



# *ISP-DEMOSAICKING (下)*



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*01*

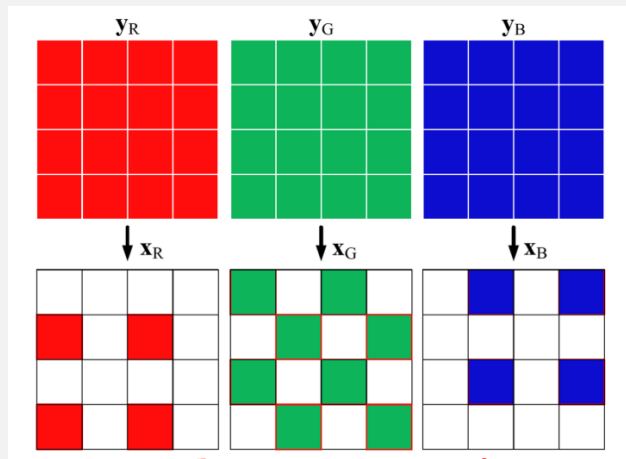
# 算法原理精讲





# 算法精讲-Bayesian估计方法

L2



$$\hat{y}_{OBE} = \frac{\sum_{y \in \Lambda} y P(x|y) P(y)}{\sum_{y \in \Lambda} P(x|y) P(y)}$$

$$\hat{y}_{OBE} = \arg \min_y E[\| \hat{y} - y \|^2 | x] \xrightarrow{CFA}$$

$$\hat{y}_{OBE} = E[y|x] = \sum y P(y|x) = \frac{\sum_{y \in \Lambda} y P(x|y) P(y)}{P(x)}$$

$$y \in \Lambda \quad (0-255)^n$$

$$P(x, y) = P(x|y) P(y)$$

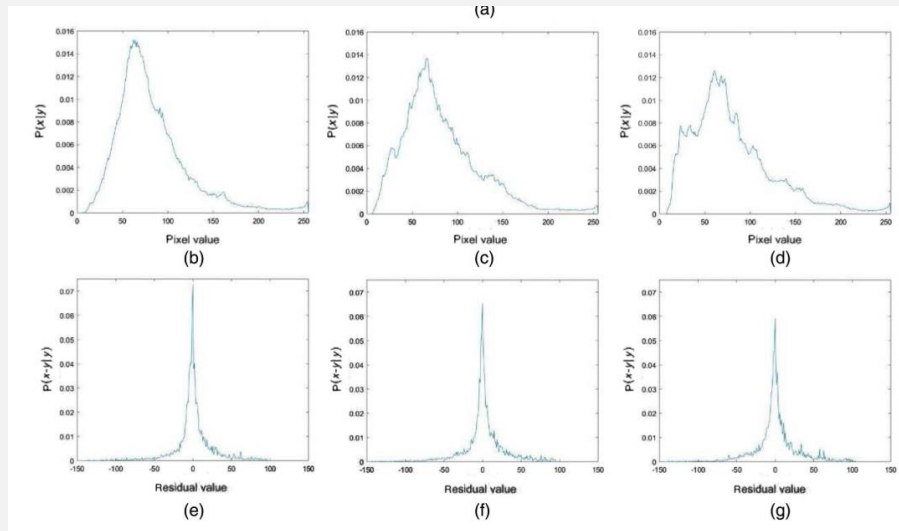
$$P(x) = \sum_{y \in \Lambda} P(x|y) P(y)$$

$$P(y) = \left| \frac{1}{S_y} \right|$$

$$\Rightarrow \hat{y}_{OBE} = \frac{\frac{1}{|S_y|} \sum y(k+m) P(x(k)|y(k+m))}{\frac{1}{|S_y|} \sum P(x(k)|y(k+m))}$$



# 算法精讲-Bayesian估计方法



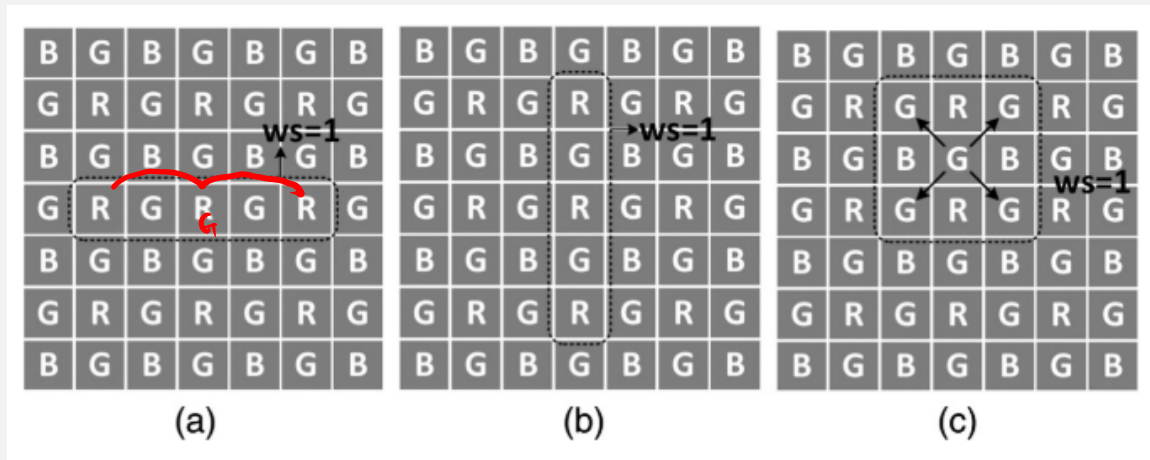
$$\tilde{y}_{G(k)} = \frac{\sum \tilde{y}_{G(k+m)} C(\eta)}{\sum C(\eta)}$$

