

# Computational Perception: Overview of Material.

#1 Today <sup>5/13</sup> → Representation

#2 Next Week (M-T) <sup>5/16-19</sup> → Filtering, Basic Manipulation

#3 M-W <sup>5/23-25</sup> → Warm up PS due ~~Wed~~ Merging, X-fade, Composite, Sensors  
 Irfan Avey Tue → Colin Dotts with CS4001 Ethics of  
 Photo manip

#4 M-W (3) → <sup>5/30-6/1</sup> Mor W → Sabir

#5 M-T (4) → <sup>6/6-6/9</sup> Camera Models: Light, Color!  
<sup>6/13-6/15</sup> Panorammas, View Morphing  
 critique #1

#6 M-W (3) → <sup>6/20-6/23</sup> HDR  
 Mid-term project!

#7 M-T (4) → Time lapse, Multi View  
 ??  
 proposal

# OVERVIEW

#8 M-W (3) <sup>6/27-29</sup> Non-profit realism <sup>Enkigne #2</sup>

#9 M-T (4) <sup>7/4-7</sup> Authoring, mixed media

#10 M-T (2) <sup>7/11-12</sup> Projects!

# Computational Photography: Digital Representations

\* What is an image?

\* Different formats

— JPG, TIFF, PPM, ...

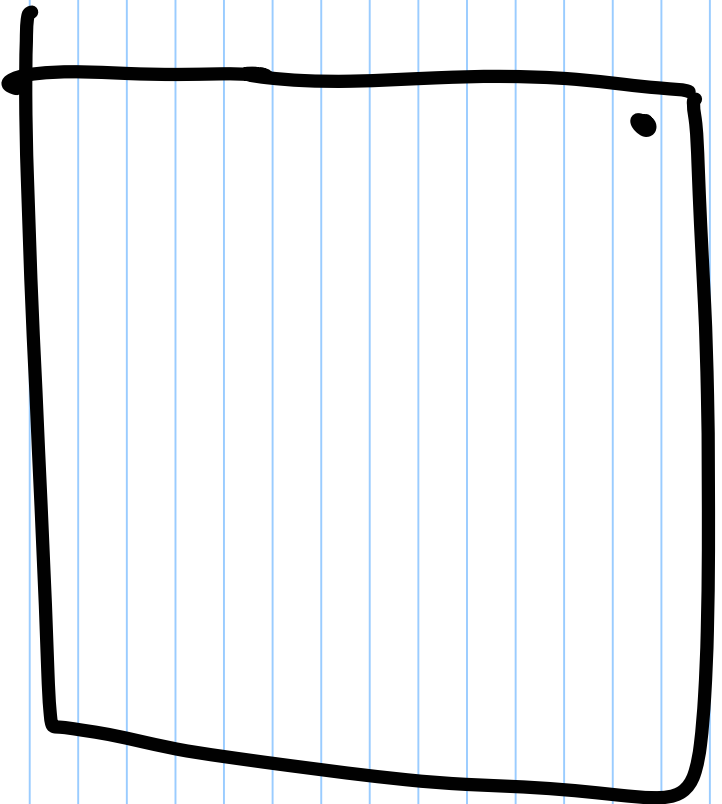
\*

RGB

or

CMYK

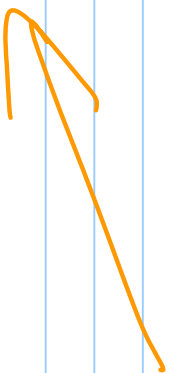
$\alpha B-1$

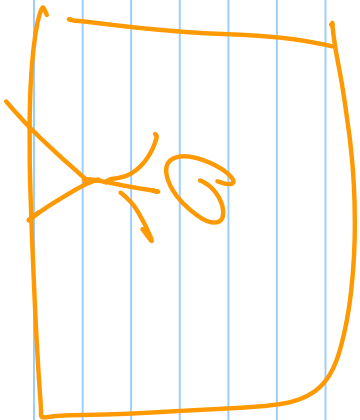


R → 0 255

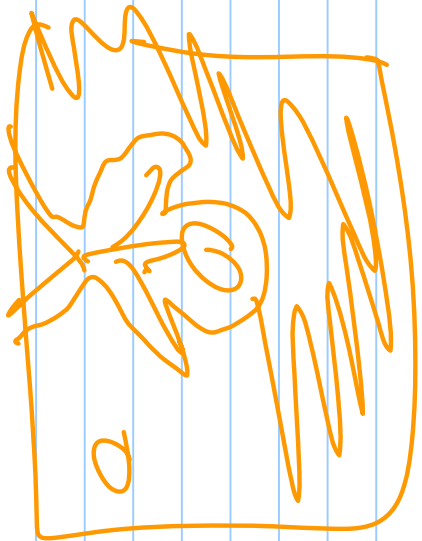
G → 0 255

B → 0 255



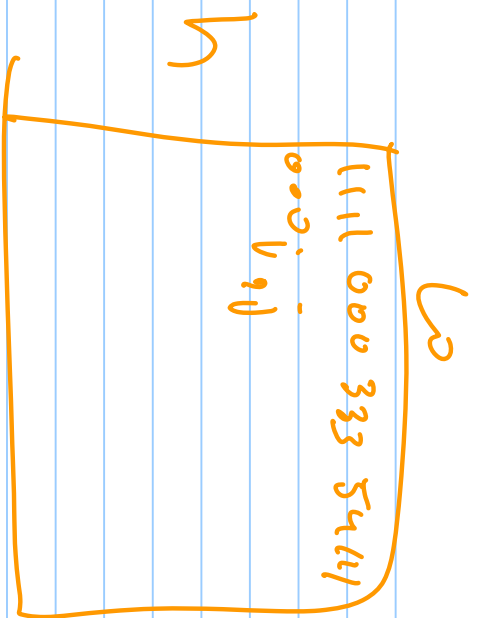


#



Jpeg  
Tiff  
ppms  
bmp

└───┘



$\rightarrow \text{getPixel}(0,0) =$

1111

103

Run-length encoding

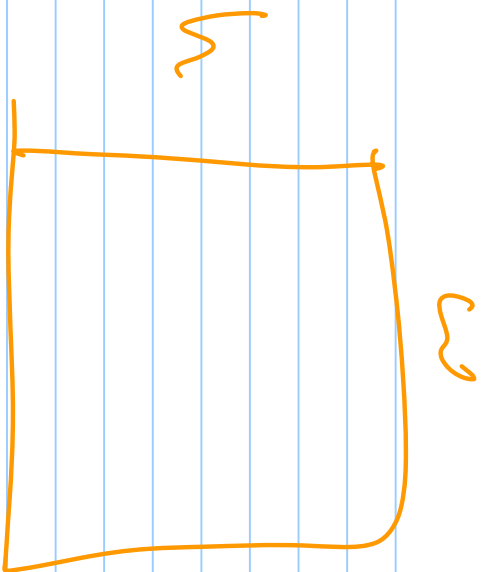
length of the header:  
header [w] [h] [bpb]

