

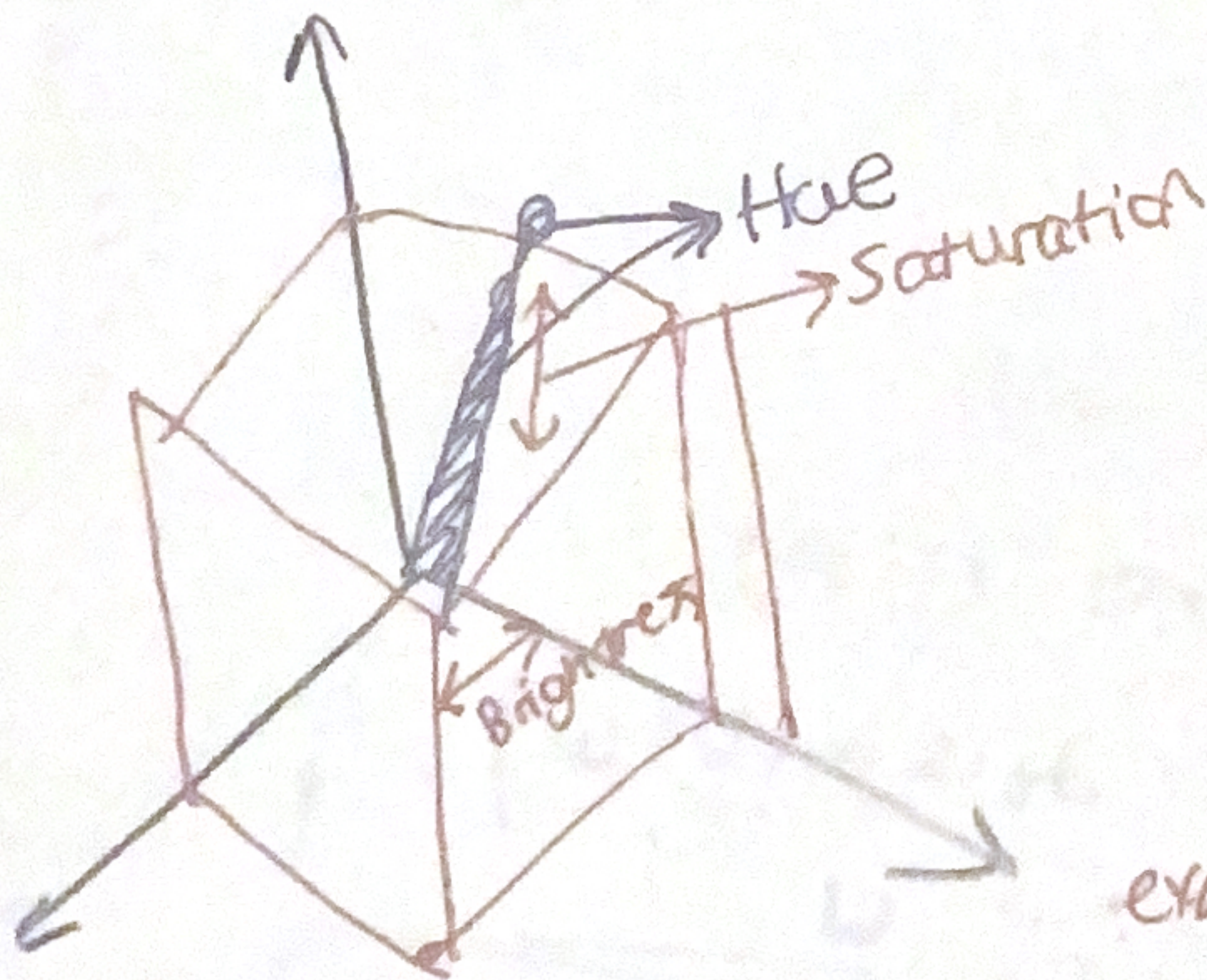
if $\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}$ then $\begin{bmatrix} C \\ M \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 1 \\ 1 \end{bmatrix}$

HSI/HSV Color Model

Suitable for humans.

- * Hue \rightarrow Pure color (RGB CMYK)
- * Saturation \rightarrow Measure of purity, degree of which a pure color is diluted by white light
- * Luminance / Value / Intensity \rightarrow Brilliance of color

HSI Geometric Representation



\rightarrow Choose color, then saturation then brightness.

$$I_{HSV} = rgb2HSV(I)$$

$I_{HSV}(i, :, 1)$ (hue)
 \rightarrow colors, red is at the end

$$[m \ n \ c] = \text{size}(I)$$

ex) for $i=1:m$
 for $j=1:n$

if ($I_{HSV}(i, j, 1) < 0.95$)

$$I_{I}(i, j, 1) = 0;$$

ex) if $I_{HSV}(i, j, 1) < 0.90$:

$$I(i, j, :) = \frac{I(i, j, 1) + I(i, j, 2) + I(i, j, 3)}{3}$$

\rightarrow convert to grayscale (everything but red)

ex) \rightarrow brightness

$$I_{HSV}(i, :, 3) = I_{HSV}(i, :, 3) - 0.5 \rightarrow \text{becomes darker}$$

$$I_{new} = HSV2RGB(I_{HSV})$$