Computer Vision

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Online Training & Certification Course on Artificial Intelligence & Machine Learning
Defence Institute of Advanced Technology (DU), Pune.

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Boundary descriptors, chain codes, Fourier descriptors, region descriptors, moments

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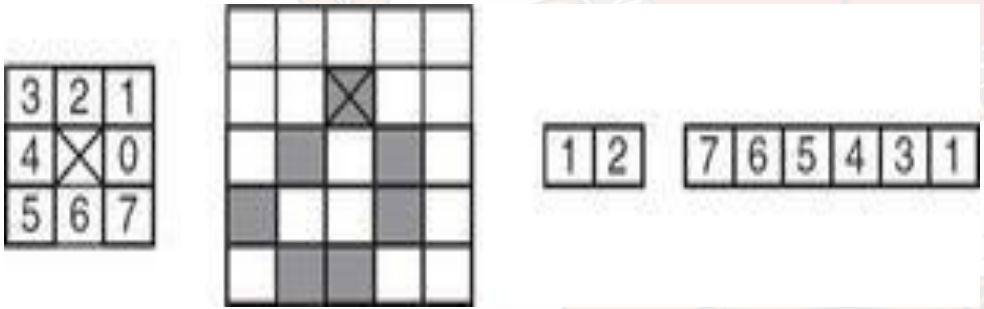
Outline of Presentation

- **Boundary descriptors**
- **chain codes**
- **Moments**
- **Fourier descriptors**

Introduction

- Two ways to represent regions:
  - Boundary (external characteristics)
    - Shape, orientation
  - Whole region (internal characteristics)
    - Color, texture, histogram
- the edge image and represent it more explicitly
- Boundary Chain Codes
- Fourier Descriptors
- Moment Invariants

Boundary Chain Codes



moments

- Spatial moments
- Central moments
- Principal axes
- Moment invariants

Fourier descriptors

- Spectral domain analysis
- DFT
- Low/high frequency

Reference Material

- 1. E. R. Davies, “Computer & Machine Vision”, Fourth Edition, Academic Press, 2012.
- 2. R. Szeliski, “Computer Vision: Algorithms and Applications”, Springer 2011.
- 3. Simon J. D. Prince, “Computer Vision: Models, Learning, and Inference”, Cambridge University Press, 2012.
- 4. Mark Nixon and Alberto S. Aquado, “Feature Extraction & Image Processing for Computer Vision”, Third Edition, Academic Press, 2012.
- 5. Sunita Dhavale, “Advanced Image-Based Spam Detection and Filtering Techniques”, Book Published by CyberTech: An Imprint of MKP Technologies, Hershey, PA, USA IGI Global, March 2017, ISBN13: 9781683180135|ISBN10: 1683180135|EISBN13: 9781683180142|DOI: 10.4018/978-1-68318-013-5.

Computer Vision: Edge Detection Techniques

<<Epilogue>>

- We will meet in next scheduled lecture.
- Try to implement the code using python.
- Feel free to ask your questions.
- Email: sunitadhavale@diat.ac.in

Thank You!