~~fit~~

IPs

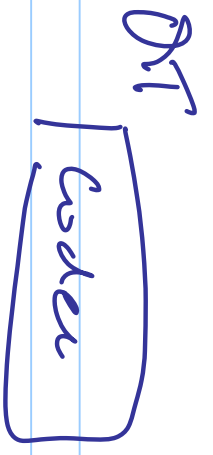
git

hit

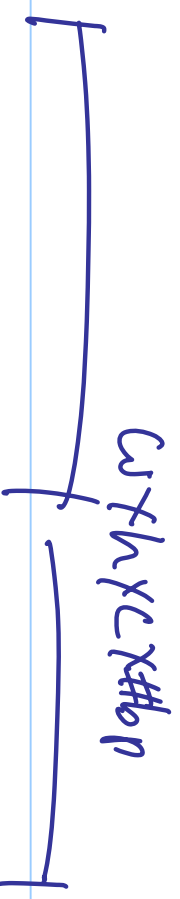
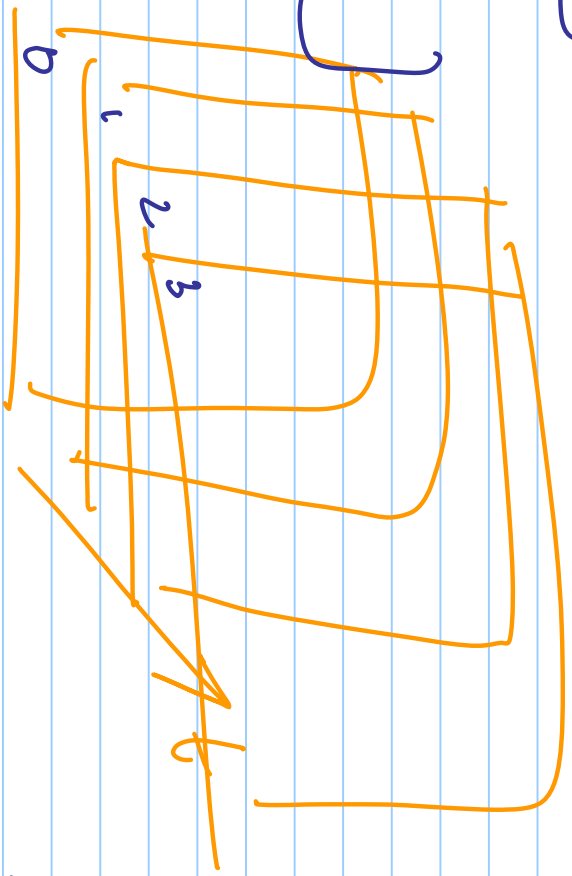
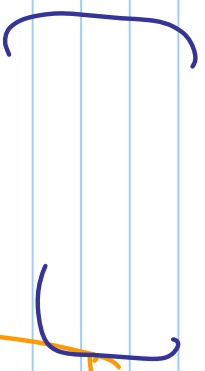


read

write



AVI



0  
1

1  
2  
3

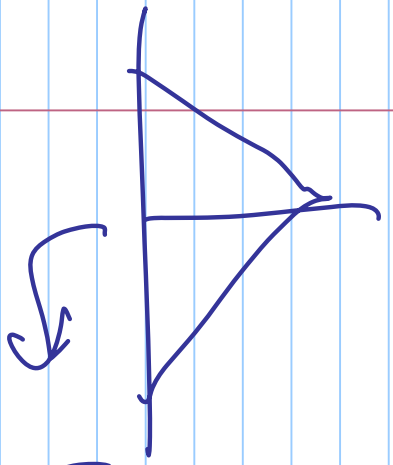
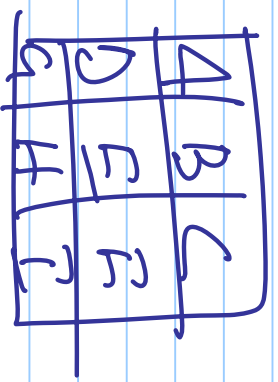
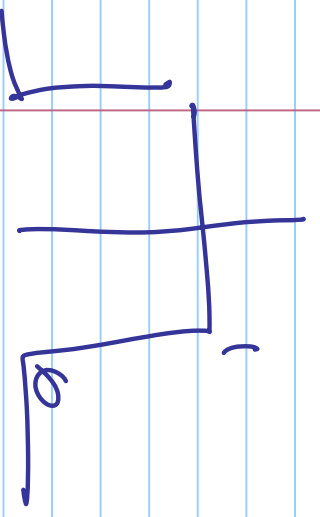
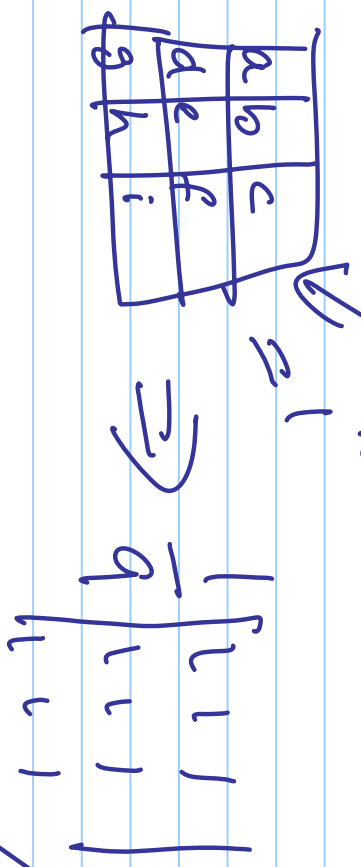
getPixel(i,j,t)

