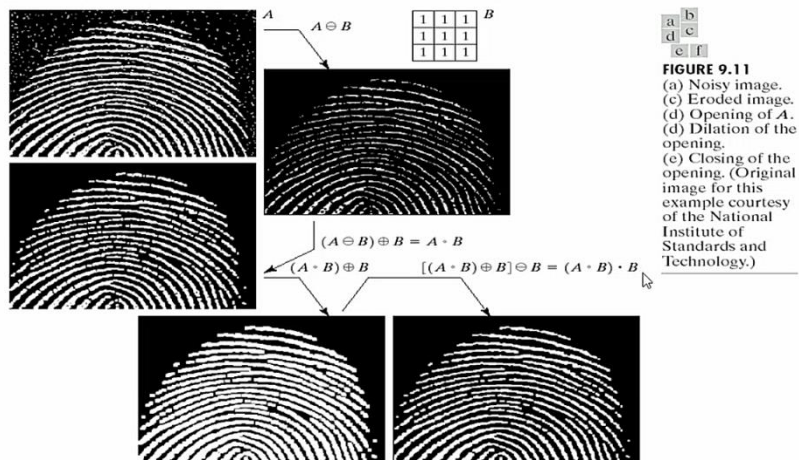


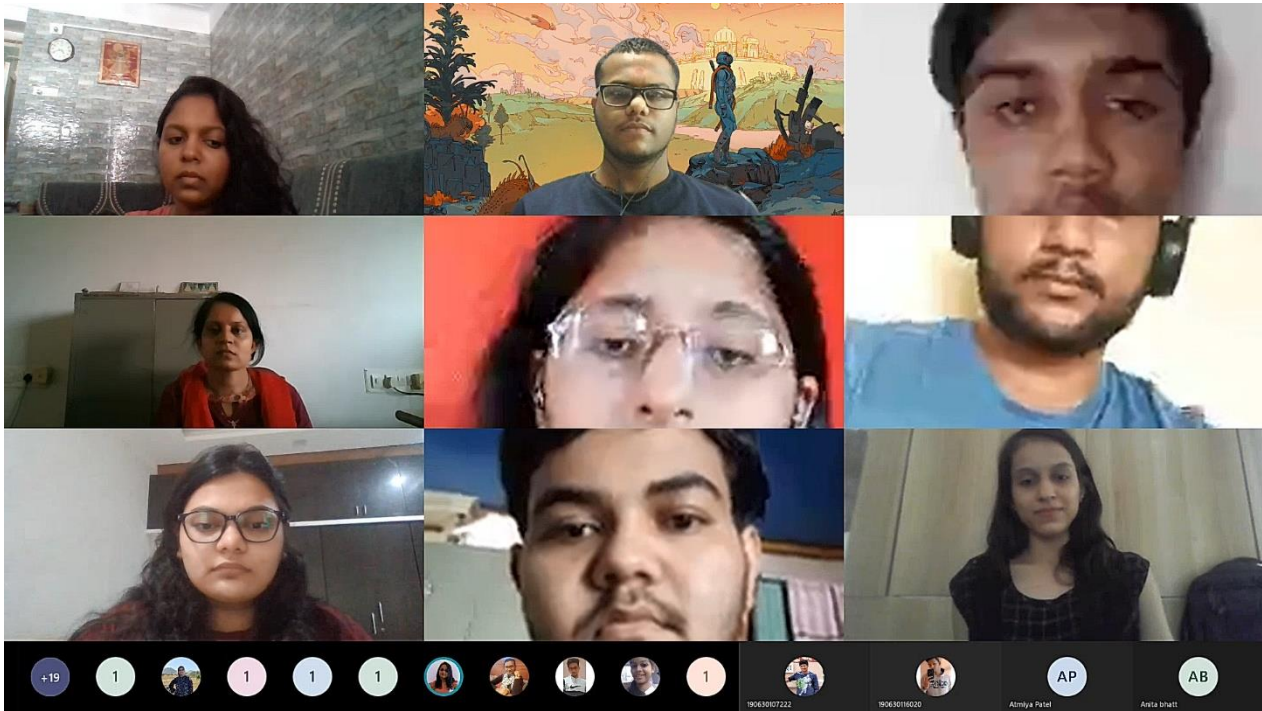
FIGURE 3.20 Left column: images from Fig. 3.16. Center column: corresponding histogram-equalized images. Right column: histograms of the images in the center column.

## Opening & Closing – Example

(3/3)



Prof. Atmiya Patel (CE Dept., MBIT) gave a vote of thanks to Prof. N. M. Patel at the end of event. He also gave a vote of thanks Prof. Nirav Raja, Head of the department of CE & Prof. Hetal Chudasma, Head of the department of IT for their constant support and encouragement which always helps us to carry out such event. The Webinar was conducted under the guidance of Prof. Sunayana Domadiya, Prof. Atmiya Patel. ISTE student coordinators had provided background support for successful conduction of this webinar.



### Organized Team:

We are thankful to our principal and CVM University for providing such opportunity which provide us a platform to conduct such webinar for the students and gaining knowledge in such pandemic situation. We are also grateful to AICTE-SPICES and CVM University for providing financial support for this webinar.

### Quiz:

The Quiz was taken of 10 marks based on topics delivered during the session of the webinar.

**No. of Participant: 49**

### Feedback:

- Totally worth the time. The knowledge and the content were wonderful. - **Rony Parmar**
- The session was super informative. - **Mahima Shah**
- Information which is given by Narendra sir about image processing is amazing...! – **Om Dave**