Exercises to inf5442_h14_3

Submit latest 15-Oct-2014

1. Explain what is a color correction matrix (CCM) and the purpose of color correction.
2. Why should the CCM coefficients for each color add up to 1?
3. Can the CCM be used to perform white balancing?
4. Can you think of reasons why most tone mapping curves use high gain in dark region and low gain in bright region of the picture?
5. Assume a video camera is capturing a scene where the sun is about to disappear behind a cloud; hence more brightness is needed in the picture. Explain why an AEC/AGC algorithm should first try to increase integration time before increasing gain.
6. Create a flowchart diagram of a simple one-window auto-focus algorithm
7. Explain the pros and cons of linear versus cubic interpolation schemes in CMOS sensors