



General Information:

Lecture (3 SWS): Mo 13:00 – 13:45 (0.68) and Wed 12:15 - 13:45 (0.68)
Exercises (1 SWS): Tu 10:15 – 11:0 (02.134-113) and Wed 14:15 – 15:00 (00.151-113)
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Appetizers: Statistics is trying to fool you (but this attempt will fail)

Exercise 1 In the interval $[0, 1]$ two numbers are randomly chosen. What is the probability that one number is greater than $\frac{3}{4}$ given that the other one is smaller than $\frac{1}{3}$?

Exercise 2 Vessel diseases are a growing problem in the western world. Now, there is a software that can classify a diseased person as actually diseased with 99% reliability. However, it may happen in 2% of the cases that a healthy person is mistakenly classified as diseased. A statistical analysis shows that the disease is apparent in one out of 100 patients. What is the probability that a patient is actually diseased if the system classifies a disease?

Exercise 3 Programming Task In this exercise, you will be introduced to image processing with Python and OpenCV. You may also use the freely available software. Python and its OpenCV plugin can be accessed in the CIP pool in the computer science building. Of course, you are free to use whatever language you want in order to do the programming part.

- (a) Load and visualize an 8 bit RGB color image (8 bits in each channel).
- (b) Display the image in a window.
- (c) Convert the image from RGB to gray scale.
- (d) Save the converted image to disk as "gray.png".