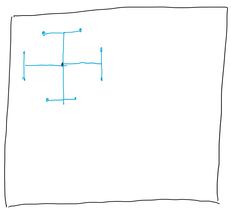
Optimizing Gaussian blur

2022年6月27日 星期一 09:39

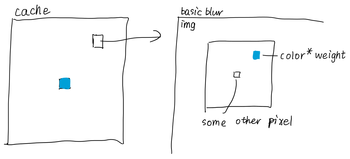
1. Basic Implementation



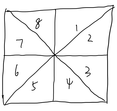
same weight, same color

calculated 8 times

2. We can cache

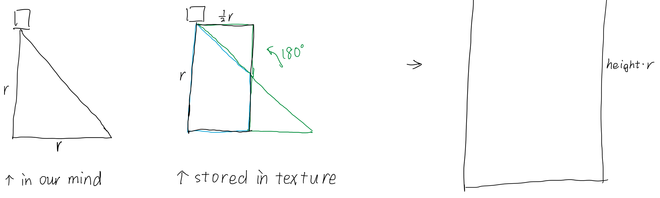


cache



it's the same thing 8x.

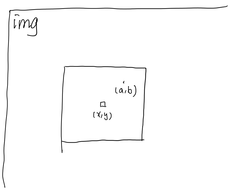
So we cache



↑ in our mind ↑ stored in texture

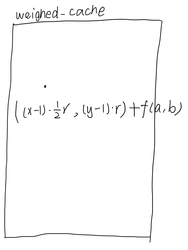
Cache

3. When composing (blurring)

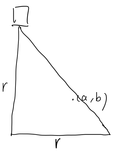


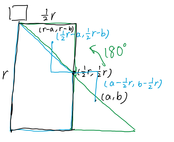
Compose

We read

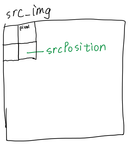


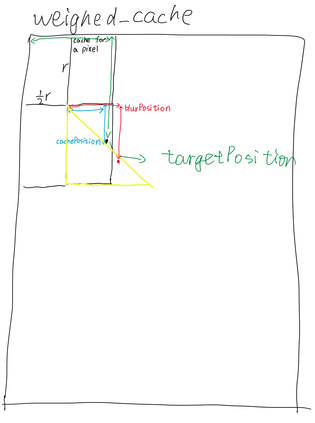
$$f(a,b) = \begin{cases} a \le \frac{1}{2}r & (a,b) \\ a > \frac{1}{2}r & (r-a, r-b) \end{cases}$$





caching





blur = cache + compose