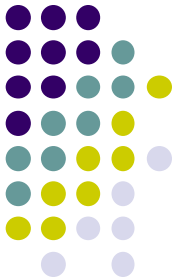
Image Processing and Computer Vision - Lab 6



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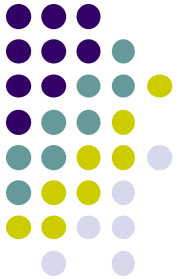
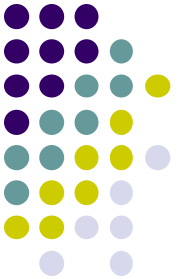
Advanced Image Segmentation



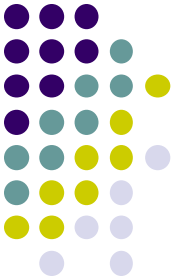
- Today and next week
  - 3 hours
- Text of the exercises/tasks
  - on the Teaching Portal
- You need some still images and some videos
  - both available on the Teaching Portal

Goal



- Use image segmentation techniques and algorithms to solve a realistic problem
  - detect car lanes
- Differently from the previous labs, you have to pick some choices and experiment more…

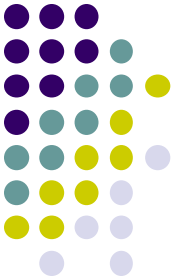
Hough Line Detector



```
lines = cv2.HoughLinesP(img, rho,
theta, threshold, minLineLength,
maxLineGap)
```

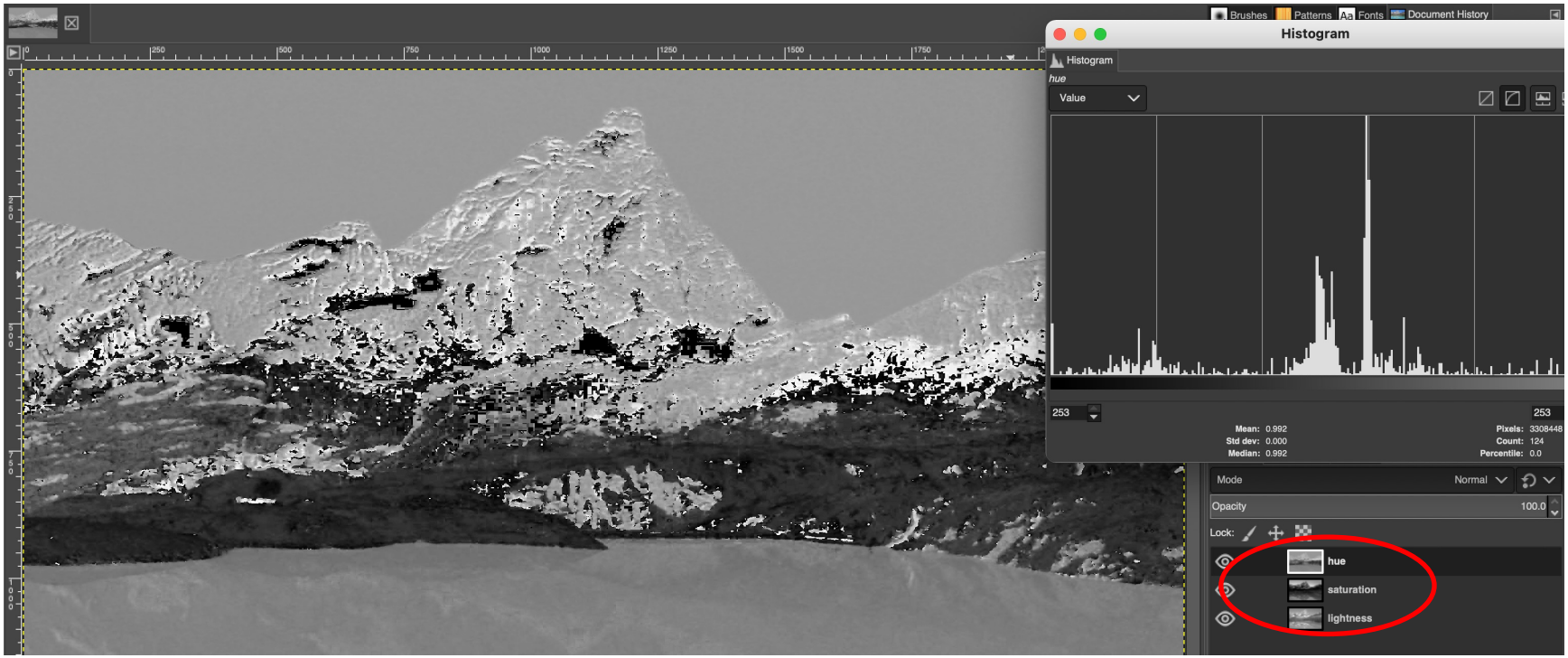
- Find line segments in a binary image using the probabilistic Hough transform, where:
  - `img`: an 8-bit, single-channel binary source image
  - `rho`: Distance resolution of the accumulator in pixels (`1` in this case is fine)
  - `theta`: angle resolution of the accumulator in radians (`np.pi/180` in this case).
  - `maxLineGap`: maximum allowed gap between points on the same line to link them.

Find Non-RGB Values From An Image

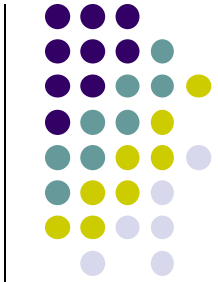


- Use GIMP
  - Colors > Components > Decompose…
  - pick the scale you want
  - the result is one level for each channel of the image
  - select the areas you are interested in for each level and look at the min-max values on the histogram

Find Non-RGB Values From An Image



Advanced Image Segmentation



- Hints, insights, links, etc. are in the text of the exercises
  - I am here for you…
  - … please ask if you need any help or clarification

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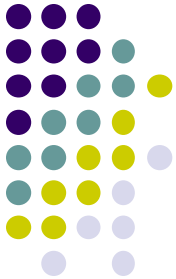

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