$$C(\eta) = \exp[-\|V_{G(k)} - V_{G(k+m)}\|_2 / \sigma]$$



# 算法精讲-Bayesian估计方法

水平和垂直方向  $\bar{G} + \mu \Delta = G$

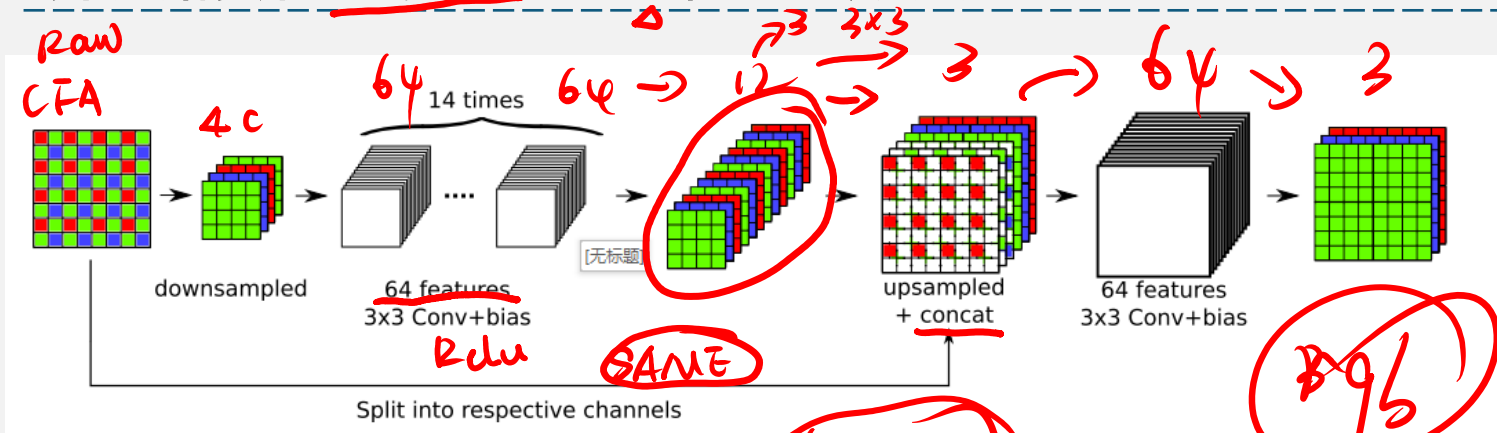


rgb

G (rb) 色差 (rb)



# 算法精讲-马赛克与降噪结合方法



BNR

4 channel

2x2

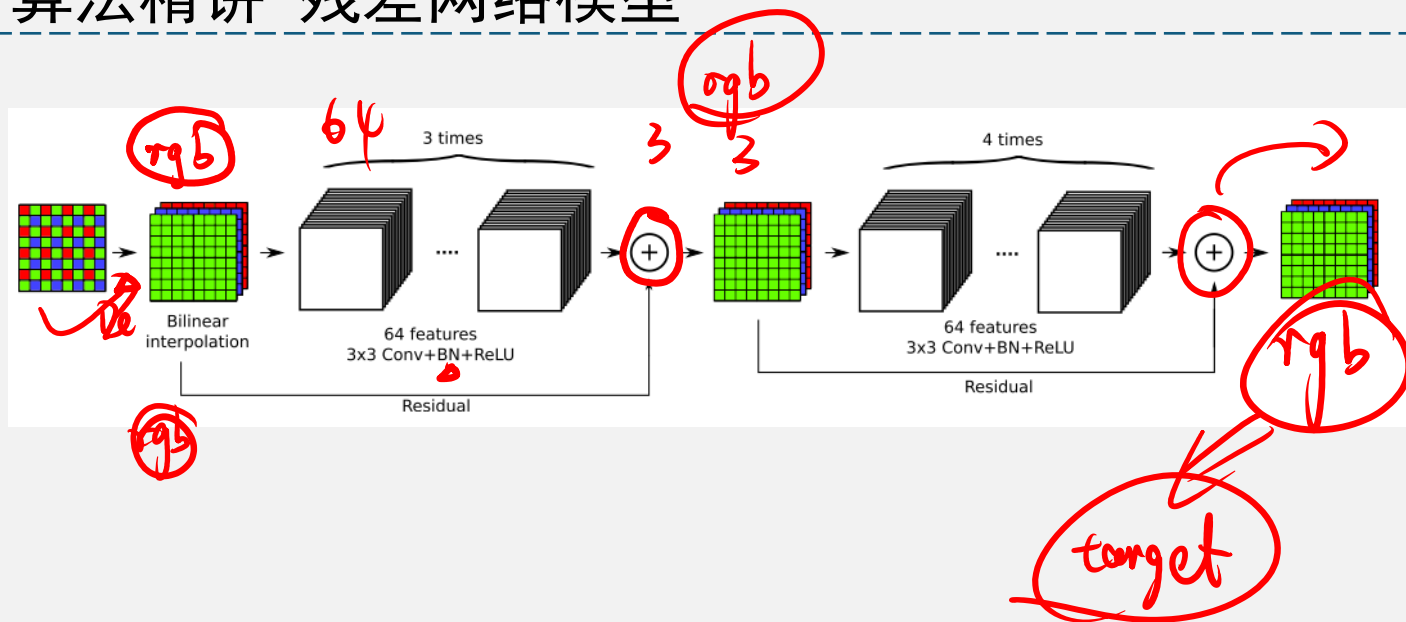
stride 2

RAW

G  
R  
B



# 算法精讲-残差网络模型







02

## 算法代码实现





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*See You!*



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