AVI / RT / RP . . . ASF /

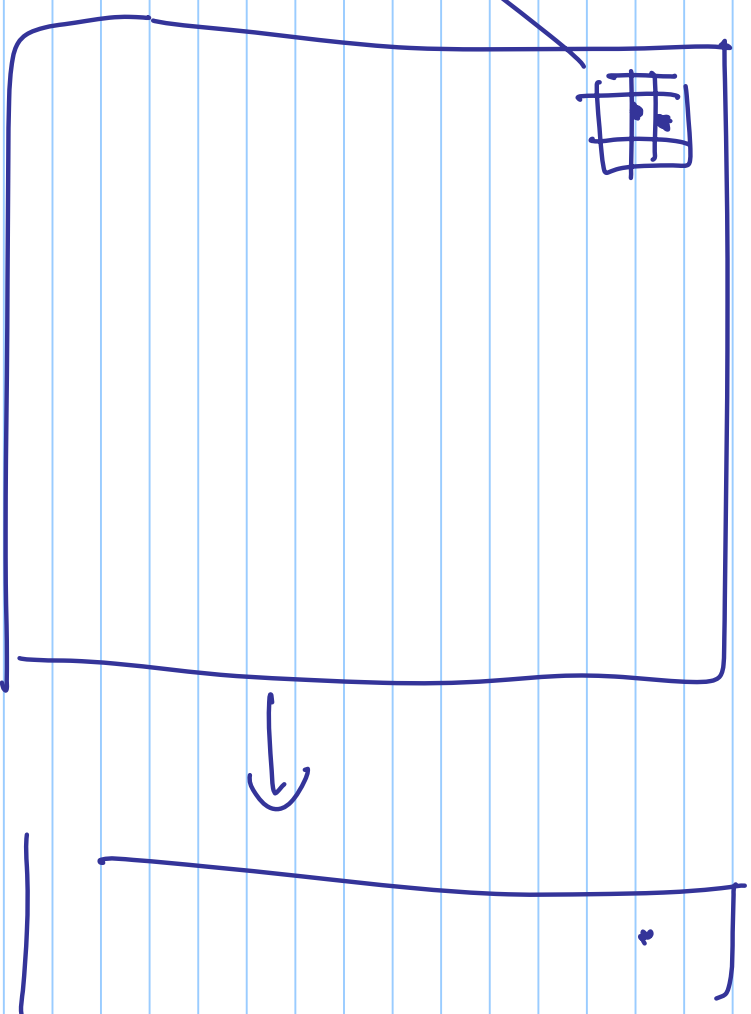
users prefers.

codec.

kernels



unparameter



$$P_i = aA + bB + cC + dD +$$

$$eE + fF + gG + hH + iI$$

Convolution!

→