Retinex based Image Enhancement Algorithms

Purpose

To understand the workings of Retinex based low light image enhancement algorithms along with use of Bilateral filter with it.

Team Members

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Plan of action

- The algorithms we plan to implement are Single Scale Retinex (SSR), Multi Scale Retinex (MSR) and Retinex Algorithm with Bilateral Filter.
- To understand these algorithms, we will study color maps like HSV (Hue, Saturation, Value) and HSL (Hue, Saturation, Lightness) to understand their benefits.
- We will collect appropriate test images from various sources that provide good comparison of the algorithms.
- We will implement these algorithms and generate the results.
- Some of the algorithms involve parameter tuning. We will try to understand the nature of these parameters.
- We will refer the following resources along with others:

[1.] Retinex-Like Method for Image Enhancement in Poor Visibility Conditions
[2.] Color Image Enhancement using single scale retinex based on as improved image formation model
[3.] Fast Retinex for Color Image Enhancement: Methods and Algorithms

Conclusion

To develop understanding of Retinex based methods for color enhancement and get familiar with the implementation complexity of bilateral filter.